

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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 3	Spent by End Q3	% Budget Released	% Budget Spent	% Releases Spent
Recurrent Wage	22.472	16.854	16.856	75.0%	75.0%	100.0%
Non Wage	19.717	14.878	13.526	75.5%	68.6%	90.9%
Dev't. GoU	37.473	18.334	15.850	48.9%	42.3%	86.4%
Ext. Fin.	0.000	0.000	0.000	0.0%	0.0%	0.0%
<b>GoU Total</b>	<b>79.662</b>	<b>50.067</b>	<b>46.232</b>	<b>62.8%</b>	<b>58.0%</b>	<b>92.3%</b>
<b>Total GoU+Ext Fin (MTEF)</b>	<b>79.662</b>	<b>50.067</b>	<b>46.232</b>	<b>62.8%</b>	<b>58.0%</b>	<b>92.3%</b>
Arrears	0.000	0.000	0.000	0.0%	0.0%	0.0%
<b>Total Budget</b>	<b>79.662</b>	<b>50.067</b>	<b>46.232</b>	<b>62.8%</b>	<b>58.0%</b>	<b>92.3%</b>
<i>A.I.A Total</i>	0.000	0.000	0.000	0.0%	0.0%	0.0%
<b>Grand Total</b>	<b>79.662</b>	<b>50.067</b>	<b>46.232</b>	<b>62.8%</b>	<b>58.0%</b>	<b>92.3%</b>
<b>Total Vote Budget Excluding Arrears</b>	<b>79.662</b>	<b>50.067</b>	<b>46.232</b>	<b>62.8%</b>	<b>58.0%</b>	<b>92.3%</b>

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

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% Budget Released	% Budget Spent	% Releases Spent
Program: 0151 Agricultural Research	79.66	50.07	46.23	62.8%	58.0%	92.3%
<b>Total for Vote</b>	<b>79.66</b>	<b>50.07</b>	<b>46.23</b>	<b>62.8%</b>	<b>58.0%</b>	<b>92.3%</b>

### Matters to note in budget execution

NARO has faced the following challenges in budget execution:

- Effectively conducting research with inadequate funding
- Operating with inadequate human resource
- Working with limited research infrastructure.
- Inadequately engaging stakeholders
- Enhancing access to information.
- Responding to dynamic change in technology.
- Ensuring good governance amidst rationalization of agencies.
- Operating under competing land use interests.
- Addressing the challenges of climate change.

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

<i>(i) Major unspent balances</i>
<b>Programs , Projects</b>
<b>Program 0151 Agricultural Research</b>

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<b>1.047 Bn Shs</b>	<b>SubProgram/Project :01 Headquarters</b>
Reason:	
<i>Items</i>	
<b>236,485,226.000 UShs</b>	227001 Travel inland
Reason: Postponement of some of monitoring exercises due to more concentration of the Locust invasion management initiatives in carried out in the North-west region.	
<b>161,028,164.000 UShs</b>	221002 Workshops and Seminars
Reason: Late receipt of the invoices from the Venue halls providers, thus non payment by the end the quarter.	
<b>124,788,385.000 UShs</b>	221001 Advertising and Public Relations
Reason: Late receipt of the invoices from the media, thus non payment by the end the quarter	
<b>87,618,186.000 UShs</b>	226001 Insurances
Reason: There were some changes in fleet management as some vehicles were subjected to disposal	
<b>80,906,516.000 UShs</b>	228002 Maintenance - Vehicles
Reason: Pre-inspection reports delayed leading to late repairs of the motor vehicles thus non- payments to garages	
<b>0.011 Bn Shs</b>	<b>SubProgram/Project :26 NARO Internal Audit</b>
Reason: Identification of new, cheaper venue services leading to pay less than anticipated. Postponement of the monitoring exercise to 4th qtr	
<i>Items</i>	
<b>8,551,000.000 UShs</b>	221002 Workshops and Seminars
Reason: Identification of new, cheaper venue services leading to pay less than anticipated	
<b>2,800,000.000 UShs</b>	221003 Staff Training
Reason: Postponement of the monitoring exercise to 4th qtr	
<b>2.479 Bn Shs</b>	<b>SubProgram/Project :0382 Support for NARO</b>
Reason:	
<i>Items</i>	
<b>807,693,411.000 UShs</b>	312202 Machinery and Equipment
Reason: The imported machinery and equipment could not arrive due to Covid 19 pandemic in China which interrupted the delivery of the machinery.	
<b>436,672,448.000 UShs</b>	221002 Workshops and Seminars
Reason: Postponement of the intended workshops due to prioritising and concentrating to the management of the control of the locusts in the country.	
<b>313,779,230.000 UShs</b>	221001 Advertising and Public Relations
Reason: Delayed receipt of the invoices as at the end the qtr.	
<b>242,372,309.000 UShs</b>	225001 Consultancy Services- Short term
Reason: The Consultant firm had issues with registration on IFMS leading to failure to accomplish payment on IFMS	

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<b>221,557,848.000 UShs</b>	222003 Information and communications technology (ICT)
Reason: The PPDU process encountered issues on IFMS which led to late payment to the suppliers.	
<i>(ii) Expenditures in excess of the original approved budget</i>	

### V2: Performance Highlights

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

<b>Programme : 51 Agricultural Research</b>			
<b>Responsible Officer: Director General</b>			
<b>Programme Outcome: Increased production and productivity of priority and strategic commodities</b>			
<b>Sector Outcomes contributed to by the Programme Outcome</b>			
1 .Increased production and productivity of priority and strategic commodities			
<b>Programme Outcome Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
Percentage of new varieties promoted and adopted by farmers and other users	Percentage	12%	7%
Number of commercialisable technologies and innovations generated through competitive grant projects	Number	5	1
Increased production and productivity at some level resulting from utilization of improved technologies	Percentage	1.8%	0.9%

Table V2.2: Key Vote Output Indicators\*

<b>Programme : 51 Agricultural Research</b>			
<b>Sub Programme : 01 Headquarters</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	60	41
No. of new varieties submitted to Variety Release Committee for release	Number	15	20
No. of research studies under competitive grants scheme	Number	19	38
<b>KeyOutPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of technological innovation platforms established/supported	Number	20	32
No. of technological innovations delivered to uptake pathways	Number	50	42
<b>Sub Programme : 07 National Crops Resources Research Institute</b>			

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<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	8	11
No. of new varieties submitted to Variety Release Committee for release	Number	5	13
No. of research studies under competitive grants scheme	Number		4
<b>KeyOutputPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of technological innovation platforms established/supported	Number	3	4
No. of technological innovations delivered to uptake pathways	Number	10	10
<b>Sub Programme : 08 National Fisheries Resources Research Institute</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	8	8
No. of research studies under competitive grants scheme	Number		4
<b>KeyOutputPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of technological innovations delivered to uptake pathways	Number	10	5
<b>Sub Programme : 09 National Forestry Resources Research Institute</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	8	4
No. of research studies under competitive grants scheme	Number		3
<b>KeyOutputPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of technological innovation platforms established/supported	Number	3	3
No. of technological innovations delivered to uptake pathways	Number	5	3
<b>Sub Programme : 10 National Livestock Resources Research</b>			

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<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	8	5
No. of research studies under competitive grants scheme	Number		10
<b>KeyOutputPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of technological innovation platforms established/supported	Number	5	9
No. of technological innovations delivered to uptake pathways	Number	10	9
<b>Sub Programme : 11 National Semi arid Resources Research</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	8	4
No. of new varieties submitted to Variety Release Committee for release	Number	5	5
No. of research studies under competitive grants scheme	Number		2
<b>Sub Programme : 12 National Laboratories Research</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	8	4
No. of new varieties submitted to Variety Release Committee for release	Number	5	4
No. of research studies under competitive grants scheme	Number		3
<b>KeyOutputPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of technological innovation platforms established/supported	Number	5	7
No. of technological innovations delivered to uptake pathways	Number	5	14
<b>Sub Programme : 13 Abi ZARDI</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	5	3

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<b>KeyOutputPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of technological innovation platforms established/supported	Number	2	2
No. of technological innovations delivered to uptake pathways	Number	10	6
<b>Sub Programme : 14 Bulindi ZARDI</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	5	4
<b>KeyOutputPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of technological innovation platforms established/supported	Number	3	2
No. of technological innovations delivered to uptake pathways	Number	10	9
<b>Sub Programme : 15 Kachwekano ZARDI</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	5	3
No. of new varieties submitted to Variety Release Committee for release	Number	2	2
<b>Sub Programme : 16 Mukono ZARDI</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	5	3
<b>Sub Programme : 17 Ngetta ZARDI</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	5	3
<b>KeyOutputPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of technological innovation platforms established/supported	Number	2	3

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No. of technological innovations delivered to uptake pathways	Number	10	7
<b>Sub Programme : 18 Nabium ZARDI</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	5	2
No. of new varieties submitted to Variety Release Committee for release	Number	1	0
<b>KeyOutputPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of technological innovation platforms established/supported	Number	2	1
No. of technological innovations delivered to uptake pathways	Number	5	3
<b>Sub Programme : 19 Mbarara ZARDI</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	5	13
<b>Sub Programme : 20 Buginyaya ZARDI</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	10	5
No. of new varieties submitted to Variety Release Committee for release	Number	3	0
<b>Sub Programme : 21 Rwebitaba ZARDI</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	5	6
<b>Sub Programme : 27 National Coffee Research Institute</b>			
<b>KeyOutputPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2019/20</b>	<b>Actuals By END Q3</b>
No. of improved productivity technologies generated	Number	8	3
No. of new varieties submitted to Variety Release Committee for release	Number	5	0

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KeyOutputPut : 02 Research extension interface promoted and strengthened			
Key Output Indicators	Indicator Measure	Planned 2019/20	Actuals By END Q3
No. of technological innovation platforms established/supported	Number	1	6
No. of technological innovations delivered to uptake pathways	Number	5	5

### Performance highlights for the Quarter

The following are among the key highlights during the reporting period:

1. NARO has continued to generate relevant technological products, services and innovations for agro-industry and ensuring food and nutrition security. In spite of COVID-19 pandemic effects, NARO in the end of the third quarter of FY 2019/20, registered significant achievements in the different targeted Key Performance Indicators (KPIs). A total of 20 varieties were submitted for release, 41 technologies generated, 32 innovation platforms supported and 40 innovations delivered to uptake pathways.

2. NARO has also constituted a Vaccinology Research programme at NaLIRRI under which all vaccine research and development is being undertaken. NARO is in advanced stages of obtaining Title of the 10 square miles of land allocated for livestock research at Maruzi.

3. Land with a title has been secured and engineering designs approved for establishment of proposed satellite station for fisheries research on Lake Albert,

4. By the end of the quarter, Lakes Kyoga, Kwania and Kibimba dam which were previously Kariba weed hotspots are now over 90% clear of the weed due to the deployment of an integrated management approach using bio-agents (*Cyrtobagous salvinia* weevils) and some mechanical removal,

5. By the end of the quarter, NARO technologies, information and management practices (TIMPs) were showcased to at least 10,000 stakeholders during the National Agricultural Show in Jinja; 10,000 stakeholders at the World Food Day 2019 at Bulindi ZARDI, and to 15,000 stakeholders in five (5) Farm Clinics held at Kituza, Bulindi ZARDI, Ngetta ZARDI, Kamenyamigo and Bulegeni; and Harvest Money Expo,

## V3: Details of Releases and Expenditure

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

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% GoU Budget Released	% GoU Budget Spent	%GoU Releases Spent
<b>Program 0151 Agricultural Research</b>	<b>79.66</b>	<b>50.07</b>	<b>46.23</b>	<b>62.8%</b>	<b>58.0%</b>	<b>92.3%</b>
<i>Class: Outputs Provided</i>	<i>60.91</i>	<i>43.97</i>	<i>40.81</i>	<i>72.2%</i>	<i>67.0%</i>	<i>92.8%</i>
015101 Generation of agricultural technologies	10.82	8.03	7.88	74.2%	72.9%	98.2%
015102 Research extension interface promoted and strengthened	5.62	3.48	2.01	61.9%	35.8%	57.9%
015103 Internal Audit	0.13	0.10	0.09	76.6%	67.8%	88.5%
015104 Agricultural research capacity strengthened	44.34	32.36	30.82	73.0%	69.5%	95.2%
<i>Class: Outputs Funded</i>	<i>1.84</i>	<i>1.01</i>	<i>0.99</i>	<i>54.8%</i>	<i>53.9%</i>	<i>98.4%</i>
015151 Payments to International Organisations (CGIAR, ASARECA, WARDA)	1.84	1.01	0.99	54.8%	53.9%	98.4%
<i>Class: Capital Purchases</i>	<i>16.91</i>	<i>5.08</i>	<i>4.43</i>	<i>30.1%</i>	<i>26.2%</i>	<i>87.1%</i>
015172 Government Buildings and Administrative Infrastructure	12.92	3.11	3.34	24.1%	25.9%	107.5%
015176 Purchase of Office and ICT Equipment, including Software	0.79	0.27	0.15	34.1%	19.5%	57.2%
015177 Purchase of Specialised Machinery & Equipment	2.72	1.46	0.77	53.9%	28.3%	52.6%



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<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% GoU Budget Released	% GoU Budget Spent	%GoU Releases Spent
015178 Purchase of Office and Residential Furniture and Fittings	0.49	0.24	0.16	50.0%	33.6%	67.1%
<b>Total for Vote</b>	<b>79.66</b>	<b>50.07</b>	<b>46.23</b>	<b>62.8%</b>	<b>58.0%</b>	<b>92.3%</b>

**Table V3.2: 2019/20 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>60.91</b>	<b>43.97</b>	<b>40.81</b>	72.2%	67.0%	92.8%
211102 Contract Staff Salaries	22.47	16.85	16.86	75.0%	75.0%	100.0%
211103 Allowances (Inc. Casuals, Temporary)	2.32	1.75	1.74	75.3%	74.9%	99.4%
212101 Social Security Contributions	2.23	1.67	1.67	75.0%	75.0%	100.0%
213001 Medical expenses (To employees)	0.30	0.30	0.30	100.0%	100.0%	100.0%
213002 Incapacity, death benefits and funeral expenses	0.15	0.11	0.11	75.0%	75.0%	100.0%
213004 Gratuity Expenses	1.86	1.39	1.39	75.0%	75.0%	100.0%
221001 Advertising and Public Relations	1.82	1.31	0.88	72.2%	48.1%	66.6%
221002 Workshops and Seminars	4.67	2.85	2.24	61.1%	48.1%	78.7%
221003 Staff Training	1.44	0.49	0.47	33.6%	32.8%	97.6%
221004 Recruitment Expenses	0.20	0.20	0.16	100.0%	79.8%	79.8%
221006 Commissions and related charges	0.93	0.62	0.53	67.4%	57.3%	85.0%
221007 Books, Periodicals & Newspapers	0.14	0.08	0.05	55.7%	34.3%	61.6%
221008 Computer supplies and Information Technology (IT)	0.30	0.18	0.14	60.1%	45.2%	75.3%
221009 Welfare and Entertainment	0.51	0.37	0.34	71.6%	65.5%	91.5%
221011 Printing, Stationery, Photocopying and Binding	0.76	0.52	0.43	68.4%	57.3%	83.8%
221012 Small Office Equipment	0.03	0.02	0.02	72.2%	61.9%	85.7%
221016 IFMS Recurrent costs	0.26	0.17	0.12	65.4%	46.8%	71.5%
221017 Subscriptions	0.15	0.08	0.06	50.0%	39.5%	78.9%
222001 Telecommunications	0.15	0.11	0.11	74.9%	74.5%	99.5%
222002 Postage and Courier	0.01	0.01	0.00	75.0%	44.4%	59.2%
222003 Information and communications technology (ICT)	0.49	0.36	0.13	73.3%	25.8%	35.2%
223001 Property Expenses	0.30	0.30	0.30	100.0%	99.1%	99.1%
223002 Rates	0.10	0.10	0.05	100.0%	50.0%	50.0%
223004 Guard and Security services	0.34	0.26	0.25	75.0%	73.4%	97.8%
223005 Electricity	1.47	1.04	0.96	71.0%	65.5%	92.2%
223006 Water	0.20	0.15	0.13	75.0%	68.1%	90.8%
224001 Medical Supplies	2.15	1.47	1.47	68.5%	68.2%	99.6%
224004 Cleaning and Sanitation	0.30	0.23	0.22	75.0%	72.9%	97.2%
224005 Uniforms, Beddings and Protective Gear	0.07	0.04	0.01	56.1%	19.7%	35.1%
224006 Agricultural Supplies	3.68	3.01	2.97	81.7%	80.8%	98.8%
225001 Consultancy Services- Short term	1.57	1.12	0.86	71.5%	55.0%	76.9%
226001 Insurances	0.22	0.20	0.12	92.1%	52.5%	57.0%
226002 Licenses	0.25	0.13	0.10	50.0%	39.3%	78.6%

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227001 Travel inland	3.78	2.38	2.06	63.0%	54.6%	86.7%
227002 Travel abroad	0.52	0.34	0.25	64.9%	47.4%	73.1%
227004 Fuel, Lubricants and Oils	1.63	1.29	1.15	79.4%	70.7%	89.1%
228001 Maintenance - Civil	1.34	0.99	0.95	73.9%	70.5%	95.5%
228002 Maintenance - Vehicles	1.12	1.00	0.83	89.1%	74.3%	83.4%
228003 Maintenance – Machinery, Equipment & Furniture	0.47	0.34	0.29	70.7%	60.2%	85.2%
228004 Maintenance – Other	0.12	0.09	0.05	72.8%	41.2%	56.6%
273102 Incapacity, death benefits and funeral expenses	0.08	0.06	0.03	75.0%	40.1%	53.4%
<b>Class: Outputs Funded</b>	<b>1.84</b>	<b>1.01</b>	<b>0.99</b>	<b>54.8%</b>	<b>53.9%</b>	<b>98.4%</b>
262201 Contributions to International Organisations (Capital)	1.80	0.99	0.99	55.1%	55.1%	100.0%
264101 Contributions to Autonomous Institutions	0.04	0.02	0.00	41.6%	5.7%	13.6%
<b>Class: Capital Purchases</b>	<b>16.91</b>	<b>5.08</b>	<b>4.43</b>	<b>30.1%</b>	<b>26.2%</b>	<b>87.1%</b>
281501 Environment Impact Assessment for Capital Works	0.40	0.05	0.08	12.5%	20.0%	160.0%
281502 Feasibility Studies for Capital Works	0.52	0.15	0.27	29.0%	52.6%	181.5%
281503 Engineering and Design Studies & Plans for capital works	0.52	0.22	0.42	42.5%	80.4%	189.1%
281504 Monitoring, Supervision & Appraisal of capital works	0.40	0.15	0.20	37.5%	49.3%	131.4%
312101 Non-Residential Buildings	7.79	2.51	2.35	32.2%	30.2%	93.8%
312102 Residential Buildings	1.63	0.00	0.00	0.0%	0.0%	0.0%
312104 Other Structures	1.67	0.03	0.02	1.8%	1.5%	83.3%
312202 Machinery and Equipment	3.50	1.73	0.92	49.4%	26.3%	53.3%
312203 Furniture & Fixtures	0.49	0.24	0.16	50.0%	33.6%	67.1%
<b>Total for Vote</b>	<b>79.66</b>	<b>50.07</b>	<b>46.23</b>	<b>62.8%</b>	<b>58.0%</b>	<b>92.3%</b>

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

<i>Billion Uganda Shillings</i>	<b>Approved Budget</b>	<b>Released</b>	<b>Spent</b>	<b>% GoU Budget Released</b>	<b>% GoU Budget Spent</b>	<b>%GoU Releases Spent</b>
<b>Program 0151 Agricultural Research</b>	<b>79.66</b>	<b>50.07</b>	<b>46.23</b>	<b>62.8%</b>	<b>58.0%</b>	<b>92.3%</b>
<i>Recurrent SubProgrammes</i>						
01 Headquarters	35.07	26.38	25.04	75.2%	71.4%	94.9%
07 National Crops Resources Research Institute	0.65	0.49	0.49	75.6%	75.6%	100.0%
08 National Fisheries Resources Research Institute	0.99	0.76	0.76	77.1%	77.1%	100.0%
09 National Forestry Resources Research Institute	0.65	0.49	0.49	76.1%	76.1%	100.0%
10 National Livestock Resources Research	0.18	0.14	0.14	75.7%	75.7%	100.0%
11 National Semi arid Resources Research	0.08	0.06	0.06	75.0%	75.0%	100.0%
12 National Laboratories Research	0.30	0.22	0.22	75.2%	75.2%	100.0%
13 Abi ZARDI	0.28	0.21	0.21	75.7%	75.7%	100.0%
14 Bulindi ZARDI	0.49	0.37	0.37	75.0%	75.0%	100.0%
15 Kachwekano ZARDI	0.48	0.36	0.36	75.0%	75.0%	100.0%
16 Mukono ZARDI	0.48	0.36	0.36	75.0%	75.0%	100.0%
17 Ngetta ZARDI	0.48	0.34	0.34	71.2%	71.2%	100.0%
18 Nabium ZARDI	0.35	0.27	0.27	76.8%	76.8%	100.0%

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 National Agricultural Research Organisation

## QUARTER 3: Highlights of Vote Performance

19 Mbarara ZARDI	0.48	0.36	<b>0.36</b>	75.2%	75.2%	100.0%
20 Buginyaya ZARDI	0.48	0.35	<b>0.35</b>	72.1%	72.1%	100.0%
21 Rwebitaba ZARDI	0.48	0.35	<b>0.35</b>	73.3%	73.3%	100.0%
26 NARO Internal Audit	0.13	0.10	<b>0.09</b>	76.6%	67.8%	88.5%
27 National Coffee Research Institute	0.18	0.13	<b>0.13</b>	75.0%	75.0%	100.0%
<i>Development Projects</i>						
0382 Support for NARO	35.44	17.37	<b>14.89</b>	49.0%	42.0%	85.7%
1560 Relocation and Operationalisation of the National Livestock Resources Research Institute (NALIRRI)	2.03	0.96	<b>0.96</b>	47.3%	47.3%	99.9%
<b>Total for Vote</b>	<b>79.66</b>	<b>50.07</b>	<b>46.23</b>	<b>62.8%</b>	<b>58.0%</b>	<b>92.3%</b>

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

<i>Billion Uganda Shillings</i>	<b>Approved Budget</b>	<b>Released</b>	<b>Spent</b>	<b>% Budget Released</b>	<b>% Budget Spent</b>	<b>%Releases Spent</b>
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# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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>Program: 51 Agricultural Research</b>			
<i>Recurrent Programmes</i>			
<b>Subprogram: 01 Headquarters</b>			
<i>Outputs Provided</i>			
<b>Output: 01 Generation of agricultural technologies</b>			
1. Prepare, Print and submit the NARO (BFP, MPS and NARO Annual Work Plan);	- Prepared, and submit the NARO Ministerial Policy Statement.	<b>Item</b>	<b>Spent</b>
2. Conduct Budget committee meeting;	- NARO Budget framework paper compiled and submitted. - Compiled	211103 Allowances (Inc. Casuals, Temporary)	10,650
3. Support PARIs during the ARPM;	NARO Annual Report FY 2017-2018. -	221002 Workshops and Seminars	9,500
4. Conduct NAROSEC and NARO Wide ARPM and other stakeholder engagements;	Compiled NARO Annual work plan FY 2019-2020.. Printed and distributed 200 copies.	221006 Commissions and related charges	91,352
5. Status of work plan implement		222001 Telecommunications	15,000
		223006 Water	9,600
		227001 Travel inland	8,310
		<b>Total</b>	<b>144,412</b>
		Wage Recurrent	0
		Non Wage Recurrent	144,412
		<i>AIA</i>	0
<b>Output: 02 Research extension interface promoted and strengthened</b>			
- NARO visibility in public events and Agricultural shows enhanced;	- Organised five farm clinic.s	<b>Item</b>	<b>Spent</b>
- Improved technologies, planting materials and agricultural Information materials generated, promoted and availed to stakeholders;		221001 Advertising and Public Relations	30,325
- Strengthen processes for linking research products to		221002 Workshops and Seminars	8,971
		227001 Travel inland	9,754
		<b>Total</b>	<b>49,050</b>
		Wage Recurrent	0
		Non Wage Recurrent	49,050
		<i>AIA</i>	0
<b>Output: 04 Agricultural research capacity strengthened</b>			
- NARO land assets titled, monitored and secured;	- NARO land assets in Tororo surveyed. -	<b>Item</b>	<b>Spent</b>
-NARO Land issues attended to;	Surveyed Land fenced at Entebbe	211102 Contract Staff Salaries	16,855,781
- NARO Infrastructure (office, laboratory, residence, farm and field) facilities monitored and maintained.	Botanical gardens and NARO Secretariat Entebbe	211103 Allowances (Inc. Casuals, Temporary)	534,897
- MoUs, contracts and SMTAs drafted, reviewed and signed and legal advisory rendered.	New consultancies on Legal and Other Issues for NARO in place	212101 Social Security Contributions	1,672,588
- NARO represented in courts of judicature, . in liaison with external legal counsel,	-	213001 Medical expenses (To employees)	300,000
	Functional NAROSEC fleet. - Enhanced, clean, safe and enabling workplace environment strengthened through maintenance of both research facilities,and equipment and payment for	213002 Incapacity, death benefits and funeral expenses	112,500
		213004 Gratuity Expenses	1,394,939
		221001 Advertising and Public Relations	354,243

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

- Legal advice and guidance to the NARO Governing Council and Management;	utilities, guarding services, cleaning services.	221002 Workshops and Seminars	328,330
- Assessment report of PARI levels of Compliance;	- Tendering completed. Contract signed with Des Consultants for a consultancy for Engineering and Designs.	221003 Staff Training	4,874
- Annual workshop for NARO Procurement Officers and committees	- In order to guide agricultural research in Uganda, NARO Governing Council and its three committees were facilitated to meet and also monitor research in the institutes. - Budget framework paper & targets for FY 2020/21 approved; - Strategic partnerships identified for additional funding. - Strategies identified for improved governance & management of research; increasing NARO visibility; mobilisation of resources; mitigating risks.	221006 Commissions and related charges	20,754
- NARO Procurement Plan;	-In order to facilitate funding agricultural research NARO budget committee was facilitated.	221007 Books, Periodicals & Newspapers	5,312
- report on Board of Survey for Disposal/ Evaluation of NARO Assets.	-	221008 Computer supplies and Information Technology (IT)	13,000
- Managing and maintaining fleet & office equipment;	-	221009 Welfare and Entertainment	196,919
- Managing utilities;	Financial and internal controls were strengthened through budget monitoring in the institute of	221011 Printing, Stationery, Photocopying and Binding	93,008
- Maintaining office space and infrastructure;	Mbarara,Rwebtaba,KaZARDI, Muzardi, NaFIRRI and NaCRRRI , ABI, NaLIRRI, Bulindi, NARL, NaFORRI and NaCORRI	221012 Small Office Equipment	8,066
- Managing cleaning services;	Nine months' financial reports produced	221016 IFMS Recurrent costs	91,771
- Availing staff transport	-	222001 Telecommunications	57,426
- Managing security	- Functional infrastructure at the secretariat, Safe, secure and clean office space furniture, ICTs, , transport. - A research and non research work force, facilitated and enumerated.	222002 Postage and Courier	1,400
- NARO Engineering services procured and facilitated.	Two new PARI Directors and appointed and performance contracts issued.	222003 Information and communications technology (ICT)	25,912
- NARO Governing Council meetings and other sub-committees activities facilitated;	- Staff facilitated to undertake/complete post graduate studies (PhD, MSc, Professional certifications) - 10 PHD staff finalized and graduated.	223004 Guard and Security services	67,811
- Coordination, lobbying and supervision engagements facilitated and conducted.	-	223005 Electricity	322,639
• Conduct Budget committee meeting		224001 Medical Supplies	102,759
• Prepare, Print and submit the NARO (BFP, MPS and NARO Annual Work Plan);		224004 Cleaning and Sanitation	125,408
• Support PARIs during the ARPM		224005 Uniforms, Beddings and Protective Gear	992
• Conduct NAROSEC ARPM		224006 Agricultural Supplies	464,084
• Conduct NARO Wide ARPM		226001 Insurances	2,311
• Participate in JASAR and other stakeholder engagements		227001 Travel inland	242,419
• C		227002 Travel abroad	9,104
- Top Management (TPM) meetings and other committees activities facilitate;		227004 Fuel, Lubricants and Oils	338,909
- Coordination, lobbying and supervision of research and development conducted;		228001 Maintenance - Civil	661,643
- Undertake and participate in engagement with stakeholders, collaborators and dev. partners.		228002 Maintenance - Vehicles	277,354
Research activities coordinated, managed and monitored		228003 Maintenance – Machinery, Equipment & Furniture	105,064
- Financial Management compliance status of 16 PARIs established on quarterly basis;		228004 Maintenance – Other	47,400
- Documenting NARO financial transactions into financial statements quarterly, half year and annual accounts achieved;		273102 Incapacity, death benefits and funeral expenses	11,870
- Internal and External audit exercise conducted.			
- NARO financial information prepared consolidate/ communicate/submitted (NARO financial year budget, Quarterly warranties; NARO wide budgets; Quarterly/Annual financial and supervision reports.			
- Budget monitored			
- NARO financial payments concluded.			
• Solid data, voice network and server room maintained;			

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

- Effective use of the acquired ICT resources;
  - Voice and data integration piloted.
  - ICT-IFMS technical training and sensitization of staff .
  - Enhanced services: website, IFMIS, MBD, and internet
- A vibrant, facilitated and well motivated work force enumerated  
Staff performance plans monitored and appraised
- Staff facilitated to undertake/complete post graduate studies (PhD, MSc, Professional certifications)
  - Students supported to carry out research;
  - Short term skills improvement programs undertaken;
  - Travel support for International engagements.
- Research activities, services and products promoted

### Reasons for Variation in performance

<b>Total</b>	<b>24,851,485</b>
Wage Recurrent	16,855,781
Non Wage Recurrent	7,995,704
AIA	0
<b>Total For SubProgramme</b>	<b>25,044,947</b>
Wage Recurrent	16,855,781
Non Wage Recurrent	8,189,166
AIA	0

### Recurrent Programmes

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

##### Outputs Provided

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

Fruit tree seedling and product value chains supported	six tomato line submitted to VRC for release.	<b>Item</b>	<b>Spent</b>
Research activities undertaken and monitored	- Application for 4 maize varieties (NAROMaize63, 64, EH71, EH73) and 6 vegetable varieties submitted to VRC and 3 sweetpotato and 2 candidate cassava reports prepared for submission.	211103 Allowances (Inc. Casuals, Temporary)	51,000
		224006 Agricultural Supplies	101,250
		227001 Travel inland	40,000
	- 10 acres established for planting seed of NARO BEAN 1,2 3 and 100,000 transplanted citrus seedlings.		
	NACRRI research guided and monitored in Kiige station, Kamuli district. Established research on course.		

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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>192,250</b>
		Wage Recurrent	0
		Non Wage Recurrent	192,250
		<i>AIA</i>	0
<b>Output: 02 Research extension interface promoted and strengthened</b>			
new and improved crop technologies, innovations, information and management practices (TIMPS) promoted	- Cassava mechanizaions promoted in Nakasongola, Kigumba, Serere. The 13 fall armyworm control pesticides earlier approved were promoted. Tomato grafting to control bacterial wilt and management of pest and disease in citrus and mango have been delivered. Seven (7) bean varietal (NAROBAN 1-7) innovations develivered to uptake pathways.  - Improved crop varieties (beans, soy, rice, maize) )demonstrated on station.	<b>Item</b>	<b>Spent</b>
		221002 Workshops and Seminars	73,800
		221011 Printing, Stationery, Photocopying and Binding	6,600
		227001 Travel inland	16,000
		<b>Total</b>	<b>96,400</b>
		Wage Recurrent	0
		Non Wage Recurrent	96,400
		<i>AIA</i>	0
<b>Output: 04 Agricultural research capacity strengthened</b>			

*Reasons for Variation in performance*

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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 assets and activity sites secure Governance, Management and Staff facilitated (Staff welfare Lunch and break tea provided for staff; Fuel and oil for vehicles and motorcycles procured; stationery)	- NACRRI infrastructure Safe, secure clean (offices, laboratory, and farm structures) at Namulonge and at Kiige, in Kamulii district.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary)	<b>Spent</b> 13,165
Fiduciary obligations facilitated	- NACRRI research agenda strengthened by facilitating the advisory committee.meeting & Quarterly review workshop	221001 Advertising and Public Relations	3,750
1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.	- Fiduciary obligations facilitated for the July-March 2020 period	221006 Commissions and related charges	7,500
2. Maintain effective ICT facilities; Subscription for internet paid;	- Human resources appropriately utilised and managed	221007 Books, Periodicals & Newspapers	750
3. Utilities paid (water utility, electricity, telephone).	- Institute human resources performance well managed and facilitated.	221008 Computer supplies and Information Technology (IT)	3,000
- Exhibitions participated	- Institutes physical facilities and assets appropriately utilised and maintained	221009 Welfare and Entertainment	4,350
- Staff & stakeholder meetings held	-- NACRRI technologies disseminated and people reached as NACRRI participated in agricultural exhibition events such as WFD in Bulindi, ZARDI and at NACORRI Farm Clinic in, Kituza Mukono district . - Promoted NACRRI's new and improved crop technologies (maize, rice, cassava, beans), innovations, information and management practices at the Source of the Nile Agricultural show and world food day. 50 schools benefited from knowledge, 5050 school teachers, 1000 farmers from around Uganda.	221011 Printing, Stationery, Photocopying and Binding	4,500
- Technologies disseminated and people reached.		221012 Small Office Equipment	1,125
		222001 Telecommunications	3,150
		223004 Guard and Security services	7,500
		223005 Electricity	48,000
		224004 Cleaning and Sanitation	4,500
		225001 Consultancy Services- Short term	18,750
		226001 Insurances	1,710
		227004 Fuel, Lubricants and Oils	24,750
		228001 Maintenance - Civil	22,500
		228002 Maintenance - Vehicles	26,153
		228003 Maintenance – Machinery, Equipment & Furniture	10,910

### Reasons for Variation in performance

<b>Total</b>	<b>206,063</b>
Wage Recurrent	0
Non Wage Recurrent	206,063
AIA	0
<b>Total For SubProgramme</b>	<b>494,713</b>
Wage Recurrent	0
Non Wage Recurrent	494,713
AIA	0

### Recurrent Programmes

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

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies



# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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
Improved fish seed and feed production and productivity - Operationalization of the hatchery, ponds and concrete tanks; - Commercialisation of fish feed production by NaFIRRI at ARDC; - Selective breeding programmes of Nile tilapia and the African catfish enhanced.	- Maintained fish hatchery and feed mil. Both repaired and functional to improve fish feed availability and enhance selective breeding programme for Nile tilapia and African catfish at Kajjansi - Operationalization of the hatchery, ponds and concrete tanks; - Commercialisation of fish feed production by NaFIRRI at ARDC; - Selective breeding programmes of Nile tilapia and the African catfish enhanced. NAFIRRI research agenda strengthened by facilitating the advisory committee and participating in external consultative review meetings NAFIRRI has maintained on station fish demonstration ponds, at Kajjansi, Wakiso district. And cage sites in lake Victoria (Source of the Nile cage site).	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221006 Commissions and related charges 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 223004 Guard and Security services 223005 Electricity 223006 Water 224001 Medical Supplies 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 23,400 7,500 2,250 6,150 4,409 10,500 7,500 183,200 33,023 5,320 4,500
Improved fish seed and feed production and productivity Functional aquaria, onstation ponds, cage sites, feed mills, offices, marine vessels and sites.			

### Reasons for Variation in performance

<b>Total</b>	<b>287,751</b>
Wage Recurrent	0
Non Wage Recurrent	287,751
AIA	0

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

- Participate in exhibitions and shows - Staff & stakeholder meetings held - Technologies disseminated and people reached.	- NAFIRRI fisheries technologies fish feed and fish seed distributed to stakeholders	<b>Item</b> 221001 Advertising and Public Relations 221002 Workshops and Seminars 221011 Printing, Stationery, Photocopying and Binding 224001 Medical Supplies	<b>Spent</b> 4,500 11,250 6,000 25,600
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### Reasons for Variation in performance

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

### Output: 04 Agricultural research capacity strengthened

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## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.	- NAFIRRI physical resources , managed and maintained (offices, laboratories, vehicles, ICTs) , enabling and fully functional..	<b>Item</b>	<b>Spent</b>
2. Maintain effective ICT facilities; Subscription for internet paid;	- NAFIRRI human resource (full time, contract and casual) strengthened, functional and facilitated work force.	211103 Allowances (Inc. Casuals, Temporary)	8,250
3. Utilities paid (water utility, electricity, telephone).		221001 Advertising and Public Relations	1,420
1. Staff allowances, wages, welfare Lunch and break tea provided for staff provided;	- Fisheries research agenda strengthened by a functional and facilitated advisory and contracts committees.	221006 Commissions and related charges	7,500
2. Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals	NAFIRRI technologies disseminated at two stakeholder campaign conducted; i) at the World Food Day (16/10/2019) at Hoima with > 500 people sensitized, (ii) World Fisheries Day (21/11/2019) with >150 people sensitized at Kiyindi Landing site.	221007 Books, Periodicals & Newspapers	750
Institute assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Institute visibility and operations enhanced	- Maintained NAFIRRI mobile online applications.	221009 Welfare and Entertainment	6,000
		223005 Electricity	6,750
		223006 Water	7,500
		224004 Cleaning and Sanitation	12,000
		224006 Agricultural Supplies	41,250
		225001 Consultancy Services- Short term	120,000
		226001 Insurances	1,560
		227001 Travel inland	21,000
		227004 Fuel, Lubricants and Oils	21,750
		228001 Maintenance - Civil	93,750
		228002 Maintenance - Vehicles	30,503
		228003 Maintenance – Machinery, Equipment & Furniture	43,933
		273102 Incapacity, death benefits and funeral expenses	1,779

### Reasons for Variation in performance

<b>Total</b>	<b>425,694</b>
Wage Recurrent	0
Non Wage Recurrent	425,694
AIA	0
<b>Total For SubProgramme</b>	<b>760,795</b>
Wage Recurrent	0
Non Wage Recurrent	760,795
AIA	0

### Recurrent Programmes

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

##### Outputs Provided

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

- Samples of priority tree species collected;	- Study concept finalized and data capture tools developed for the study. - a database for priority beneficial and medicinal tree species has been developed;	<b>Item</b>	<b>Spent</b>
- Genetic diversity and molecular variation determined;		211103 Allowances (Inc. Casuals, Temporary)	45,000
- Database of priority beneficial tree species developed;		221006 Commissions and related charges	3,000
- Market and value addition of priority tree species identified.		224006 Agricultural Supplies	117,000
		227001 Travel inland	25,000
		227004 Fuel, Lubricants and Oils	9,000

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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>199,000</b>
		Wage Recurrent	0
		Non Wage Recurrent	199,000
		AIA	0

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

- Participate in exhibitions and agricultural shows	- Forestry innovations were disseminated on radio one talk show, farm clinics and at World Food day celebrations at Bulindi, Hoima district.	<b>Item</b>	<b>Spent</b>
- Staff & stakeholder meetings held		221001 Advertising and Public Relations	9,625
- Technologies disseminated and people reached.		221002 Workshops and Seminars	7,313
		221007 Books, Periodicals & Newspapers	1,104
		221008 Computer supplies and Information Technology (IT)	7,125

### Reasons for Variation in performance

<b>Total</b>	<b>25,167</b>
Wage Recurrent	0
Non Wage Recurrent	25,167
AIA	0

### Output: 04 Agricultural research capacity strengthened

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## QUARTER 3: 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 assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals	- NAFORRI research agenda strengthened by facilitating a functional advisory committee . NAFORRI physical resources (offices, laboratories, vehicles, ICTs) safe, secure, clean, fully functional, managed and well maintained.	<b>Item</b>	<b>Spent</b>
1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.		211103 Allowances (Inc. Casuals, Temporary)	8,250
2. Maintain effective ICT facilities; Subscription for internet paid;		221001 Advertising and Public Relations	4,500
3. Utilities paid (water utility, electricity, telephone).		221002 Workshops and Seminars	7,500
		221003 Staff Training	5,250
		221006 Commissions and related charges	7,500
		221008 Computer supplies and Information Technology (IT)	3,000
		221011 Printing, Stationery, Photocopying and Binding	11,375
		222001 Telecommunications	1,500
		222003 Information and communications technology (ICT)	1,146
		223004 Guard and Security services	9,000
		223005 Electricity	37,088
		224004 Cleaning and Sanitation	10,500
		224006 Agricultural Supplies	32,440
		225001 Consultancy Services- Short term	32,375
		227001 Travel inland	20,775
		227004 Fuel, Lubricants and Oils	11,500
		228001 Maintenance - Civil	9,000
		228002 Maintenance - Vehicles	14,100
		228003 Maintenance – Machinery, Equipment & Furniture	40,500
		<b>Total</b>	<b>267,299</b>
		Wage Recurrent	0
		Non Wage Recurrent	267,299
		AIA	0
		<b>Total For SubProgramme</b>	<b>491,465</b>
		Wage Recurrent	0
		Non Wage Recurrent	491,465
		AIA	0

### Reasons for Variation in performance

#### Recurrent Programmes

#### Subprogram: 10 National Livestock Resources Research

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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
- Protocols to produce A. cinerea availed;	- A protocol to breed acrida cinerea has been developed.	<b>Item</b>	<b>Spent</b>
- Production models for small, medium and large scale producers developed;	- In the effort to develop A. cinerea based protein supplement Inclusions for ruminants and non-ruminants and the associated Protocols. The relevant Ingredients and supplies are still being assembled.	211103 Allowances (Inc. Casuals, Temporary)	8,000
- A. cinerea based protein supplement Inclusions for ruminants and non ruminants developed and availed.		222001 Telecommunications	1,500
		223004 Guard and Security services	3,000
		223005 Electricity	375
		224001 Medical Supplies	21,975
		224004 Cleaning and Sanitation	750
		224006 Agricultural Supplies	7,500
		227001 Travel inland	5,250
		227004 Fuel, Lubricants and Oils	4,920
		228002 Maintenance - Vehicles	1,125
		<b>Total</b>	<b>54,395</b>
		Wage Recurrent	0
		Non Wage Recurrent	54,395
		AIA	0

### Reasons for Variation in performance

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

NALIRRI new and improved livestock technologies, innovations, information and management practices (TIMPS) presented to stakeholders.	- NALIRRI new and improved livestock technologies disseminated and accessed during exhibitions i.e. the World Food day and Farm clinic in Kituza mukono. - 10 Pasture improvement platforms established in Moroto, Nabilatuk, and nakapiripirit, 4 community goat breeding network groups, DAFAN-Dairy Farmers Network, thirty (30) beef production farmer groups in Nakaseke, Luwero, Nakasongola, Masindi, Kiboga, Kyankwanzi, Mbararara, Kiruhura, Sembabule and Ingingiro.	<b>Item</b>	<b>Spent</b>
		221002 Workshops and Seminars	4,500
		221011 Printing, Stationery, Photocopying and Binding	150
		227001 Travel inland	2,400
		<b>Total</b>	<b>7,050</b>
		Wage Recurrent	0
		Non Wage Recurrent	7,050
		AIA	0

### Reasons for Variation in performance

### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
1. Staff allowances, wages, welfare Lunch and break tea provided for staff provided;	- NALIRRI physical and livestock resources (100 native and 75 improved breeding herd) secure, safe, cleaned, enhanced, and enabling workplace and research environment strengthened .	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary)	<b>Spent</b> 8,800
2. Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals	- NALIRRI research agenda has been strengthened by functional advisory committee and a research and non research work force	221001 Advertising and Public Relations	1,500
Institute assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals.	- Functional fleet maintained. - Enabling office and laboratory environment. with ICTs, water and electricity.	221003 Staff Training	5,250
1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.	-	221006 Commissions and related charges	4,500
2. Maintain effective ICT facilities; Subscription for internet paid;		221007 Books, Periodicals & Newspapers	180
3. Utilities paid (water utility, electricity, telephone).		221008 Computer supplies and Information Technology (IT)	3,000
- Exhibitions participated		221011 Printing, Stationery, Photocopying and Binding	4,500
- Staff & stakeholder meetings held		221012 Small Office Equipment	2,250
- Technologies disseminated and people reached.		222001 Telecommunications	375
		222003 Information and communications technology (ICT)	5,138
		223004 Guard and Security services	1,125
		223005 Electricity	3,000
		224004 Cleaning and Sanitation	3,000
		226001 Insurances	960
		227001 Travel inland	10,600
		227004 Fuel, Lubricants and Oils	10,500
		228001 Maintenance - Civil	4,125
		228002 Maintenance - Vehicles	6,053

### Reasons for Variation in performance

<b>Total</b>	<b>74,855</b>
Wage Recurrent	0
Non Wage Recurrent	74,855
AIA	0
<b>Total For SubProgramme</b>	<b>136,300</b>
Wage Recurrent	0
Non Wage Recurrent	136,300
AIA	0

### Recurrent Programmes

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

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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
Germ plasma for semi arid crops collected , characterised and conserved.	Four sorghum candidate lines submitted to VCR for variety release (2 hybrids, 2 OPVs)  ; 2 greengram lines recommended for DUS; 5 cowpea lines for DUS testing. - One production technology of Microdozing nitrogen nutrient fertilizer on sorghum and fingermillet being evaluated with farmers in Teso region and one production technology of intercropping (2:1, 2:2) patterns on sorghum and finger millet being evaluated with farmers in Teso, Lango, Karamoja and West Nile regions .	<b>Item</b> 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 8,250 4,500

### Reasons for Variation in performance

<b>Total</b>	<b>12,750</b>
Wage Recurrent	0
Non Wage Recurrent	12,750
AIA	0

### Output: 04 Agricultural research capacity strengthened

Institute assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals.	-	Item	Spent
1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.	- NASARRI research agenda strengthened by facilitating the advisory committees, Management committees and institute work force.	211103 Allowances (Inc. Casuals, Temporary)	8,250
2. Maintain effective ICT facilities; Subscription for internet paid;	- NASARRI physical resources (some offices, institute assets, transport equipment, fittings, , ) safe, secured, managed and fully functional.	221001 Advertising and Public Relations	3,750
3. Utilities paid (water utility, electricity, telephone).	- NASARRI technologies disseminated and accessed by farmers through Source of the Nile Agricultural show, farm clinics and world food day.	221006 Commissions and related charges	4,500
- Exhibitions participated;		221007 Books, Periodicals & Newspapers	750
- Staff & stakeholder meetings held;		221009 Welfare and Entertainment	672
- Technologies disseminated and people reached.		221011 Printing, Stationery, Photocopying and Binding	3,000
		222001 Telecommunications	3,000
		223004 Guard and Security services	4,500
		223005 Electricity	9,000
		224004 Cleaning and Sanitation	3,000
		226001 Insurances	960
		228002 Maintenance - Vehicles	3,618
		273102 Incapacity, death benefits and funeral expenses	2,250

### Reasons for Variation in performance

<b>Total</b>	<b>47,250</b>
Wage Recurrent	0
Non Wage Recurrent	47,250
AIA	0
<b>Total For SubProgramme</b>	<b>60,000</b>

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
		Wage Recurrent	0
		Non Wage Recurrent	60,000
		AIA	0

### Recurrent Programmes

#### Subprogram: 12 National Laboratories Research

##### Outputs Provided

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

		Item	Spent
- Formulation and optimization of nanosurface package;	1. Data on optimal and validated prototypes technical parameters	211103 Allowances (Inc. Casuals, Temporary)	18,750
- Validate and pilot optimised nanosurface packages;	2. Market attributes of AroNutro Instant Maize snack profiled	222001 Telecommunications	2,280
- Promote nanosurface packed foods. Priority commodities collected , characterised and conserved.	3. Experiments on beans and biopreservative extracts ongoing;	223005 Electricity	11,250
- Factors that influence infusion / impregnation kinetics of the plant extracts into the pre-cooked bean matrix determined and optimized;	4. Market analysis ongoing; Generation of pre-cooked beans prototypes and protocols ongoing	223006 Water	9,000
- Culinary and market parameters of bio-preserved pre-cooked beans optimized;	5. Data on Nanosurface package prototypes is ongoing	224006 Agricultural Supplies	51,000
- : Bio-preserved pre-cooked bean prod	6. Fabrication of prototype II of second generation NARO PAH-Safe smoking kiln (NAROFIK-3) is almost completed. 30% of the 2nd prototype of NARO PAH-Safe liquid smoke distiller fabricated	227001 Travel inland	25,575
	7. Partial information on economic viability of the NAROFIK-2 shows that the kiln model had a net return on investment of 0.25 compared to 0.01 of the traditional smoking technology	227004 Fuel, Lubricants and Oils	3,000
	8. Draft business plans for 5 smoked fish processing enterprises from Lakes Victoria, Kyoga and Albert	228003 Maintenance – Machinery, Equipment & Furniture	7,500
	9. Procurement of key fabrication materials initiated as construction of 2nd prototype of NAROFIK-3 D4 is completed. 30 bean varieties analysed for their nutritional composition.		

### Reasons for Variation in performance

<b>Total</b>	<b>128,355</b>
Wage Recurrent	0
Non Wage Recurrent	128,355
AIA	0

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



# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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
NARL and NARL TIMPs promoted	Construction and equipping seed bank is underway in Nakasongola. 95 % constructional works completed.	<b>Item</b> 221001 Advertising and Public Relations 221002 Workshops and Seminars 221011 Printing, Stationery, Photocopying and Binding	<b>Spent</b> 600 750 750
			<b>Total</b>
			<b>2,100</b>
			Wage Recurrent
			0
			Non Wage Recurrent
			2,100
			AIA
			0

### Reasons for Variation in performance

#### Output: 04 Agricultural research capacity strengthened

Institute assets and activity sites secure Governance committees, Management committees, Staff facilitated and Staff training (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained. 2. Maintain effective ICT facilities; Subscription for internet paid; 3. Utilities paid (water utility, electricity, telephone). - Exhibitions participated - Staff & stakeholder meetings held - Technologies disseminated and people reached.	- NARL research agenda strengthened by facilitating a functional management committee and NARL of work force motivated (40 scientist and 20 laborers) . - NARL physical resources (vehicles, fittings, offices laboratories, farm and field equipment) and assets safe, secured, clean and fully functional.  - NARL technologies demonstrated at two farm clinics, two events (WFD and Jinja agricultural show).	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221003 Staff Training 221006 Commissions and related charges 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 223004 Guard and Security services 223005 Electricity 224004 Cleaning and Sanitation 225001 Consultancy Services- Short term 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture	<b>Spent</b> 13,125 7,500 1,838 1,685 1,530 3,300 2,430 600 3,900 8,400 4,095 8,625 11,513 18,750 3,877 1,688
			<b>Total</b>
			<b>92,855</b>
			Wage Recurrent
			0
			Non Wage Recurrent
			92,855
			AIA
			0
			<b>Total For SubProgramme</b>
			<b>223,310</b>
			Wage Recurrent
			0
			Non Wage Recurrent
			223,310
			AIA
			0

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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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### Recurrent Programmes

#### Subprogram: 13 Abi ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

Priority crops for northwestern zone collected, characterised, conserved and demonstrated	- Eight (8) bucks being prepared for dissemination	Item	Spent
At least four food products and three livestock feed products developed from cassava and its by-products	- 14 lines evaluated for nutritional profiling	221001 Advertising and Public Relations	3,000
	- Three newly released varieties (Narosorg 1, 2 and 3) introduced and are under evaluation	221006 Commissions and related charges	6,525
	- 30 members of local seed business (LSB) comprising 6 extension staff, 6 community based facilitators and 18 committee members of LSB groups trained	222001 Telecommunications	600
		224006 Agricultural Supplies	49,500
	- 30 members of local seed business (LSB) comprising 6 extension staff, 6 community based facilitators and 18 committee members of LSB groups trained.	227001 Travel inland	57,000

#### Reasons for Variation in performance

<b>Total</b>	<b>116,625</b>
Wage Recurrent	0
Non Wage Recurrent	116,625
AIA	0

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

Abi ZARDI corporate image and new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted.	Key actors in the cassava value chain identified and information on production, marketing and processing being generated and synthesised. 340 cassava value chain actors (56% females and 44% males) profiled into 112 marketors (32%), 72 processors (21%) and 156 producers (57%)	Item	Spent
- Two functional cassava out-grower schemes, each with over 500 members, established and linked to baking and brewing industries;	300 (199 males (66%) and 101 females (34%)) cassava outgrowers identified of whom 20 (7 females and 13 males) are commercial scale individual producers (>20 acres under cassava)	221001 Advertising and Public Relations	2,250
- One nutrition platform established to inform development of cassava based products.		221002 Workshops and Seminars	15,750
		221008 Computer supplies and Information Technology (IT)	3,750
		221011 Printing, Stationery, Photocopying and Binding	1,500
	- Two functional cassava out-grower schemes supported; - One nutrition platform supported.		

#### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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>23,250</b>
		Wage Recurrent	0
		Non Wage Recurrent	23,250
		AIA	0
<b>Output: 04 Agricultural research capacity strengthened</b>			
Managing Abi ZARDI physical resources	Abi ZARDI physical resources.(vehicles, offices, farm and laboratories). Safe, secure, clean and fully managed and functional.	<b>Item</b>	<b>Spent</b>
Managing and facilitating Abi ZARDI operations		211103 Allowances (Inc. Casuals, Temporary)	6,750
Managing and facilitating Abi ZARDI Human resource		221002 Workshops and Seminars	900
Institute assets and activity sites secure	- Abi ZARDI research agenda strengthened by facilitating the advisory committee, Abi ZARDI work force facilitated, motivated and remunerated.	221008 Computer supplies and Information Technology (IT)	3,000
1. Exhibitions participated		221009 Welfare and Entertainment	3,000
2. Staff & stakeholder meetings held		222001 Telecommunications	600
3. Technologies disseminated and people reached	- Exhibited at the 2019 World Food Day celebrations at Bulindi ZARDI and participated at the celebration of 10-Year anniversary if Onduparaka Football Club.	223004 Guard and Security services	4,500
		223005 Electricity	1,500
		223006 Water	300
		224004 Cleaning and Sanitation	3,000
		226001 Insurances	300
		227001 Travel inland	12,899
		227004 Fuel, Lubricants and Oils	22,250
		228001 Maintenance - Civil	750
		228002 Maintenance - Vehicles	8,250
		228003 Maintenance – Machinery, Equipment & Furniture	1,275
		273102 Incapacity, death benefits and funeral expenses	1,500
		<b>Total</b>	<b>70,774</b>
		Wage Recurrent	0
		Non Wage Recurrent	70,774
		AIA	0
		<b>Total For SubProgramme</b>	<b>210,649</b>
		Wage Recurrent	0
		Non Wage Recurrent	210,649
		AIA	0

### Reasons for Variation in performance

#### Recurrent Programmes

#### Subprogram: 14 Bulindi ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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
<ul style="list-style-type: none"> <li>- Goat feedlot unit comprising of a house, fenced paddocks and feeding and watering in place;</li> <li>- A goat breeding unit established for raising mubende and boer goats;</li> <li>- A pasture improvement unit established for supplying planting materials to farmers.</li> </ul>	<ul style="list-style-type: none"> <li>- Completed the construction of two goat houses; feedlot and breeding goat houses ( Dimension: 5meters X 25 meters, Feed troughs, water trough fitted, Lockable)</li> <li>- 5 acres of demos for maize, soybean, millet and sorghum onstation established.</li> <li>- 39 student interns received and trained at the institute , 21 farmers accessed information and 1 farmer accessed the planter used to plant 14 acres of maize</li> <li>- One radio talkshow at Spce radio on promotion of vegetable production in Hoima conducted</li> <li>- Opened up 50 acres of maize seed (Longe 7H) fields for multiplication at Kigumba</li> <li>- 10 acres of beans and 5 acres of millet established onstation for seed multiplication</li> <li>- Onstation and Onfam demos for bean and millet varieties; seed of priority varieties disseminated 90 farmers from the project site ; 8 onfarm bean, and 1 millet demos established in the project site .</li> </ul>	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 224001 Medical Supplies 227001 Travel inland	<b>Spent</b> 30,000 41,250 29,760
Onfarm research activities monitored			

### Reasons for Variation in performance

<b>Total</b>	<b>101,010</b>
Wage Recurrent	0
Non Wage Recurrent	101,010
AIA	0

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

<ul style="list-style-type: none"> <li>- A baseline survey conducted and value chain actors characterized.</li> <li>- Stakeholders identified, mobilised and empowered.</li> <li>- Demonstrations and information Materials prepared and developed.</li> <li>- Public awareness of research outputs;</li> <li>- Exhibitions participated;</li> <li>- Staff &amp; stakeholder meetings held;</li> <li>- Technologies disseminated and people reached.</li> </ul>	1) Baseline survey in 8 districts of LACZ conducted. Data collection concluded. Data analysis on going. (2) Acquired pasture germ plasma and established mother gardens. (3) Conserved 2.2 tones of silage. (Napier and lablab).	<b>Item</b> 221001 Advertising and Public Relations	<b>Spent</b> 10,500
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### Reasons for Variation in performance

<b>Total</b>	<b>10,500</b>
Wage Recurrent	0
Non Wage Recurrent	10,500
AIA	0

### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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
Managing Bulindi ZARDI physical resource	- Bulindi ZARDI physical resources (vehicle, office farm livestock and other asset ) fully functional, enhanced, safe, secure and enabling workplace and research environment	<b>Item</b>	<b>Spent</b>
Institute assets and activity sites secure		211103 Allowances (Inc. Casuals, Temporary)	6,750
Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals		221002 Workshops and Seminars	37,500
Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals	- Bulindi research agenda for the Bunyoro sub region strengthened by facilitating a fully functional advisory committee and Institute work force.	221003 Staff Training	15,000
		221007 Books, Periodicals & Newspapers	1,050
		221009 Welfare and Entertainment	6,750
		221011 Printing, Stationery, Photocopying and Binding	3,750
		222001 Telecommunications	1,500
		222002 Postage and Courier	75
		223004 Guard and Security services	5,250
		223005 Electricity	24,000
		224004 Cleaning and Sanitation	6,000
		224005 Uniforms, Beddings and Protective Gear	8,250
		225001 Consultancy Services- Short term	11,250
		226001 Insurances	960
		227001 Travel inland	35,250
		227004 Fuel, Lubricants and Oils	20,250
		228001 Maintenance - Civil	41,250
		228002 Maintenance - Vehicles	27,750
		228003 Maintenance – Machinery, Equipment & Furniture	750
		228004 Maintenance – Other	465
		273102 Incapacity, death benefits and funeral expenses	750

### Reasons for Variation in performance

<b>Total</b>	<b>254,550</b>
Wage Recurrent	0
Non Wage Recurrent	254,550
AIA	0
<b>Total For SubProgramme</b>	<b>366,060</b>
Wage Recurrent	0
Non Wage Recurrent	366,060
AIA	0

### Recurrent Programmes

#### Subprogram: 15 Kachwekano ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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
New and improved livestock technologies, innovations, information and management practices (TIMPS) for the zone identified	<ul style="list-style-type: none"> <li>• 2 sorghum varieties submitted for DUS.</li> <li>• Fish ponds cleaned and fish numbers estimated within the pods</li> <li>• Goat grazing paddocks weeded, houses and fences repaired, goats treated for the control of diseases and endo- and ecto-parasites. 10 new kids weaned.</li> </ul>	<b>Item</b>	<b>Spent</b>
		223005 Electricity	4,125
		223006 Water	3,000
		224006 Agricultural Supplies	183,750
		227001 Travel inland	4,380
		227004 Fuel, Lubricants and Oils	3,005
<b>Total</b>			<b>198,260</b>
Wage Recurrent			0
Non Wage Recurrent			198,260
AIA			0

### Reasons for Variation in performance

Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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 assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained. 2. Maintain effective ICT facilities; Subscription for internet paid; 3. Utilities paid (water utility, electricity, telephone). - Exhibitions participated - Staff & stakeholder meetings held - Technologies disseminated and people reached.	Safe institute assets (offices, livestock and ponds) and research and experimental sites secure. - Kachwekano ZARDI research agenda for the southwestern zone strengthened by a functional advisory committees and research and non-research work force.. - Kachwekano ZARDI physical resources functional, safe and secure. - Office work space enabling workplace and research environment strengthened through maintenance of both research facilities and equipment and payment for utilities. - 3 field days conducted in Kabale, Kisoro and Rukiga districts and 100 farmers (67 women and 33 men) trained in best practices of seed potato harvesting handling and harvesting - 1 video documentary developed on best practices for seed potato harvesting, handling and storage. - Planting materials and animal breeds availed to 29 farmers (500 banana, .. - 1. 5 Planting materials and animal breeds availed to 29 farmers (500 banana, 500 fruit tree seedlings, 1,750,000 cassava cuttings, 250 bags of forages, 2000 Nile tilapia fish seed, and 32 piglets) 2. 4 Climate smart technologies demonstrated ( DT varieties, soil & water conservation & agroforestry) in 12 climate-smart model farms in Hoima. 3. 11 Production and value addition technologies ( maize, rice, banana, cassava, fish, dairy, piggery, apiculture, aquaculture) disseminated at farm clinics, WFD2019 and other community trainings 4. 37 crop varieties & animal structures demonstrated On-station ( 4 Maize, 4 beans, 4 soybean, 3 finger millet, 3 sorghum, 3 cassava, 3 Sweet potato, 3 Napier, 3 brachiaria, 3 livestock handling structures and 2 animal houses) established and/or maintained 5. Distributed potato seedlings to screen-house operators(20,942), farmers (8,710), ZARDIs (2,770), private companies 2,000 and 6,800 mini-tubers 6. Provided support to CoU Diocese in Kigezi in form of seed for screen house & training 7. The institute has continued to produce apple seedlings to supplement what is produced by private nursery operators 8. Training manual - apple growing & management developed 9. 2 Acres of fodder gardens have been established and maintained at KaZARDI	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221006 Commissions and related charges 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> 6,750 3,750 3,750 6,693 1,165 2,398 15,000 37,500 15,000 7,205 750 19,500 20,400 3,750 11,850 2,625

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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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### Reasons for Variation in performance

<b>Total</b>	<b>158,085</b>
Wage Recurrent	0
Non Wage Recurrent	158,085
AIA	0
<b>Total For SubProgramme</b>	<b>356,345</b>
Wage Recurrent	0
Non Wage Recurrent	356,345
AIA	0

### Recurrent Programmes

#### Subprogram: 16 Mukono ZARDI

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

Germ plasma for priority commodities collected, characterised and conserved.	Mukono ZARDI generated and promoted the following TIMPs: • 39,200 high quality fingerlings produced and distributed to 10 farmers, 8 of them males, 2 females. • 20000 fry still on site • Full sib inbred lines (Victoria 1506; Kyoga 1722; Nabugabo 2,021) lines in development. • Broodstock development; 185 Kyoga (35.53g); 285 Victoria (41.3g), 525 Nabugabo (48.65g). • 288 sex-reversed Tilapia males (41g average body weight) awaiting sexing for identification of NeoMales Indoor Wet-lab assembled, capacity to handle 4 treatments with 3 replicates each operationalized for sturdy of fish from larvae to fingerling stage.	Item	Spent
		221011 Printing, Stationery, Photocopying and Binding	3,000
		221012 Small Office Equipment	3,750
		222001 Telecommunications	4,500
		223005 Electricity	10,500
		224001 Medical Supplies	55,125
		224006 Agricultural Supplies	128,625
		227001 Travel inland	3,000
		227004 Fuel, Lubricants and Oils	3,000

### Reasons for Variation in performance

<b>Total</b>	<b>211,500</b>
Wage Recurrent	0
Non Wage Recurrent	211,500
AIA	0

#### Output: 04 Agricultural research capacity strengthened



# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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
Managing and facilitating Mukono ZARDI Human resource Institute assets and activity sites secure Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained. 2. Maintain effective ICT facilities; Subscription for internet paid; 3. Utilities paid (water utility, electricity, telephone).	- Mukono ZARDI research agenda for the lake Victoria crescent zone was strengthened by facilitating the fully functional advisory committee and the institute work force.  - Mukono ZARDI physical resources were maintained, safe and secure. - The institute has an enabling, safe and secure research environment.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221006 Commissions and related charges 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 223006 Water 224004 Cleaning and Sanitation 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture 273102 Incapacity, death benefits and funeral expenses	<b>Spent</b> 6,750 2,250 7,500 938 2,813 3,750 188 15,000 37,500 15,000 6,713 675 15,000 15,000 11,599 750 3,326

### Reasons for Variation in performance

<b>Total</b>	<b>144,750</b>
Wage Recurrent	0
Non Wage Recurrent	144,750
AIA	0
<b>Total For SubProgramme</b>	<b>356,250</b>
Wage Recurrent	0
Non Wage Recurrent	356,250
AIA	0

### Recurrent Programmes

#### Subprogram: 17 Ngetta ZARDI

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

Effective management practices for livestock parasite and disease control developed - Capacity of soil laboratory to effectively conduct soil analysis enhanced - Survival and field establishment of the shea tree seedlings generated from cuttings, tissue culture and seed enhanced	• Procurement on-going for the assorted chemicals to support soil testing - 750 sq.mtrs of black shade net, 50 kgs of potting bags and 2kgs of pure IBA procured. Procurement of autoclave is on-going. - Procurement of poultry production materials made and rehabilitation units	<b>Item</b> 224001 Medical Supplies 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles	<b>Spent</b> 65,800 100,450 2,180 3,000 3,000
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# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

Local poultry research enhanced	completed.	228003 Maintenance – Machinery, Equipment & Furniture	2,920
The newly released crop varieties adapted in the zone	- Adaptive trials established for groundnuts serenut 8R and 14R. Soybean 6N and 3N.		
Cost effective Integrated disease and pest management technology for citrus and mango developed	- Cassava fields maintained and 3 acres of land opened for next planting.		
Appropriate SLM technologies adapted			
The capacity of the laboratory for detection of plant pathogen enhanced	- Four trials on integrated disease management options.		
Fish farming technologies demonstrated			
Effective technologies for management of post harvest seed pests and diseases for QDS production developed	- Data on leaf spot severity collected and preliminary analysis revealed average field incidence of less than 5% for the two treatments (Prunning+ fungicide application + field sanitation, and bark horning+ prunning+ fungicide+ sanitation) when compared to the untreated controls where the incidence was 100% and severity of 5 on a scale of 1-5 (1=no disease and 5 =severity above 50%).		
Mid-Northern and northern Uganda research areas and priorities identified			

Ngetta ZARDI generated the following:

- One tonne of soyabean was sold at 5,000 per kilo and 2 acres prepared for the coming rains of April/May
- 785 kgs of maize produced and sold, 2 acres of land prepared for planting
- Procured forest soil for raising the seedlings, grafted 1,000 - citrus seedlings and 2,000 eucalyptus seedlings cloned

1. One solar hay drier for conservation of dairy forage feed resources validated. 2. One -(CGS on value addition of fruit pulp of shea submitted and funded) 3. Nine Enhancing yield using Rhizobium inoculant in new improved varieties of soybean and beans (5 sites) under trial. 4. Development and management of shea tree grafted seedlings-manual). 5. Information parks on Value addition for 8 priority crops in Northern Uganda compiled and awaiting peer reviews.. 6. 'Survey report produced .Maize and soybean were the most preferred commodities for intervention followed by cassava. Pest and diseases (Maize fall army worm and CBSD) management, access to seed (price and quality) and markets) topped community research agenda for intervention along the commodities prioritized.

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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>177,350</b>
		Wage Recurrent	0
		Non Wage Recurrent	177,350
		<i>AIA</i>	0

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

Stake holders made aware of the various agricultural technologies available at Ngetta ZARDI  
Enhanced corporate image, new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted

To bridge the gap between research and extension, NARO disseminated research outputs to farming communities in lango and Acholi through exhibitions and radio talks hows. Ngetta TIMPS for the northern and mid northern Uganda sub zones were promoted. - Two radio talk shows (Unity FM-Lira) conducted to disseminate information on citrus disease and maize fall army worm management, and on aflatoxin contamination of crops and livestock products. - Dissemination materials produced and distributed to visiting school teachers and World Food day celebrations.

Item	Spent
221001 Advertising and Public Relations	2,070
221007 Books, Periodicals & Newspapers	750
221008 Computer supplies and Information Technology (IT)	1,313

### Reasons for Variation in performance

<b>Total</b>	<b>4,133</b>
Wage Recurrent	0
Non Wage Recurrent	4,133
<i>AIA</i>	0

### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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 assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained. 2. Maintain effective ICT facilities; Subscription for internet paid; 3. Utilities paid (water utility, electricity, telephone). 1. Exhibitions participated 2. Staff & stakeholder meetings held 3. Technologies disseminated and people reached.	- Ngetta ZARDI research agenda for the northern and mid northern Uganda sub zones monitored and strengthened by facilitating the Functional advisory committee and institute work force. - Ngetta ZARDI physical resource (offices, farm buildings, transport equipment and specialized equipment) managed, safe, secure some fully functional.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221006 Commissions and related charges 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 222002 Postage and Courier 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 273102 Incapacity, death benefits and funeral expenses	<b>Spent</b> 6,750 6,750 2,775 6,750 1,500 375 18,000 43,500 21,000 7,398 960 15,000 15,000 2,150 7,500 1,500

### Reasons for Variation in performance

<b>Total</b>	<b>156,908</b>
Wage Recurrent	0
Non Wage Recurrent	156,908
AIA	0
<b>Total For SubProgramme</b>	<b>338,390</b>
Wage Recurrent	0
Non Wage Recurrent	338,390
AIA	0

### Recurrent Programmes

#### Subprogram: 18 Nabium ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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
Priority commodities collected , characterised and conserved. TIMPS for Brucellosis developed	1. 5 acres of land prepared for establishment of pastures (Napier, Cenchrus ciliaris, Brachiaria mulato) for seed multiplication for the farmers. 57 farmers and students (25 female, 32 male) trained on hay making and utilisation, pasture seed handling and packaging	<b>Item</b>	<b>Spent</b>
10 acres of ground nuts (sel 14), 10 acres of maize (MM3), 10 acres of sorghum in place	2. 16 Sahiwal and 36 Friesian cattle maintained on-station to produce breeding stock for farmers. 57 farmers and students (25 female, 32 male) trained on health management, breeding, milk production and handling	211103 Allowances (Inc. Casuals, Temporary)	23,625
	3. 32 Mubende goats maintained on-station to improve productivity amongst farmers; 1 buck availed to one farmer. 51 farmers and students (22 female, 29 male) trained on breeding, kid management and record keeping	221002 Workshops and Seminars	6,300
	4. 11 Cambrough piglets maintained on-station for improving pig production amongst farmers; 5 piglets availed to 2 farmers to improve productivity. 6 students and farmers (3 male, 3 female) trained on housing, feeding, breeding pigs.	221011 Printing, Stationery, Photocopying and Binding	10,500
	5. The growth performance of African catfish juveniles (initial average weight = 64.3 ± 0.2 g) under three feeding regimes evaluated. The weight gain in 100 days for three feeding frequencies was as follows: 235.7g if fed 2 times/day, 185.7 g if fed 3 times/day, 157.7 g if fed for once/day. The specific growth rate followed the same trend: 1.39% /day, 1.22% /day and 1.11% /day for the 2 times/ day, 3 times /day and 1 time feeding frequencies respectively.	222001 Telecommunications	3,750
	Seroprevalence determined from Amudat District using Rose bengal test, in 322 cattle (13.04% postive equivalent of 42/322), 328 goats (0.9% positive equivalent of 3/328), 300 sheep (1% positive equivalent of 3/300), 46 camels (4.3% positive equivalent of 2/46).	223004 Guard and Security services	12,000
		223005 Electricity	25,313
		224001 Medical Supplies	42,800
		224006 Agricultural Supplies	40,000
		227001 Travel inland	38,250
		227004 Fuel, Lubricants and Oils	8,625

### Reasons for Variation in performance

<b>Total</b>	<b>211,163</b>
Wage Recurrent	0
Non Wage Recurrent	211,163
AIA	0

Output: 02 Research extension interface promoted and strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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
40 seed production farmers identified and 4 farmer groups formed	1. 25 farmers trained in appropriate pond management techniques for African catfish	<b>Item</b>	<b>Spent</b>
40 seed production farmers trained on quality seed production, processing, storage and marketing	2. Four (04) sensitisation meetings (32 male, 28 female) about transmission, control of brucellosis between animals and humans held in Kotido and Karenga Districts	221001 Advertising and Public Relations	3,000
4 farmer groups monitored and backstopped;	3. Eight implementing farmer groups (60% female and 40% youth) established in 8 selected sub counties in of Kaabong, Kotido, Nakapiripirit and Nabilatuk. 182 farmers (122 women, 60 youth) trained on Integrated Natural Resource Management and agronomic practices of the five selected crops (sorghum, maize, cassava, millet, sweet potatoes), and trained conducted on groups dynamics and financial management.	221002 Workshops and Seminars	9,000
30 radio spot announcements, 10 TV adverts	4. Eight seed multiplication sites of 56 ha, for five crop enterprises (sorghum, maize, cassava, millet, sweet potatoes) selected in Kotido, Nakapiripirit and Moroto Districts		
strengthened seed systems and storage platforms	5. Seed production practices, processing, storage and post-handling and markets assessed among 178 youth and women farmers in Kotido, Kaabong and Nakapiripirit Districts. 178 farmer groups (108 women, 70 youth) sensitized on the SURE FS project.		

### Reasons for Variation in performance

<b>Total</b>	<b>12,000</b>
Wage Recurrent	0
Non Wage Recurrent	12,000
AIA	0

### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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 assets and activity sites secured Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained. 2. Maintain effective ICT facilities; Subscription for internet paid; 3. Utilities paid (water utility, electricity, telephone). 1. Exhibitions participated 2. Staff & stakeholder meetings held 3. Technologies disseminated and people reached.	- Functional Nabuin work place, clean, safe, secure and enabling environment for research (3 office blocks, one laboratory). - Nabuin ZARDI strengthened research agenda for the northeastern dry lands agro ecologies.  - Technology demonstrations for farmer learning during Jinja agriculture show attended. - Nabuin visibility enhanced as improved technologies are demonstrated at Bulindi in Hoima during World Food day.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221006 Commissions and related charges 221007 Books, Periodicals & Newspapers 221009 Welfare and Entertainment 222002 Postage and Courier 224004 Cleaning and Sanitation 224005 Uniforms, Beddings and Protective Gear 226001 Insurances 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture 273102 Incapacity, death benefits and funeral expenses	<b>Spent</b> 6,750 1,875 4,518 750 2,775 375 3,375 2,250 960 8,500 3,938 6,055 750 2,250

### Reasons for Variation in performance

<b>Total</b>	<b>45,120</b>
Wage Recurrent	0
Non Wage Recurrent	45,120
AIA	0
<b>Total For SubProgramme</b>	<b>268,283</b>
Wage Recurrent	0
Non Wage Recurrent	268,283
AIA	0

### Recurrent Programmes

#### Subprogram: 19 Mbarara ZARDI

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

Germ plasma for Priority commodity for southern range lands collected , characterised, conserved and demonstrated	Mbarara ZARDI generated the following TIMPS: • Package for sustainable soil fertility management /conservation developed. - The best two performing starter culture formulae (1 for ghee and 1 for youghurt) identified for enhancing traditional ghee production and marketability in SW Uganda - to support the ghee cottage industry in the zone. - 2 Clay based anti-aflatoxin formulae identified for pre-treatment of maize bran based feeds.	Item	Spent
		221011 Printing, Stationery, Photocopying and Binding	1,800
		222001 Telecommunications	1,200
		223004 Guard and Security services	13,500
		223006 Water	6,000
		224001 Medical Supplies	110,250
		224006 Agricultural Supplies	73,500
		227001 Travel inland	9,750
		227004 Fuel, Lubricants and Oils	4,500





# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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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### Reasons for Variation in performance

<b>Total</b>	<b>136,750</b>
Wage Recurrent	0
Non Wage Recurrent	136,750
AIA	0
<b>Total For SubProgramme</b>	<b>357,250</b>
Wage Recurrent	0
Non Wage Recurrent	357,250
AIA	0

### Recurrent Programmes

#### Subprogram: 20 Buginyaya ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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
Germplasm for Priority commodity for eastern lowlands and highlands collected, characterized, conserved and demonstrated	(1) - Produced 3 training manuals (2) Validated Nerica 4 and 6 varieties for up take pathways. (3) - Rehabilitation of 10 breeding and nursery ponds in Mbale completed. (4)- 6 pasture production fields established in Bukwo,Kapchorwa,Kween, Bulambuli and Sironko districts 5) 5 QPM (Quality Protein Maize) hybrids with highland adaptability ascertained. 5) 2.5 tons of beans foundation seed produced (6) Maintained the apple orchards and carried out training of the plants. (7) More 7 ha of assorted tree species planted at Buginyanya and Bulegeni (8) Maintained the 5 ha of Murlbury trees in collaboration with MoSTI for sericulture production. (9) Established and maintained 0.5 ha of seed plots which is at flowering stage. (10) 100 bags of sweet potato vines distributed to Swisscontact farmers in Mayuge. 120 bags of cassava distributed to farmers in Iganga, Jinja and Luuka. 11) 0.2 Ha of Chloris gayana mantained and seed ready for harvesting at Bulegeni satelite station 12) 76 Farmers (68 female and 8 male) from Nabugimbi Yetana Women's group in Bulambuli district trained on seed management. 13) Six pasture production fields established in Bukwo,Kapchorwa,Kween, Bulambuli and Sironko districts 14) 32 field pea germplasm were planted for characterisation. Materials are being harvested and full information for next quarter 15) 5 farmer groups identified and worked with for both characterisation and seed increament 16) 12 wheat lines selected at AYT and being advanced to NPT 17) Use of rooted apical cuttings has been recommended for uptake by potato farmers; and preliminary information on management of Philaris minor generated 18) 5 LSBs were supported during the quarter through trainings, field monitoring, farm clinic and marketing of their seeds; one MSIP was also supported. 19) a total of 4 technologies and management practices delivered to uptake pathways	<b>Item</b> 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 223004 Guard and Security services 223005 Electricity 223006 Water 224001 Medical Supplies 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles	<b>Spent</b> 3,000 3,000 8,250 6,000 3,000 55,125 128,625 3,375 3,000 3,000

### Reasons for Variation in performance

<b>Total</b>	<b>216,375</b>
Wage Recurrent	0
Non Wage Recurrent	216,375



# Vote:142

 National Agricultural Research Organisation

## QUARTER 3: 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>
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*Outputs Provided*

**Output: 01 Generation of agricultural technologies**

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

	Item	Spent
- Information on station apple performance evaluation trial documented	221006 Commissions and related charges	3,750
- Baseline information on potato and bean groups generated.	221011 Printing, Stationery, Photocopying and Binding	3,600
- Brochures, left made for exhibitions	223004 Guard and Security services	15,000
Existing potato and bean varieties adapted to the project area catalogued and defined.	223005 Electricity	26,250
- Foundation bean and potato seed production technology is disseminated	223006 Water	15,000
- On-station and farm trials information generated on Catfish propagation, productivity and survival.	224001 Medical Supplies	50,460
- On-station and farm trials information generated on Catfish propagation, productivity and survival.	224004 Cleaning and Sanitation	3,750
- On-station and farm trials information generated	224006 Agricultural Supplies	120,783
- Improved capacity of quality coffee seedling production facilities and supply at Rwebitaba ZARDI and Seven (7) community-based seedling systems	227001 Travel inland	17,350
- 40 nursery operators trained on germplasm improvement technologies for coffee in the zone	227004 Fuel, Lubricants and Oils	17,000
- Generating information improved pasture trials on farm & on station.	228002 Maintenance - Vehicles	18,750
- Quality pasture seed produced & pasture samples analysed and demonstrated.		
- Quality seed bed prepared for pure pasture seed produced		
- Pasture equipment and tools demonstrated.		
- Generating information from on farm and onstation trials on bee colony and queen development in the Zone.		
- Maintenance of Apiaries for trainings on queen rearing on station and on farm.		
- Generating information on farm & onstation trials on colonies		
- Genomic Characterization of Xylaria Pathogen infecting tea in Uganda.		
- 100 tea accessions profiled biochemically & later documented		
- 100 tea accessions profiled biochemically & later documented.		
- On farm trials information generated on growth and y		
- information on agronomic performance of 14 matooke varieties generated.		
- Information on suitable decapitation heights in banana generated.		
- Suitable pasture legumes for intercropping in bananas determined.		
Water used paid.		
- 100,000 banana plantlets		
- 7 coffee nurseries maintained		
- 25 coffee mothergardens maintained		
- 60 participants trained in coffee plantation management and propagation techniques		
- 40 coffee nursery operators trained on germplasm improvement technologies coffee in the zone		
- 11. 25,000 plantlets produced and availed to uptake pathway		
12. 1000,000 seedlings raised and made accessible to farmers		
13. Maintenance of on-station and community-based coffee nurseries		
14. 40 coffee nursery operators trained on germplasm improvement technologies coffee in the zone		
15. Improved capacity of quality coffee seedling production facilities and supply at Rwebitaba ZARDI and Seven (7) community-based seedling systems		
16. 7 coffee nurseries maintained		
17. Agro-inputs (fertilizer,media, seedlings seedlings and cuttings		
18. 25 coffee mother gardens maintained		
19. Acquire farm tools, equipment and other field supplies		
20. 60 participants trained in coffee plantation management and propagation techniques		
- 3 maintained acres of Chloris gayana planted on station. - Maintained 3 acres with maize for silage.		
1. Information on efficacy of different management techniques for pests generated		
2. Sequencing of Xylaria DNA		
3. 20 tea accessions profiled biochemically		
4. Growth & yield performance of tea after fertilizer application. Data collected & Analyzed		
5. Information on demand and availability of speciality tea determined		
6. labour for speciality tea maintenance in on-station in the nursery		
7. Genetic diversity of on station & on farm tea clones		
8. information on agronomic performance of 14 matooke varieties generated		
9. Information on suitable decapitation heights in banana generated		
10. Suitable pasture legumes for intercropping in bananas determined		

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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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### Reasons for Variation in performance

	<b>Total</b>	<b>291,693</b>
	Wage Recurrent	0
	Non Wage Recurrent	291,693
	AIA	0

### Output: 04 Agricultural research capacity strengthened

	Item	Spent
- Effective, facilitated and motivated human resources.	211103 Allowances (Inc. Casuals, Temporary)	6,750
- Institute property and assets secure Rwebitaba ZARDI corporate image and new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted	221001 Advertising and Public Relations	1,125
- Fleet, machinery & office equipment managed;	221006 Commissions and related charges	3,188
- Utilities (telephone, water, electricity) managed;	221007 Books, Periodicals & Newspapers	1,125
- Institute space and infrastructure (office, laboratory, residence, farm and field) managed;	221009 Welfare and Entertainment	2,550
- Cleaning services managed;	221011 Printing, Stationery, Photocopying and Binding	2,250
- Availing staff transport	222001 Telecommunications	1,125
- Rwebitaba physical resources (office and farm, laboratory, staff residence) managed and fully functional, clean, safe and secure.	223004 Guard and Security services	7,875
- Rwebitaba ZARDI technologies disseminated to stakeholders Exhibition at Jinja show and world food & other regional shows. - Capacity of 4 groups (40 farmers )in Kyegegwa, Kabarole, Kyenjojo and kamwenge have been strengthend in bean and potato seed production.	223005 Electricity	6,000
- Rwebitaba physical resources (office and farm, laboratory, staff residence) managed and fully functional, clean, safe and secure.	223006 Water	1,500
	224004 Cleaning and Sanitation	3,165
	224005 Uniforms, Beddings and Protective Gear	1,500
	226001 Insurances	398
	227001 Travel inland	5,625
	227004 Fuel, Lubricants and Oils	4,500
	228001 Maintenance - Civil	3,000
	228002 Maintenance - Vehicles	3,075
	273102 Incapacity, death benefits and funeral expenses	1,500

### Reasons for Variation in performance

	<b>Total</b>	<b>56,250</b>
	Wage Recurrent	0
	Non Wage Recurrent	56,250
	AIA	0
	<b>Total For SubProgramme</b>	<b>347,943</b>
	Wage Recurrent	0
	Non Wage Recurrent	347,943
	AIA	0

### Recurrent Programmes

#### Subprogram: 26 NARO Internal Audit

#### Outputs Provided

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
<b>Output: 03 Internal Audit</b>			
Status reports on reasonable assurance of financial statements, enterprise risk , value-added services, Investigation reports, monitoring function, Governance, risk and control, compliance with applicable laws, rules and regulations, procurement and ICTs	<ul style="list-style-type: none"> <li>• One report on Internal Audit value added services to management and the organization as a whole produced</li> <li>• One report on Governance, risk and control produced</li> <li>• One reports on compliance with applicable laws, rules and regulations produced</li> <li>• One report on implementation monitoring function produced</li> <li>• One report on human resource management produced</li> <li>• One reports on value for money in research programs produced</li> <li>• One report on off budget projects audit produced</li> <li>• Two review routine meetings and report on Risks and mitigation controls at 4 PARI's held</li> <li>• Two Audit staff Re-tooled on Risk management and reporting</li> <li>• One Review report on Risks and mitigation controls at PARI's produced</li> <li>One report- on Investigation produced. - Two reports on Governance, risk and control produced - Two reports on compliance with applicable laws, rules and regulations produced - Minutes &amp; report on the functional monitoring and evaluation plus follow up of audit recommendations. - One report on budget performance produced - One report on midyear internal audit performance produced. - One report on the efficiency and effectiveness of procurement controls produced. - One reports on value for money in research programs produced. - Four review routine meetings and report on Risks and mitigation controls at 4 PARI's held. - One audit staff Re-tooled on Risk management and reporting .</li> </ul>	<b>Item</b> 221002 Workshops and Seminars 221003 Staff Training 227001 Travel inland	<b>Spent</b> 14,849 1,400 71,911

### Reasons for Variation in performance

<b>Total</b>	<b>88,160</b>
Wage Recurrent	0
Non Wage Recurrent	88,160
AIA	0
<b>Total For SubProgramme</b>	<b>88,160</b>
Wage Recurrent	0
Non Wage Recurrent	88,160
AIA	0





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## QUARTER 3: 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 assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained. 2. Maintain effective ICT facilities; Subscription for internet paid; 3. Utilities paid (water utility, electricity, telephone). 1. Exhibitions attended; 2. Staff & stakeholder meetings held; 3. Technologies disseminated and people reached.	- NACORI physical resources and infrastructure functional, clean, safe and secure. - Fully functional advisory and contracts committees. - NACORI work force of 43 facilitated. - - 1000 coffee and cocoa farmers accessing NaCORI technologies during Daily Monitor farm clinic in Kituza.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221006 Commissions and related charges 221007 Books, Periodicals & Newspapers 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 222002 Postage and Courier 223004 Guard and Security services 223005 Electricity 224004 Cleaning and Sanitation 225001 Consultancy Services- Short term 226001 Insurances 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture 273102 Incapacity, death benefits and funeral expenses	<b>Spent</b> 8,250 1,875 2,700 1,800 3,413 2,250 2,250 750 7,125 9,000 3,000 42,690 1,500 2,625 4,500 1,500 1,913

### Reasons for Variation in performance

<b>Total</b>	<b>97,140</b>
Wage Recurrent	0
Non Wage Recurrent	97,140
AIA	0
<b>Total For SubProgramme</b>	<b>134,931</b>
Wage Recurrent	0
Non Wage Recurrent	134,931
AIA	0

### Development Projects

#### Project: 0382 Support for NARO

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

1. Nutrient enhanced maize product commercialized; 2. Maize based product industrial platform and products based enterprises and maize supply chain; 3. Efficiency and timeliness of aflatoxin detection and monitoring; 4. Linked circuit; 5. Capacities enhanPeriodic status and	At NARL, 1. A nutrient profile of 5 snack formulations. 2. Analytical and processing skills in instant Maize products. 3. Optimal processing conditions and snack properties. 4. Instant Maize snack package developed.- At NAOSEC, RMI platform specifications developed and fine tuned.At NALIRRI, (1) Identified 14	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221002 Workshops and Seminars 223001 Property Expenses 223005 Electricity 224001 Medical Supplies 224006 Agricultural Supplies	<b>Spent</b> 717,738 816,388 297,225 182,345 663,718 1,105,404
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## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

performance reports, briefs, bulletins and news letters	lablab lines with high crude protein content ( above 24%) and limited levels of anti-nutritional compounds selected for DUS and multi-locational trials. (2)	227001 Travel inland	482,654
Follow-on Project, NARO MTP, Tools, methodologies RMIS developed	Information on lablab research for development disseminated to over 50 decision makers .- In Commercialisation of Nile perch oil products at NAFIRRI, Four protocepts of low-cost high value Nile perch oil products developed.In developing technologies for control of red gum Lerp Psyllid and bronze bug in eucalyptus plantations	227004 Fuel, Lubricants and Oils	223,072
Performance of Beneficiaries and technologies documented	1) 920 seedlings raised and maintained		
NARO PMER capacity Enhanced	2) 3,300 Bronze bug eggs produced for rearing C.nockae egg parasitoid 2600		
Membership to Uganda Eval. A1.	Red gum lerp psyllids trapped and sexed for rearing P.bliteus bio-agents		
Climate-smart Lablab and brachiaria varieties with Information and agronomic packages.	3) 4,650 C.nockae and 2,000 P.bliteus released agaisnt bronzebug and Red Lerp Psyllid in the field; field performance of C.nockae and P.bliteus bio-agents in the field established		
2. Dairy and poultry feed formulations	4) Sampling for resistant Eucalyptus species/hybrids done in Eastern and Western AEZs. Leaf samples from susceptibe and resiatant Eucalyptus trees collected for genetic identification.		
3. Historical phenotypic data and NIRS calibrations	5) MSc student of Entomology completed course work and her research proposal approved; and Data collection conducted in 2 AEZs i.e. Eastern and L. Victoria Crescent.		
4. Institutional and research capacity.1.	6) Planting material for 2 anti-diabetic woody species acquired and seedlings raised at Kifu nursery. 1 acre of land cleared in KRF in preparation for planting 200 seedlings of the 2 species of the selected anti-diabetic woody species. Plant parts of selected anti-diabetic woody species collected from the districts of Apac, Gulu, Mitooma, Kasese, Ngora, Katakwi, Kanungu, Bundibugyo and Ntoroko. 283 plant samples air dried at room temperature. 107 samples ground into fine powder. - Data compiled and application for release submitted on the 6 potato varieties.		
Low-cost high value Nile perch oil products	- At Kachwekano 15,000 plantlets generated from lab for planting. - Testing has reached sub-culture level six. No differences observed yet .- At Buginyanya		
2. Linkages between fish processors and researchers	(1) 10 QPM/MLN resistant single cross hybrids identified and ready forevaluation at AYT.		
3. Marketing strategies for Nile perch oil,			
4. Publications and information dissemination (scientific manuscripts, policy briefs, and posters): Technologies for control of red gum Lerp Psyllid and bronze bug in eucalyptus plantations1.			
High yielding, early maturing and late blight resistant potato varieties;			
2. Propagation system for rapid multiplication of elite potato clones;			
3. Potato genotypes with heat and drought tolerance.- Highland maize varieties improved for resistance to MLN/common diseases;			
- Bio-fortified maize varieties for highland areas advanced and released;			
- Sustainable maize intensification technologies adopted;			
- Highland maize seed.Information and technologies of stingless beekeeping generated, packaged and disseminated. (socio-economics, stingless bee species, stingless bee products, bee hive types designed, Performance of stingless bee species)1. Yeast starter culture and protocols.			
2. Method for extraction of cocoa pulp from fresh cocoa beans;			
3. Innovative method for cocoa fermentation and utility model;			
4. 2 value added products from cocoa pulp;			
5. Cocoa manuals developed and demos.1) Genetic diversity of tea germplasm compared and determined;			
2) Biochemical characteristics and cup quality of selected clones compared and determined;			
3) Production of specialty teas (green, white, silver, purple, yellow) enhanced;			
4) Dissemination1. High yielding, resilient and low-tannin coloured			

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## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

sorghum varieties developed and promoted in food and feed value chains;	(2) 5 QPM (Quality Protein Maize) hybrids with highland adaptability ascertained. One MLN PYT at grain hardening stage at Ikulwe, Mayuge..
2. Training packages, modules and approaches for effective sorghum production technologies developed and disseminated.1. Current status of farmer's knowledge, perceptions and practices on the production of management of Tomato and passion fruit fields understood.	In domestication of stingless bees in Uganda at NALIRRI,
2. Improved Tomato lines with multiple resistances to major diseases in Uganda	- 1) SBH-1 and SBH-7 bee hive prototypes evaluated for suitability in domesticating stingless bees.
3. Improved Passion fruit1. Screen house; 2. Germplasm characterized; 3. Seed multiplication on station.1. Occurrence/infestation levels mapped	- 2) Sunction and drain-based methods evaluated for harvesting stingless bee honey, pollen and propolis. Preliminary data is indicative that sunction-based method is better than drain-based method in harvesting stingless bee products.
2. Communities integrated in biological control	- 3) Three stingless bee species including M. bocandei, M. ferrugenea and P. hilderbrandtii have been evaluated at Nakyesasa. Preliminary data is suggestive that the colonies have stabilised signaling the potential for domestication.
3. Biological control agents and Socio-economic impacts established	- 4) Five dissemination materials including 2 banners, 3 brochures and 1 manuscript developed and disseminated Yeast starter culture and protocols developed.
4. Extent of spread reduced to manageable levels	- One 60 kg capacity prototype with a hand crank for mixing cocoa has potential to improve fermentation by 95% in 4 days.
5. Economic functionality of the infested water bStrategic Fisheries plans,developments shared and effectively reviewed and framework implementation plans generated.Clientele oriented aquaculture development plans implemented.1. Two sorghum varieties with farmer preferred attributes released;	- Second prototype (rotatoing cylindrical cocoa incubator) under development, and expected to achieve the 95% fermentation percentage in 4 days.At Rwebitaba,
2. 9 farmer groups empowered	- (1) Partial analysis of the genetic diversity of on station & on farm tea clones was conducted.
3. Agronomic and soil management packages	(2) Established and maintained an on station nursery of 20,000 clones of specialty tea.
4. Two Publications in scientific journals1. Milk based products good for clinical improvement of exacerbated cases of stomach ulcers and low body anti-oxidant capacities; recommendable for babies, breast feeding/pregnant mothers	(3) Survey carried in Bushenyi, and kanungu factories, no factory found producing specialty tea.
2. Develop products using targeted isotope labelled analyAt least, 2,000kgs of maize, 1,000kgs of Beans, 1,000bags of Cassava and 5,000 assorted horticultural seedlings produced. NARO tick vaccine commercialisedIncreased fish production in cages and ponds. Information dissemination using on-station demonstrations like the live fish aquarium, crocodile pen fish museum and fish ponds.1. Low-cost diagnostic kit (prototype) that detects TILV in the field.	(4) 20 samples of tea clones collected and taken to NaCRRRI for DNA analysis. In development and selection of high yielding sorghum varieties tolerant to multiple stresses in Uganda. and low tannin
2. Geospatial map and risk factors indicating.	
3. Socio-economic impact.	
4. Capacity of actors strengthened.Fruit tree seedling and product value chains supportedRice technologies developed, disseminated and accessedDiversity of algae species that are efficient in bio filtration determined;	

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## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

<p>Efficacy of different algae strains in effluent bio-filtration; Protocol for propagating the most suitable strains; Potential of identified algae for biofuel production Tree seedling platform supported</p>	<p>1) DUS for six selected lines conducted and NPT Data collected</p> <p>2) Two best lines submitted for release Six varieties submitted for release.- National Fisheries research and development agenda strengthened by facilitating two advisory committee meeting.- Two sorghum varieties with farmer preferred attributes released. - A FURTHER Two sorghum varieties with low tannin levels submitted to VRC..In making milk fortification to improve micronutrient status and alleviate common health problems, Information on efficacy of different pharmaceutical compounds against clinical conditions of stomach ulcers, cancer and diabetic conditions is being documented, and Safe and stable milk based nutraceutical products with anti-ulcer, diabetes and cancer properties are developed. So far: 1) Anti-oxidation power of seven pharmaceutical plant extracts has been determined to aid in identification of best extract for fortifying with milk.</p> <p>2). Seven plant extracts have been profiled for pharmaceutical compounds notably phenolics and flavonoids to aid in determination of appropriate combinations for fortifying with milk.</p> <p>3) One milk product fortified with plant-based pharmaceutical compounds against cancer constituted and nutritionally profiled.. 2000 assorted horticultural seedlings maintained. - 5,000 assorted horticultural seedlings distributed. - 300 bags of Cassava distributed to farmers- At NALIRRI, At Efficacy of four candidate anti-tick vaccine molecules against brown ear tick, blue tick and bont legged tick validated on going through on-station clinical trial at Nakyesasa. - One Ph.D student on vaccinomics supported.(i) Participated in two farm clinics.. (ii) Participated in several information dissemination platforms including: The Agricultural show, the World Food Day at Bulindi ZARDI (16th October 2019), 2nd Fish festival at Jinja (1st December 2019), World Fisheries day at Kiyindi landing site (21st November 2019), A talk show held on NTV to raise awareness about fisheries, 13 bibliographic records of grey fisheries</p>
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## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

literature prepared for inclusion in Aquatic Sciences and Fisheries information system (ASFA database), transmitted electronic fisheries information to and data to databases, outreach and stakeholders in need of information, Fisheries information disseminated to over 2000 school children. At NAFIRRI, in developing /adopting validate and evaluate a diagnostic kit for emerging aquatic diseases pathogens; And 2) Conduct epidemiological surveillance studies and bio-control assays for emerging aquatic diseases in two AEZs;

1) Efficacy of plant N extract as a growth promotor, immunostimulant and prophylaxis against pathogenic *Aeromonas hydrophila* in Nile tilapia. Provisional results showed that Fish in 0.1% treatment had the highest specific growth rate at  $0.85 \pm 0.1\%$  per day followed by 0% and lowest in 0.5% at  $0.64 \pm 0.16\%$  per day. Survival rate was equal in all treatments at 94.4%. Mean weight gain was highest in  $0.88 \pm 0.12$  g in 0.1% treatment and lowest in 0.5% treatment at  $0.65 \pm 0.14$  g. The fish in all treatments were in good condition factor.

(2) Pocket Kit for Nucleic Acid Co-prep Kit and the TiLV reagent Set for 500 samples procured;

(3) Occurrence of Tilapia Lake Virus (TiLV) on 40 fish farms in the Central and Eastern AEZs established. Results indicated 18 farms tested negative for TiLV, with parasite prevalence as follows: PARASITE Prevalence (%)  
 NUMBER OF CASES  
 Trichodina sp. 26.2  
 Myxobolus sp. 152  
 Clinostomum sp. 7.93  
 Dactylogyrus sp. 46  
 Neascus sp. 4.48  
 84  
 10.86  
 63  
 Acanthocentris sp. 1.9  
 11 ( from 582 fish samples examined)

- Procurement on-going..
- At NAROSEC, Contract for supply of tissue culture laboratory awarded to service provider in December 2019- , At Buginyanya, Demo on best performing NERICA upland rice cultivars concluded.
- NERICA 4 and 6 varieties suitable for harvest at 75 & 90 days after emergence, respectively under low rainfall (630 mm). Article published in International Journal of plant & Soil Science- in coupling dairy circular systems with surface fish production through utilization of Algal

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## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

based feeds :

1) Identified and nutritionally characterised two strains of micro-algae including *Spirulina platensis* & *Spirulina lonar* as potential low-cost and high value protein sources in dairy and fish feeds. 2) Designed and constructed one race way pond for massive production of micro-algae at Nakyesasa.- Procurement process still on going.  
- Contract for supply of Tissue culture laboratory awarded to service provider in December

### Reasons for Variation in performance

<b>Total</b>	<b>4,488,544</b>
GoU Development	4,488,544
External Financing	0
AIA	0

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

	<b>Item</b>	<b>Spent</b>
1. Factors influencing adoption of technologies	- In characterizing the farms, typologies , farmers and other key actors around the PARIs:	211103 Allowances (Inc. Casuals, Temporary) 400
2. Factors that affect farmers' ability to learn		221001 Advertising and Public Relations 430,578
3. Farm typologies and characteristics of adopters and non-adopters	1) Identified and supported a master's student.	221002 Workshops and Seminars 633,935
4. Model to enhance the efficiency of the domino effect		221007 Books, Periodicals & Newspapers 26,080
5. Capacity of farmer developed1. 2nd generation NARO PAH-Safe technologies adapted	2) Draft Tools for characterizing the farms, typologies s, farmers and other key actors around the institutes were developed but not pre-tested.	221008 Computer supplies and Information Technology (IT) 97,324
2. Information on the acceptability of smoked fish processed		221011 Printing, Stationery, Photocopying and Binding 242,188
3. Fish Enterprises engaged in processing/marketing of smoked fish product	3 ) Online data collection tool developed, 21 enumerators from different institutes were trained in real time data collection application	222001 Telecommunications 495
4. Fish entrepreneurs with knowledge on processing and marketingCorporate image enhanced- Knowledge and informations products produced and distributed;	• questionnaire for the quantitative survey developed	222003 Information and communications technology (ICT) 31,992
- Patents and Patentable information produced and distributed;		227001 Travel inland 224,597
- Corporate, Scientific, Media and Extension information products produced and distributed.	Online mobile Quantitative data collection on going from communities sorruounding the institute with in 30 kms. Communities with in 10 kms and 20 kms have been covered- In out-scaling NARO Polycyclic Aromatic Hydrocarbon Safe Smoking Technologies for increased market competitiveness of Fish value chain actors,	227004 Fuel, Lubricants and Oils 675
	- Fabrication of prototype II of second generation NARO PAH-Safe smoking kiln (NAROFIK-3) is almost completed	
	- 30% of the 2nd prototype of NARO	

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## QUARTER 3: Cumulative Outputs and Expenditure by End of Quarter

PAH-Safe liquid smoke distiller fabricated

- Partial information on economic viability of the NAROFIK-2 shows that the kiln model had a net return on investment of 0.25 compared to 0.01 of the traditional smoking technology

- Draft business plans for 5 smoked fish processing enterprises from Lakes Victoria, Kyoga and Albert

- Procurement of key fabrication materials initiated as construction of 2nd prototype of NAROFIK-3 D4 is completed - At NALIRRI, Radio and Television talk shows organised, Design brochures for livestock and fish technologies. At DATP, 1. CKM Strategy popularized to 53 stakeholders including members of the user committee, NARO top management, reps of CGIARs, Makerere University, NGOs and CSOs. 2. During the stakeholder engagement, a structure of the implementation plan was developed.

### *Reasons for Variation in performance*

<b>Total</b>	<b>1,688,265</b>
GoU Development	1,688,265
External Financing	0
AIA	0

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

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## QUARTER 3: 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
NARO staff supported to enhance competencies Marine vessel CORMORANT insured 1. Laboratory block refurbishment and/or construction 2. Establishment of laboratories - Consultancies (technical backstopping) 3. Equipment and Tools 4. Furniture and supplies 5. Training of staff NARO physical resources maintained NARO land secured and titled	- Procurement process on-going for purchase of insurance for .marine vessel Hamerkop and MV Ibis. - Marine vessel cormorant needs complete overhaul.- NARO physical resources functional, clean, secure, safe and maintained an enabling office environment- Framework Contract signed running for a period of One (1) Year. - Fencing of surveyed NARO land - Tender concluded. Framework contracts signed with various Service providers. Call off orders to be placed as and when need arises. - Surveyed NARO Land in Tororo (Usukulu).	<b>Item</b> 221002 Workshops and Seminars 221003 Staff Training 221004 Recruitment Expenses 221006 Commissions and related charges 221009 Welfare and Entertainment 221012 Small Office Equipment 221016 IFMS Recurrent costs 221017 Subscriptions 222003 Information and communications technology (ICT) 223002 Rates 223005 Electricity 225001 Consultancy Services- Short term 226001 Insurances 226002 Licenses 227001 Travel inland 227002 Travel abroad 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture 228004 Maintenance – Other	<b>Spent</b> 213,514 434,815 159,675 319,178 93,980 1,500 29,830 59,190 13,800 50,000 10,000 623,630 100,000 98,286 477,256 235,962 155,643 21,488 251,846 64,103 1,250

### Reasons for Variation in performance

<b>Total</b>	<b>3,414,945</b>
GoU Development	3,414,945
External Financing	0
AIA	0

### Outputs Funded

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

International subscription and obligations settled	- Subscription made (part-2) for International subscription (Biodiversity International, ILRI).	Item	Spent
		262201 Contributions to International Organisations (Capital)	991,510
		264101 Contributions to Autonomous Institutions	2,500

### Reasons for Variation in performance

<b>Total</b>	<b>994,010</b>
GoU Development	994,010
External Financing	0



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## QUARTER 3: 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

### Capital Purchases

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

	Item	Spent
Functional and rejuvenated PARIs 1. Staff houses rehabilitated asbestos removed and re-roofed with iron sheets.	At NAROSEC - Tender concluded. - Contract signed with Sion Hardware Ltd. Awaiting completion of civil Works for asbestos removal and roofing. Tendering completed. Contracts signed with various contractors. Works completed and awaiting payment. Tendering completed.	281501 Environment Impact Assessment for Capital Works 40,000
2. Office blocks re-roofed with iron sheets rehabilitated and functional; 1. NACORI staff houses rehabilitated and habitable;	Contracts signed with various contractors. Works completed and awaiting payment. Tendering completed.	281502 Feasibility Studies for Capital Works 137,206
2. NACORI office blocks rehabilitated with ramps for the weak and disabled and functional; Improved Infrastructure at Kajansi Improved value addition Infrastructure at Nabuin Improved value addition Infrastructure at Bulindi ZARDI Nabuin ZARDI perimeter fence in place, farm animals and field experiments secured. 1. RWEBITABA ZARDI staff houses rehabilitated and habitable;	Contracts signed with various contractors. Works completed and awaiting payment. Tendering concluded. Contracts awarded to various firms. Contracts signed with only two firms due to Insufficient funds on Vote. Awaiting signature of other Contracts-At NAROSEC - Contractor on Board. Work In Progress at 55% (NASARRI office blocks)	281503 Engineering and Design Studies & Plans for capital works 208,000
2. RWEBITABA ZARDI Office blocks with ramps rehabilitated;		281504 Monitoring, Supervision & Appraisal of capital works 128,340
3. RWEBITABA ZARDI drying yards/floors rehabilitated;		312101 Non-Residential Buildings 2,353,803
4. RWEBITABA ZARDI vehicle/equipment worksh1. NASARRI staff houses rehabilitated and habitable;		312104 Other Structures 24,985
2. NASARRI office blocks with ramps rehabilitated and functional;		
3. Drying yards/floors rehabilitated and functional;		
4. Vehicle/equipment workshop rehabilitated and functional.		

#### Reasons for Variation in performance

<b>Total</b>	<b>2,892,333</b>
GoU Development	2,892,333
External Financing	0
AIA	0

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



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## QUARTER 3: 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>644,880</b>
		GoU Development	644,880
		External Financing	0
		AIA	0

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

An assortment of new furniture and laboratory fittings for NACRRI offices and laboratory New furniture and assorted laboratory fittings for new offices and laboratory	Procurement process on going	Item	Spent
	Procurement process on going	312203 Furniture & Fixtures	163,398

#### Reasons for Variation in performance

<b>Total</b>	<b>163,398</b>
GoU Development	163,398
External Financing	0
AIA	0
<b>Total For SubProgramme</b>	<b>14,891,131</b>
GoU Development	14,891,131
External Financing	0
AIA	0

#### Development Projects

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

#### Outputs Provided

### Output: 01 Generation of agricultural technologies

One square mile of forage and feed production fields established and maintained (2,940 tons of silage and hay, 180 tons of grain produced)	Established and maintained livestock feed at Maruzi: 1) 377 tones of conserved feed (320 tones of maize silage, 15, tones of maize seed, 42 tones of hay (round bales) 2) 1064 kgs forgae seed p(Chloris) produced at Maruzi 3) 232.6 acres of forage production fields mainatined at nakyesasa (140 acres of chloris, 70 acres of maize, 9 acres of stylo, 1.6 acres of habarium, 10 acres of experimental feilds and 2 acres of caliandra) 4) 100 acres of forage seed (50 acres of chloris fields & 50 acres of soya bean sead) maintained at maruzi	Item	Spent
		211103 Allowances (Inc. Casuals, Temporary)	143,685
		221002 Workshops and Seminars	44,500
		224001 Medical Supplies	50,000
		224006 Agricultural Supplies	185,000
		227001 Travel inland	39,750
		227004 Fuel, Lubricants and Oils	132,500

#### Reasons for Variation in performance

<b>Total</b>	<b>595,435</b>
GoU Development	595,435
External Financing	0
AIA	0

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

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## QUARTER 3: 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
Functional IT utilities established.	- Functional internet system at Nakyesasa.	<b>Item</b> 222003 Information and communications technology (ICT)	<b>Spent</b> 47,000

### Reasons for Variation in performance

<b>Total</b>	<b>47,000</b>
GoU Development	47,000
External Financing	0
AIA	0

### Output: 04 Agricultural research capacity strengthened

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Item	Spent
Infrastructural capacity for feed storage and research operations developed Maruzi project vehicles maintained Functional electricity facilities established Institute assets relocated from Tororo to Nakyesasa and Maruzi	1) Five staff office blocks connected to salar system 2) One bore hole and four stance latrine renovated at Maruzi 3) Five staff office blocks connected to RAN internet system 4) One bore hole and four stance latrine renovated at Maruzi 5) Ten fire extinguishers installed at nakyesasa; 6) small scale power-driven mobile Milking system in place 7) CCTV camera system installed at nakyesasa to boost security and research monitoring 8) one Calf weighing scale equipment for growth monitoring of calves 9) one concrete slab and accompanying water system composed of 2 1000liter-water tanks for hydroponic feed production system installed at nakyesasa- Fully functional transport assets (3 vehicles). Fully functional institute assets including liquid nitrogen production, cold room storage of forage germplasm and sample preservation Institute assets relocated from Tororo to Nakyesasa and Maruzi	223005 Electricity 228001 Maintenance - Civil 228002 Maintenance - Vehicles	28,000 81,020 83,000

### Reasons for Variation in performance

<b>Total</b>	<b>192,020</b>
GoU Development	192,020
External Financing	0
AIA	0

### Capital Purchases

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

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Item	Spent
Capacity for mechanized farm operation strengthened	1) Ten fire extinguishers installed at nakyesasa. 2) small scale power-driven mobile Milking system in place. 3) CCTV camera system installed at nakyesasa to boost security and research monitoring. 4) one Calf weighing scale equipment for growth monitoring of calves.	312202 Machinery and Equipment	124,127

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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>124,127</b>
		GoU Development	124,127
		External Financing	0
		AIA	0
		<b>Total For SubProgramme</b>	<b>958,582</b>
		GoU Development	958,582
		External Financing	0
		AIA	0
		<b>GRAND TOTAL</b>	<b>46,231,502</b>
		Wage Recurrent	16,855,781
		Non Wage Recurrent	13,526,008
		GoU Development	15,849,713
		External Financing	0
		AIA	0

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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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### Program: 51 Agricultural Research

#### Recurrent Programmes

#### Subprogram: 01 Headquarters

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

		Item	Spent
1. Prepare, Print and submit the NARO Annual Work Plan);	- Prepared, and submit the NARO Ministerial Policy Statement	211103 Allowances (Inc. Casuals, Temporary)	4,260
2. Conduct Budget/Contracts committee meeting;		221002 Workshops and Seminars	3,250
3. Support PARIs during the QRPM;		221006 Commissions and related charges	53,510
4. Conduct NAROSEC and NARO Wide ARPM and other stakeholder engagements;		222001 Telecommunications	5,000
5. Status report on the work plan implementation.		223006 Water	6,400
		227001 Travel inland	5,780

#### Reasons for Variation in performance

<b>Total</b>	<b>78,200</b>
Wage Recurrent	0
Non Wage Recurrent	78,200
AIA	0

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

		Item	Spent
- NARO visibility in public events and Agricultural shows enhanced;	- Organised one farm clinic.	221001 Advertising and Public Relations	30,325
- Improved technologies, planting materials and agricultural Information materials generated, promoted and availed to stakeholders;			
- Strengthen processes for linking research products industry.			

#### Reasons for Variation in performance

<b>Total</b>	<b>30,325</b>
Wage Recurrent	0
Non Wage Recurrent	30,325
AIA	0

#### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

	Item	Spent
NARO land assets titled, monitored and secured;	211102 Contract Staff Salaries	5,619,667
-NARO Land issues attended to;	211103 Allowances (Inc. Casuals, Temporary)	183,110
- NARO Infrastructure (office, laboratory, residence, farm and field) facilities monitored and maintained.- MoUs, contracts and SMTAs drafted, reviewed and signed and legal advisory rendered.	212101 Social Security Contributions	557,529
- NARO represented in courts of judicature, . in liaison with external legal counsel,	213001 Medical expenses (To employees)	100,000
- Legal advice and guidance to the NARO Governing Council and Management;- Assessment report of PARI levels of Compliance;	213002 Incapacity, death benefits and funeral expenses	37,500
- Annual workshop for NARO Procurement Officers and committees	213004 Gratuity Expenses	464,980
- NARO Procurement Plan;	221001 Advertising and Public Relations	277,022
- report on Board of Survey for Disposal/ Evaluation of NARO Assets.- Managing and maintaining fleet & office equipment;	221002 Workshops and Seminars	126,899
- Managing utilities;	221003 Staff Training	3,139
- Maintaining office space and infrastructure;	221006 Commissions and related charges	9,452
- Managing cleaning services;	221007 Books, Periodicals & Newspapers	2,156
- Availing staff transport	221008 Computer supplies and Information Technology (IT)	2,000
- Managing security- Top Management (TPM) meetings and other committees activities facilitate;	221009 Welfare and Entertainment	52,348
- Coordination, lobbying and supervision of research and development conducted;	221011 Printing, Stationery, Photocopying and Binding	56,270
- Undertake and participate in engagement with stakeholders, collaborators and dev. partners.- Financial Management compliance status of 16 PARIs established on quarterly basis;	221012 Small Office Equipment	3,000
- Documenting NARO financial transactions into financial statements quarterly, half year and annual accounts achieved;	221016 IFMS Recurrent costs	60,281
- Internal and External audit exercise conducted.- NARO financial information prepared consolidate/ communicate/submitted (NARO financial year budget, Quarterly warranties; NARO wide budgets; Quarterly/Annual financial and supervision reports.	222001 Telecommunications	24,440
- Budget monitored	222002 Postage and Courier	91
- NARO financial payments concluded.- Pay staff salaries, allowances, staff welfare, staff facilitation and staff retirement and medical benefit- Staff facilitated to undertake/complete post graduate studies (PhD, MSc, Professional certifications)	222003 Information and communications technology (ICT)	2,000
- Students supported to carry out research;	223004 Guard and Security services	19,127
- Short term skills improvement programs undertaken;	223005 Electricity	104,330
- Travel support for International engagements.	224001 Medical Supplies	35,529
	224004 Cleaning and Sanitation	42,128
	224006 Agricultural Supplies	145,434
	227001 Travel inland	96,475
	227002 Travel abroad	8,475
	227004 Fuel, Lubricants and Oils	113,891
	228001 Maintenance - Civil	283,099
	228002 Maintenance - Vehicles	116,275
	228003 Maintenance – Machinery, Equipment & Furniture	33,116
	228004 Maintenance – Other	13,056
	273102 Incapacity, death benefits and funeral expenses	7,170

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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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### Reasons for Variation in performance

<b>Total</b>	<b>8,599,988</b>
Wage Recurrent	5,619,667
Non Wage Recurrent	2,980,320
AIA	0
<b>Total For SubProgramme</b>	<b>8,708,513</b>
Wage Recurrent	5,619,667
Non Wage Recurrent	3,088,845
AIA	0

### Recurrent Programmes

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

##### Outputs Provided

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

	Item	Spent
- 25,000 fruit seedlings produced;	211103 Allowances (Inc. Casuals, Temporary)	17,000
- Fruit mother gardens maintained;	224006 Agricultural Supplies	33,750
- On station Establishment and evaluation of fruit tree germplasm;	227001 Travel inland	14,000
- Highly effective IPDM packages for the control of citrus and mango pests and diseases identified		
- Best management practices for Citrus and mango fruit tree identified and documented;		
- Development of the most commercially viable products initiated;		
- Stakeholder engagements conducted to develop fruit seed production standards and guidelines;		
- Capacity of fruit tree nursery operators built;		
- Engagements to put in place a national fruit nursery operators' platform;		
- Capacity of fruit farmers built		
- Engagements to develop fruit quality standards and guidelines;		
- Procurement processes for a functional fruit analytical lab at Kiige;		
- Procurement processes for mini fruit processing facility at Kiige;		
- Project processes, activities and operations managed and coordinated (Computer for project coordination, internet bundles, voice bundles, fuel, cleaning services etc) .Research activities undertaken and monitored		

### Reasons for Variation in performance



# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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>64,750</b>
		Wage Recurrent	0
		Non Wage Recurrent	64,750
		AIA	0

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

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Item	Spent
NACRRI, new and improved crop technologies, innovations, information and management practices (TIMPS) promoted	- Cassava mechanization promoted in Nakasongola, Kigumba, Serere. The 13 fall army-worm control pesticides earlier approved were promoted. Tomato grafting to control bacterial wilt and management of pest and disease in citrus and mango have been delivered. Seven (7) bean varietal (NAROBAN 1-7) innovations delivered to uptake pathways	221002 Workshops and Seminars	24,600
		221011 Printing, Stationery, Photocopying and Binding	2,200
		227001 Travel inland	6,000
	- Improved crop varieties demonstrated on station.		

### Reasons for Variation in performance

<b>Total</b>	<b>32,800</b>
Wage Recurrent	0
Non Wage Recurrent	32,800
AIA	0

### Output: 04 Agricultural research capacity strengthened

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Item	Spent
Institute assets and activity sites secure Governance, Management and Staff facilitated (Staff welfare Lunch and break tea provided for staff; Fuel and oil for vehicles and motorcycles procured; stationery)Fiduciary obligations facilitated1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.	- NACRRI infrastructure Safe, secure clean (offices, laboratory, and farm structures) at Namulonge and at Kiige, in Kamulii district.	211103 Allowances (Inc. Casuals, Temporary)	4,388
2. Maintain effective ICT facilities; Subscription for internet paid;	- NACRRI research agenda strengthened by facilitating the advisory committee.meeting & Quarterly review workshop	221001 Advertising and Public Relations	1,250
3. Utilities paid (water utility, electricity, telephone).- Exhibitions participated	- Fiduciary obligations facilitated for the January-March 2020 period	221006 Commissions and related charges	2,500
- Staff & stakeholder meetings held	- Human resources appropriately utilised and managed	221007 Books, Periodicals & Newspapers	250
- Technologies disseminated and people reached.	- Institute human resources performance well managed and facilitated.	221008 Computer supplies and Information Technology (IT)	1,000
	- Institutes physical facilities and assets appropriately utilised and maintained	221009 Welfare and Entertainment	1,450
	-NACRRI's new and improved crop technologies (maize, rice, cassava, beans), innovations, information and management practices at two farm clinics to 1000 farmers from around Uganda.	221011 Printing, Stationery, Photocopying and Binding	1,500
		221012 Small Office Equipment	375
		222001 Telecommunications	1,050
		223004 Guard and Security services	2,500
		223005 Electricity	16,000
		224004 Cleaning and Sanitation	1,500
		225001 Consultancy Services- Short term	6,250
		226001 Insurances	570
		227004 Fuel, Lubricants and Oils	8,250
		228001 Maintenance - Civil	7,500
		228002 Maintenance - Vehicles	8,718
		228003 Maintenance – Machinery, Equipment & Furniture	3,637

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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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### Reasons for Variation in performance

<b>Total</b>	<b>68,688</b>
Wage Recurrent	0
Non Wage Recurrent	68,688
AIA	0
<b>Total For SubProgramme</b>	<b>166,238</b>
Wage Recurrent	0
Non Wage Recurrent	166,238
AIA	0

### Recurrent Programmes

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

##### Outputs Provided

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

	Item	Spent
- Study project Vehicles serviced and repaired;	211103 Allowances (Inc. Casuals, Temporary)	7,800
- Fish feed ingredients procured	221006 Commissions and related charges	2,500
Feed mill repaired & maintained	221011 Printing, Stationery, Photocopying and Binding	750
- Developed technologies disseminated;	222001 Telecommunications	2,050
- Wild parental stocked collected and acclimated in ponds on-station and used for selective breeding;	223004 Guard and Security services	1,470
- Selective breeding programmes for Nile tilapia and the African catfish enhanced.-	223005 Electricity	3,500
Operationalization of the hatchery, ponds and concrete tanks;	223006 Water	2,500
- Commercialisation of fish feed production by NaFIRRI at ARDC;	224001 Medical Supplies	68,700
- Selective breeding programmes of Nile tilapia and the African catfish enhanced.	224006 Agricultural Supplies	11,008
- Facilities and substrates for mass production of insects tested and cost effective ones setup for commercial production of insects;	227001 Travel inland	1,820
- Continuation of feeding experiment;	227004 Fuel, Lubricants and Oils	1,500
- Contracted guard hired and paid.Functional aquaria, onstation ponds, cage sites, feed mills, offices, marine vessels and sites.		

### Reasons for Variation in performance

<b>Total</b>	<b>103,597</b>
Wage Recurrent	0
Non Wage Recurrent	103,597
AIA	0

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

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
- Participate in exhibitions and shows - Staff & stakeholder meetings held; - Fisheries technologies disseminated	- NAFIRRI fisheries technologies fish feed and fish seed distributed to stakeholders	<b>Item</b>	<b>Spent</b>
		221001 Advertising and Public Relations	1,500
		221002 Workshops and Seminars	3,750
		221011 Printing, Stationery, Photocopying and Binding	2,000
		224001 Medical Supplies	9,600
		<b>Total</b>	<b>16,850</b>
		Wage Recurrent	0
		Non Wage Recurrent	16,850
		<i>AIA</i>	0

### Reasons for Variation in performance

#### Output: 04 Agricultural research capacity strengthened

1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.	- NAFIRRI physical resources , managed and maintained (offices, laboratories, vehicles, ICTs) , enabling and fully functional..	<b>Item</b>	<b>Spent</b>
2. Maintain effective ICT facilities; Subscription for internet paid;	- NAFIRRI human resource (full time, contract and casual) strengthened, functional and facilitated work force.	211103 Allowances (Inc. Casuals, Temporary)	2,750
3. Utilities paid (water utility, electricity, telephone).1. Staff allowances, wages, welfare Lunch and break tea provided for staff provided;	- Functional fisheries and marine research vessels.	221001 Advertising and Public Relations	473
2. Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journalsinstitute assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, JournalsInstitute visibility and operations enhanced	- Fisheries research agenda strengthened by a functional and facilitated advisory and contracts committees. NAFIRRI fisheries technologies demonstrated.	221006 Commissions and related charges	2,500
	(i) Participated in several information dissemination platforms including: The Agricultural show, the World Food Day at Bulindi ZARDI (16th October 2019), 2nd Fish festival at Jinja (1st December 2019), World Fisheries day at Kiyindi landing site (21st November 2019), A talk show held on NTV to raise awareness about fisheries, 13 bibliographic records of grey fisheries literature prepared for inclusion in Aquatic Sciences and Fisheries information system (ASFA database), transmitted electronic fisheries information to and data to databases, outreach and stakeholders in need of information, Fisheries information disseminated to over 2000 school children.	221007 Books, Periodicals & Newspapers	250
		221009 Welfare and Entertainment	2,000
		223005 Electricity	2,250
		223006 Water	2,500
		224004 Cleaning and Sanitation	4,000
		224006 Agricultural Supplies	13,750
		225001 Consultancy Services- Short term	45,000
		226001 Insurances	520
		227001 Travel inland	7,000
		227004 Fuel, Lubricants and Oils	7,250
		228001 Maintenance - Civil	31,250
		228002 Maintenance - Vehicles	10,168
		228003 Maintenance – Machinery, Equipment & Furniture	14,644
		273102 Incapacity, death benefits and funeral expenses	593
		<b>Total</b>	<b>146,898</b>
		Wage Recurrent	0
		Non Wage Recurrent	146,898
		<i>AIA</i>	0

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
		<b>Total For SubProgramme</b>	<b>267,345</b>
		Wage Recurrent	0
		Non Wage Recurrent	267,345
		<i>AIA</i>	0

### Recurrent Programmes

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

##### Outputs Provided

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

- Samples of priority tree species collected;
- Genetic diversity and molecular variation determined;
- Database of priority beneficial tree species developed;
- Market and value addition of priority tree species identified.

Item	Spent
211103 Allowances (Inc. Casuals, Temporary)	15,000
221006 Commissions and related charges	1,000
224006 Agricultural Supplies	39,000
227001 Travel inland	9,000
227004 Fuel, Lubricants and Oils	3,000

##### Reasons for Variation in performance

<b>Total</b>	<b>67,000</b>
Wage Recurrent	0
Non Wage Recurrent	67,000
<i>AIA</i>	0

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

- Exhibitions participated
- Staff & stakeholder meetings held
- Technologies disseminated and people reached.

Item	Spent
221001 Advertising and Public Relations	4,125
221002 Workshops and Seminars	2,438
221007 Books, Periodicals & Newspapers	368
221008 Computer supplies and Information Technology (IT)	2,375

##### Reasons for Variation in performance

<b>Total</b>	<b>9,306</b>
Wage Recurrent	0
Non Wage Recurrent	9,306
<i>AIA</i>	0

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

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Institute assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals	- NAFORRI research agenda strengthened by facilitating a functional advisory committee . NAFORRI physical resources (offices, laboratories, vehicles, ICTs) safe, secure, clean, fully functional, managed and well maintained.	<b>Item</b>	<b>Spent</b>
1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.		211103 Allowances (Inc. Casuals, Temporary)	2,750
2. Maintain effective ICT facilities; Subscription for internet paid;		221001 Advertising and Public Relations	1,500
3. Utilities paid (water utility, electricity, telephone).		221002 Workshops and Seminars	2,500
		221003 Staff Training	1,750
		221006 Commissions and related charges	2,500
		221008 Computer supplies and Information Technology (IT)	1,000
		221011 Printing, Stationery, Photocopying and Binding	4,875
		222001 Telecommunications	500
		222003 Information and communications technology (ICT)	382
		223004 Guard and Security services	3,000
		223005 Electricity	12,363
		224004 Cleaning and Sanitation	3,500
		224006 Agricultural Supplies	12,165
		225001 Consultancy Services- Short term	13,875
		227001 Travel inland	6,925
		227004 Fuel, Lubricants and Oils	4,000
		228001 Maintenance - Civil	3,000
		228002 Maintenance - Vehicles	4,700
		228003 Maintenance – Machinery, Equipment & Furniture	13,500

### Reasons for Variation in performance

<b>Total</b>	<b>94,785</b>
Wage Recurrent	0
Non Wage Recurrent	94,785
AIA	0
<b>Total For SubProgramme</b>	<b>171,090</b>
Wage Recurrent	0
Non Wage Recurrent	171,090
AIA	0

### Recurrent Programmes

#### Subprogram: 10 National Livestock Resources Research

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Inclusion levels of A. cinerea based protein supplement for ruminants and non ruminants developed	<p>- - A protocol to breed acrida cinerea has been developed.</p> <p>- In the effort to develop A. cinerea based protein supplement Inclusions for ruminants and non-ruminants and the associated Protocols. The relevant Ingredients and supplies are still being assembled..</p>	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	3,000
		222001 Telecommunications	500
		223004 Guard and Security services	1,000
		223005 Electricity	125
		224001 Medical Supplies	7,325
		224004 Cleaning and Sanitation	250
		224006 Agricultural Supplies	2,500
		227001 Travel inland	1,750
		227004 Fuel, Lubricants and Oils	1,640
		228002 Maintenance - Vehicles	375
<b>Total</b>			<b>18,465</b>
Wage Recurrent			0
Non Wage Recurrent			18,465
AIA			0

### Reasons for Variation in performance

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

NALIRRI new and improved livestock technologies, innovations, information and management practices (TIMPS) promoted	10 Pasture improvement platforms established in Moroto, Nabilatuk, and nakapiripirit, 4 community goat breeding network groups, DAFAN-Dairy Farmers Network, thirty (30) beef production farmer groups in Nakaseke, Luwero, Nakasongola, Masindi, Kiboga, Kyankwanzi, Mbararara, Kiruhura, Sembabule and Ingingiro.	<b>Item</b>	<b>Spent</b>
		221002 Workshops and Seminars	1,500
		221011 Printing, Stationery, Photocopying and Binding	50
		227001 Travel inland	800
<b>Total</b>			<b>2,350</b>
Wage Recurrent			0
Non Wage Recurrent			2,350
AIA			0

### Reasons for Variation in performance

#### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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. Staff allowances, wages, welfare Lunch and break tea provided for staff provided;	- NALIRRI physical and livestock resources (100 native and 75 improved breeding herd) secure, safe, cleaned, enhanced, and enabling workplace and research environment strengthened .	<b>Item</b>	<b>Spent</b>
2. Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, JournalsInstitute assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals.1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.	- NALIRRI research agenda has been strengthened by functional advisory committee and and a research and non research work force	211103 Allowances (Inc. Casuals, Temporary)	3,300
2. Maintain effective ICT facilities; Subscription for internet paid;	-	221001 Advertising and Public Relations	500
3. Utilities paid (water utility, electricity, telephone).ons participated	-	221003 Staff Training	1,750
- Staff & stakeholder meetings held	-	221006 Commissions and related charges	1,500
- Technologies disseminated and people	-	221007 Books, Periodicals & Newspapers	60
		221008 Computer supplies and Information Technology (IT)	1,000
		221011 Printing, Stationery, Photocopying and Binding	1,500
		221012 Small Office Equipment	750
		222001 Telecommunications	125
		222003 Information and communications technology (ICT)	1,713
		223004 Guard and Security services	375
		223005 Electricity	1,000
		224004 Cleaning and Sanitation	1,000
		226001 Insurances	320
		227001 Travel inland	3,600
		227004 Fuel, Lubricants and Oils	3,500
		228001 Maintenance - Civil	1,375
		228002 Maintenance - Vehicles	2,018

### Reasons for Variation in performance

<b>Total</b>	<b>25,385</b>
Wage Recurrent	0
Non Wage Recurrent	25,385
AIA	0
<b>Total For SubProgramme</b>	<b>46,200</b>
Wage Recurrent	0
Non Wage Recurrent	46,200
AIA	0

### Recurrent Programmes

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

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Germ plasma for semi arid crops collected , characterized and conserved.	- Four sorghum candidate lines submitted for variety release (2 hybrids, 2 OPVs) ;  - 2 green gram lines recommended for DUS; 5 cow pea lines for DUS testing.  - One production technology of Microdozing nitrogen nutrient fertilizer on sorghum and finger millet being evaluated with farmers in Teso region and one production technology of intercropping (2:1, 2:2) patterns on sorghum and finger millet being evaluated with farmers in Teso, Lango, Karamoja and West Nile regions	<b>Item</b> 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 2,750 1,500

### Reasons for Variation in performance

<b>Total</b>	<b>4,250</b>
Wage Recurrent	0
Non Wage Recurrent	4,250
AIA	0

### Output: 04 Agricultural research capacity strengthened

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Item	Spent
Institute assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals. 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.	- NASARRI research agenda strengthened by facilitating the advisory committees, Management committees and institute work force.  - NASARRI physical resources (some offices, institute assets, transport equipment, fittings, , ) safe, secured, managed and fully functional.  -	211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221006 Commissions and related charges 221007 Books, Periodicals & Newspapers 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 223004 Guard and Security services 223005 Electricity 224004 Cleaning and Sanitation 226001 Insurances 228002 Maintenance - Vehicles 273102 Incapacity, death benefits and funeral expenses	2,750 1,250 1,500 250 224 1,000 1,000 1,500 3,000 1,000 320 1,206 750
2. Maintain effective ICT facilities; Subscription for internet paid;			
3. Utilities paid (water utility, electricity, telephone).- Participate in exhibitions and shows ; - Staff & stakeholder meetings held; - Technologies disseminated and people reached.			

### Reasons for Variation in performance

<b>Total</b>	<b>15,750</b>
Wage Recurrent	0
Non Wage Recurrent	15,750
AIA	0
<b>Total For SubProgramme</b>	<b>20,000</b>
Wage Recurrent	0



# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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	20,000
		AIA	0

### Recurrent Programmes

#### Subprogram: 12 National Laboratories Research

##### Outputs Provided

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

		Item	Spent
- Formulation and optimization of nanosurface package;	1. Data on optimal and validated prototypes technical parameters	211103 Allowances (Inc. Casuals, Temporary)	6,250
- Validate and pilot optimised nanosurface packages;	2. Market attributes of AroNutro Instant Maize snack profiled	222001 Telecommunications	760
- Promote nanosurface packed foods. Priority commodities collected, characterized and conserved. - Culinary and market parameters of bio-preserved pre-cooked beans optimized;	3. Experiments on beans and biopreservative extracts ongoing;	223005 Electricity	3,750
- Bio-preserved pre-cooked bean product branded and introduced on the market.	4. Market analysis ongoing; Generation of pre-cooked beans prototypes and protocols ongoing	223006 Water	3,000
	5. Data on Nanosurface package prototypes is ongoing	224006 Agricultural Supplies	17,000
		227001 Travel inland	8,525
		227004 Fuel, Lubricants and Oils	1,000
		228003 Maintenance – Machinery, Equipment & Furniture	2,500
	6. Fabrication of prototype II of second generation NARO PAH-Safe smoking kiln (NAROFIK-3) is almost completed. 30% of the 2nd prototype of NARO PAH-Safe liquid smoke distiller fabricated		
	7. Partial information on economic viability of the NAROFIK-2 shows that the kiln model had a net return on investment of 0.25 compared to 0.01 of the traditional smoking technology		
	8. Draft business plans for 5 smoked fish processing enterprises from Lakes Victoria, Kyoga and Albert		
	9. Procurement of key fabrication materials initiated as construction of 2nd prototype of NAROFIK-3 D4 is completed		

### Reasons for Variation in performance

	<b>Total</b>	<b>42,785</b>
	Wage Recurrent	0
	Non Wage Recurrent	42,785
	AIA	0

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

		Item	Spent
NARL corporate image and NARL TIMPs promoted	Construction and equipping seed bank is underway in Nakasongola. 95 % constructional works completed.	221001 Advertising and Public Relations	200
		221002 Workshops and Seminars	250
		221011 Printing, Stationery, Photocopying and Binding	250

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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>700</b>
		Wage Recurrent	0
		Non Wage Recurrent	700
		AIA	0

### Output: 04 Agricultural research capacity strengthened

	Item	Spent
Institute assets and activity sites secure Governance committees, Management committees, Staff facilitated and Staff training (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained. 2. Maintain effective ICT facilities; Subscription for internet paid; 3. Utilities paid (water utility, electricity, telephone).- Exhibitions participated - Staff & stakeholder meetings held - Technologies disseminated and people reached.	- NARL research agenda strengthened by facilitating a functional management committee and NARL of work force motivated (40 scientist and 20 laborers) .	211103 Allowances (Inc. Casuals, Temporary) 4,375
	- NARL physical resources (vehicles, fittings, offices laboratories, farm and field equipment) and assets safe, secured, clean and fully functional.	221003 Staff Training 2,500
	- NARL technologies demonstrated at two farm clinics,	221006 Commissions and related charges 613
		221007 Books, Periodicals & Newspapers 562
		221008 Computer supplies and Information Technology (IT) 510
		221009 Welfare and Entertainment 1,100
		221011 Printing, Stationery, Photocopying and Binding 810
		222002 Postage and Courier 200
		223004 Guard and Security services 1,300
		223005 Electricity 2,800
		224004 Cleaning and Sanitation 1,365
		225001 Consultancy Services- Short term 2,875
		227001 Travel inland 3,838
		227004 Fuel, Lubricants and Oils 6,250
		228002 Maintenance - Vehicles 1,292
	228003 Maintenance – Machinery, Equipment & Furniture 563	

### Reasons for Variation in performance

<b>Total</b>	<b>30,952</b>
Wage Recurrent	0
Non Wage Recurrent	30,952
AIA	0
<b>Total For SubProgramme</b>	<b>74,437</b>
Wage Recurrent	0
Non Wage Recurrent	74,437
AIA	0

### Recurrent Programmes

#### Subprogram: 13 Abi ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	US\$ Thousand
Priority crops for northwestern zone collected, characterised, conserved and demonstrated- Materials of cassava and associated ingredients collected for formulation; - Materials acquired for cassava composites.	<ul style="list-style-type: none"> <li>- Eight (8) bucks being prepared for dissemination</li> <li>- 14 sorghum lines evaluated for nutritional profiling</li> <li>- Three newly released varieties (Narosorg 1, 2 and 3) introduced and are under evaluation</li> <li>- 30 members of local seed business (LSB) comprising 6 extension staff, 6 community based facilitators and 18 committee members of LSB groups trained</li> <li>- 30 members of local seed business (LSB) comprising 6 extension staff, 6 community based facilitators and 18 committee members of LSB groups trained.</li> </ul>	<b>Item</b> 221001 Advertising and Public Relations 221006 Commissions and related charges 222001 Telecommunications 224006 Agricultural Supplies 227001 Travel inland	<b>Spent</b> 1,000 2,175 200 16,500 19,500

### Reasons for Variation in performance

<b>Total</b>	<b>39,375</b>
Wage Recurrent	0
Non Wage Recurrent	39,375
AIA	0

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

Abi ZARDI corporate image and new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted.- Two functional cassava out-grower schemes supported; - One nutrition platform supported.	Key actors in the cassava value chain identified and information on production, marketing and processing being generated and synthesised. 340 cassava value chain actors (56% females and 44% males) profiled into 112 marketers (32%), 72 processors (21%) and 156 producers (57%)  300 (199 males (66%) and 101 females (34%)) cassava outgrowers identified of whom 20 (7 females and 13 males) are commercial scale individual producers (>20 acres under cassava)	<b>Item</b> 221001 Advertising and Public Relations 221002 Workshops and Seminars 221008 Computer supplies and Information Technology (IT) 221011 Printing, Stationery, Photocopying and Binding	<b>Spent</b> 750 5,250 1,250 500
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### Reasons for Variation in performance

<b>Total</b>	<b>7,750</b>
Wage Recurrent	0
Non Wage Recurrent	7,750
AIA	0

### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
- Functional fleet & office equipment; - Functional utilities; - Functional office space and infrastructure; - Managing cleaning services; - Functional staff transport - Effective security services Abi ZARDI operations facilitated Abi ZARDI Human resource motivated Institute assets and activity sites secure Abi ZARDI corporate image and new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted	Abi ZARDI physical resources.(vehicles, offices, farm and laboratories). Safe, secure, clean and fully managed and functional.  - Abi ZARDI research agenda strengthened by facilitating the advisory committee, Abi ZARDI work force facilitated, motivated and remunerated.  - Exhibited at the 2019 World Food Day celebrations at Bulindi ZARDI and participated at the celebration of 10-Year anniversary if Onduparaka Football Club.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221002 Workshops and Seminars 221008 Computer supplies and Information Technology (IT) 221009 Welfare and Entertainment 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 273102 Incapacity, death benefits and funeral expenses	<b>Spent</b> 2,250 300 1,000 1,000 200 1,500 500 100 1,000 100 4,300 7,500 250 2,750 425 500
		<b>Total</b>	<b>23,675</b>
		Wage Recurrent	0
		Non Wage Recurrent	23,675
		AIA	0
		<b>Total For SubProgramme</b>	<b>70,800</b>
		Wage Recurrent	0
		Non Wage Recurrent	70,800
		AIA	0

### Reasons for Variation in performance

#### Recurrent Programmes

#### Subprogram: 14 Bulindi ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
<ul style="list-style-type: none"> <li>- Assorted equipment acquired;</li> <li>- Goat feedlot unit maintained;</li> <li>- Goat breeding unit managed;</li> <li>- Pasture unit maintained;</li> <li>- Goat diseases surveyed on and control</li> <li>On-farm research activities monitored</li> </ul>	<ul style="list-style-type: none"> <li>- Completed the construction of two goat houses; feedlot and breeding goat houses ( Dimension: 5meters X 25 meters, Feed troughs, water trough fitted, Lockable)</li> <li>- 5 acres of demos for maize, soybean, millet and sorghum onstation established.</li> <li>- 39 student interns received and trained at the institute , 21 farmers accessed information and 1 farmer accessed the planter used to plant 14 acres of maize</li> <li>- One radio talkshow at Spce radio on promotion of vegetable production in Hoima conducted</li> <li>- Opened up 50 acres of maize seed (Longe 7H) fields for multiplication at Kigumba</li> <li>- 10 acres of beans and 5 acres of millet established onstation for seed multiplication</li> <li>- Onstation and Onfam demos for bean and millet varieties; seed of priority varieties disseminated 90 farmers from the project site ; 8 onfarm bean, and 1 millet demos established in the project site .</li> </ul>	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 224001 Medical Supplies 227001 Travel inland	<b>Spent</b> 10,000 13,750 10,080

### Reasons for Variation in performance

<b>Total</b>	<b>33,830</b>
Wage Recurrent	0
Non Wage Recurrent	33,830
AIA	0

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

<ul style="list-style-type: none"> <li>- Goat producers trained;</li> <li>- Abattoir workers identified and trained;</li> <li>- Exporters identified and trained;</li> <li>- Butchery workers trained on meat safety;</li> <li>- Meat transporters trained;</li> <li>- Brochures produced on various technologies;</li> <li>- Adoption level of Climate change resilient production systems;</li> <li>- Training conducted on minimising green house emissions in goat farming system</li> <li>Bulindi ZARDI corporate image and new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted.</li> </ul>	<ul style="list-style-type: none"> <li>- Maintained the 2 acres of mother garden ( 0.25 acres of lablab, centrosema , green leaf desmoidia, Alfalfa and Brachieria brizantha respectively)</li> <li>- Rehabilitated 15 more acres of natural grazing land for supporting breeding goats (Removed toxic plants and spot planted with Centrocema spp, Brachieria spp and green leaf desmoidia.</li> <li>• Continued with data processing of baseline survey</li> </ul>	<b>Item</b> 221001 Advertising and Public Relations	<b>Spent</b> 3,500
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### Reasons for Variation in performance

<b>Total</b>	<b>3,500</b>
Wage Recurrent	0

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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	3,500
		AIA	0

### Output: 04 Agricultural research capacity strengthened

		Item	Spent
- Institute fleet & office equipment Managed and maintained ;	- Bulindi ZARDI physical resources (vehicle, office farm livestock and other asset ) fully functional, enhanced, safe, secure and enabling workplace and research environment	211103 Allowances (Inc. Casuals, Temporary)	2,250
- Utilities Managed and maintained ;		221002 Workshops and Seminars	12,500
- office space and infrastructure Managed and maintained;		221003 Staff Training	5,000
- Cleaning services Managed and maintained ;		221007 Books, Periodicals & Newspapers	350
- Availing staff transport;	- Bulindi research agenda for the Bunyoro sub region strengthened by facilitating a fully functional advisory committee and Institute work force.	221009 Welfare and Entertainment	2,250
- Security Managed and maintained. Provisions made to secure institute assets.Provisions made include fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, JournalsGovernance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals		221011 Printing, Stationery, Photocopying and Binding	1,250
		222001 Telecommunications	500
		222002 Postage and Courier	25
		223004 Guard and Security services	1,750
		223005 Electricity	8,000
		224004 Cleaning and Sanitation	2,000
		224005 Uniforms, Beddings and Protective Gear	2,750
		225001 Consultancy Services- Short term	3,750
		226001 Insurances	320
		227001 Travel inland	11,750
		227004 Fuel, Lubricants and Oils	6,750
		228001 Maintenance - Civil	13,750
		228002 Maintenance - Vehicles	9,250
		228003 Maintenance – Machinery, Equipment & Furniture	250
		228004 Maintenance – Other	155
		273102 Incapacity, death benefits and funeral expenses	250

### Reasons for Variation in performance

<b>Total</b>	<b>84,850</b>
Wage Recurrent	0
Non Wage Recurrent	84,850
AIA	0
<b>Total For SubProgramme</b>	<b>122,180</b>
Wage Recurrent	0
Non Wage Recurrent	122,180
AIA	0

### Recurrent Programmes

#### Subprogram: 15 Kachwekano ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
New and improved livestock technologies, innovations, information and management practices (TIMPS) for the zone identified	<ul style="list-style-type: none"> <li>Fish ponds cleaned and fish numbers estimated within the pods</li> <li>Goat grazing paddocks weeded, houses and fences repaired, goats treated for the control of diseases and endo- and ecto-parasites. 10 new kids weaned</li> </ul>	<b>Item</b>	<b>Spent</b>
		223005 Electricity	1,375
		223006 Water	1,000
		224006 Agricultural Supplies	61,250
		227001 Travel inland	1,460
		227004 Fuel, Lubricants and Oils	1,002

### Reasons for Variation in performance

<b>Total</b>	<b>66,087</b>
Wage Recurrent	0
Non Wage Recurrent	66,087
AIA	0

### Output: 04 Agricultural research capacity strengthened

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Item	Spent
<p>Institute assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Provisions made include fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.</p> <p>2. Maintain effective ICT facilities; Subscription for internet paid;</p> <p>3. Utilities paid (water utility, electricity, telephone). Kachwekano ZARDI corporate image and new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted</p>	<p>Safe institute assets (offices, livestock and ponds) and research and experimental sites secure.</p> <p>- Kachwekano ZARDI research agenda for the southwestern zone strengthened by a functional advisory committees and research and non-research work force..</p> <p>- Kachwekano ZARDI physical resources functional, safe and secure. - Office work space enabling workplace and research environment strengthened through maintenance of both research facilities and equipment and payment for utilities.</p> <ul style="list-style-type: none"> <li>3 field days conducted in Kabale, Kisoro and Rukiga districts and 100 farmers (67 women and 33 men) trained in best practices of seed potato harvesting handling and harvesting</li> <li>1 video documentary developed on best practices for seed potato harvesting, handling and storage.</li> </ul>	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	2,250
		221006 Commissions and related charges	1,250
		221009 Welfare and Entertainment	1,250
		221011 Printing, Stationery, Photocopying and Binding	2,231
		222001 Telecommunications	388
		222003 Information and communications technology (ICT)	799
		223004 Guard and Security services	5,000
		223005 Electricity	12,500
		223006 Water	5,000
		224004 Cleaning and Sanitation	2,402
		226001 Insurances	250
		227001 Travel inland	6,500
		227004 Fuel, Lubricants and Oils	6,800
		228001 Maintenance - Civil	1,250
		228002 Maintenance - Vehicles	3,950
228003 Maintenance – Machinery, Equipment & Furniture	875		

### Reasons for Variation in performance

<b>Total</b>	<b>52,695</b>
Wage Recurrent	0
Non Wage Recurrent	52,695
AIA	0
<b>Total For SubProgramme</b>	<b>118,782</b>
Wage Recurrent	0
Non Wage Recurrent	118,782

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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

### Recurrent Programmes

#### Subprogram: 16 Mukono ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Item	Spent
Germ plasma for priority commodities collected, characterised and conserved.	Mukono ZARDI generated and promoted the following TIMPs. <ul style="list-style-type: none"> <li>• 39,200 high quality fingerlings produced and distributed to 10 farmers, 8 of them males, 2 females.</li> <li>• 20000 fry still on site</li> <li>• Full sib inbred lines (Victoria 1506; Kyoga 1722; Nabugabo 2,021) lines in development.</li> <li>• Broodstock development; 185 Kyoga (35.53g); 285 Victoria (41.3g), 525 Nabugabo (48.65g).</li> <li>• 288 sex-reversed Tilapia males (41g average body weight) awaiting sexing for identification of NeoMales</li> </ul>	221011 Printing, Stationery, Photocopying and Binding 221012 Small Office Equipment 222001 Telecommunications 223005 Electricity 224001 Medical Supplies 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils	1,000 1,250 1,500 3,500 18,375 42,875 1,000 1,000
	Indoor Wet-lab assembled, capacity to handle 4 treatments with 3 replicates each operationalized for sturdy of fish from larvae to fingerling stage.		

#### Reasons for Variation in performance

<b>Total</b>	<b>70,500</b>
Wage Recurrent	0
Non Wage Recurrent	70,500
AIA	0

#### Output: 04 Agricultural research capacity strengthened



# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Managing and facilitating Mukono ZARDI Human resource Institute assets and activity sites secure Provisions made include fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.	- Mukono ZARDI research agenda for the lake Victoria crescent zone was strengthened by facilitating the fully functional advisory committee and the institute work force.	<b>Item</b>	<b>Spent</b>
2. Maintain effective ICT facilities; Subscription for internet paid;	- Mukono ZARDI physical resources were maintained, safe and secure. - The institute has an enabling, safe and secure research environment.	211103 Allowances (Inc. Casuals, Temporary)	2,250
3. Utilities paid (water utility, electricity, telephone).		221001 Advertising and Public Relations	750
		221006 Commissions and related charges	2,500
		221007 Books, Periodicals & Newspapers	313
		221009 Welfare and Entertainment	938
		221011 Printing, Stationery, Photocopying and Binding	1,250
		222002 Postage and Courier	63
		223004 Guard and Security services	5,000
		223005 Electricity	12,500
		223006 Water	5,000
		224004 Cleaning and Sanitation	2,238
		226001 Insurances	225
		227001 Travel inland	5,000
		227004 Fuel, Lubricants and Oils	5,000
		228002 Maintenance - Vehicles	3,866
		228003 Maintenance – Machinery, Equipment & Furniture	250
		273102 Incapacity, death benefits and funeral expenses	1,109

### Reasons for Variation in performance

<b>Total</b>	<b>48,250</b>
Wage Recurrent	0
Non Wage Recurrent	48,250
AIA	0
<b>Total For SubProgramme</b>	<b>118,750</b>
Wage Recurrent	0
Non Wage Recurrent	118,750
AIA	0

### Recurrent Programmes

#### Subprogram: 17 Ngetta ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Effective management practices for livestock parasite and disease control developed - Capacity of soil laboratory to effectively conduct soil analysis enhanced	<ul style="list-style-type: none"> <li>• Procurement on-going for the assorted chemicals to support soil testing</li> </ul>	<b>Item</b>	<b>Spent</b>
Local poultry research enhanced Cost effective Integrated disease and pest management technology for citrus and mango developed		224001 Medical Supplies	15,000
Appropriate SLM technologies adapted	- Procurement of poultry production materials made and rehabilitation units completed.	224006 Agricultural Supplies	10,000
Fish farming technologies demonstrated	- Adaptive trials established for groundnuts serenut 8R and 14R. Soybean 6N and 3N.	227001 Travel inland	1,090
Effective technologies for management of post harvest seed pests and diseases for QDS production developed	<ul style="list-style-type: none"> <li>• Data on leaf spot severity collected and preliminary analysis revealed average field incidence of less than 5% for the two treatments (Prunning+ fungicide application + field sanitation, and bark horning+ pruning+ fungicide+ sanitation) when compared to the untreated controls where the incidence was 100% and severity of 5 on a scale of 1-5 (1=no disease and 5 =severity above 50%).</li> </ul>	227004 Fuel, Lubricants and Oils	1,000
Undertake technology identification and development in one sub zone		228002 Maintenance - Vehicles	1,000

Ngetta ZARDI generated the following TIMPs:

- One tonne of soyabean was sold at 5,000 per kilo and 2 acres prepared for the coming rains of April/May
- 785 kgs of maize produced and sold, 2 acres of land prepared for planting
- Procured forest soil for raising the seedlings, grafted 1,000 - citrus seedlings and 2,000 eucalyptus seedlings cloned

### Reasons for Variation in performance

<b>Total</b>	<b>28,090</b>
Wage Recurrent	0
Non Wage Recurrent	28,090
AIA	0

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

Stake holders made aware of the various agricultural technologies in quarter 3Enhanced corporate image, new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted

Item	Spent
221001 Advertising and Public Relations	690
221007 Books, Periodicals & Newspapers	250
221008 Computer supplies and Information Technology (IT)	438

### Reasons for Variation in performance

<b>Total</b>	<b>1,378</b>
Wage Recurrent	0
Non Wage Recurrent	1,378

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
		AIA	0
<b>Output: 04 Agricultural research capacity strengthened</b>			
Institute assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained. 2. Maintain effective ICT facilities; Subscription for internet paid; 3. Utilities paid (water utility, electricity, telephone). 1. Exhibitions participated 2. Staff & stakeholder meetings held 3. Technologies disseminated and people reached.	- Ngetta ZARDI research agenda for the northern and mid northern Uganda sub zones monitored and strengthened by facilitating the Functional advisory committee and institute work force. - Ngetta ZARDI physical resource (offices, farm buildings, transport equipment and specialized equipment) managed, safe, secure some fully functional.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221006 Commissions and related charges 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 222002 Postage and Courier 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 273102 Incapacity, death benefits and funeral expenses	<b>Spent</b> 2,250 2,250 925 2,250 500 125 6,000 14,500 7,000 2,466 320 5,000 5,000 717 2,500 500
			<b>Total</b>
			<b>52,303</b>
			Wage Recurrent
			0
			Non Wage Recurrent
			52,303
			AIA
			0
			<b>Total For SubProgramme</b>
			<b>81,770</b>
			Wage Recurrent
			0
			Non Wage Recurrent
			81,770
			AIA
			0

### Recurrent Programmes

#### Subprogram: 18 Nabium ZARDI

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Priority commodities collected , characterised and conserved. Control strategy for Brucellosis in Karamoja region determined and in place and implementation of Control strategy for Brucellosis started. Planting and management of 30 acres	<p>1. 5 acres of land prepared for establishment of pastures (Napier, Cenchrus ciliaris, Brachiaria mulato) for seed multiplication for the farmers. 57 farmers and students (25 female, 32 male) trained on hay making and utilisation, pasture seed handling and packaging</p> <p>2. 16 Sahiwal and 36 Friesian cattle maintained on-station to produce breeding stock for farmers. 57 farmers and students (25 female, 32 male) trained on health management, breeding, milk production and handling</p> <p>3. 32 Mubende goats maintained on-station to improve productivity amongst farmers; 1 buck availed to one farmer. 51 farmers and students (22 female, 29 male) trained on breeding, kid management and record keeping</p> <p>4. 11 Cambrough piglets maintained on-station for improving pig production amongst farmers; 5 piglets availed to 2 farmers to improve productivity. 6 students and farmers (3 male, 3 female) trained on housing, feeding, breeding pigs.</p> <p>5. The growth performance of African catfish juveniles (initial average weight = <math>64.3 \pm 0.2</math> g) under three feeding regimes evaluated. The weight gain in 100 days for three feeding frequencies was as follows: 235.7g if fed 2 times/day, 185.7 g if fed 3 times/day, 157.7 g if fed for once/day. The specific growth rate followed the same trend: 1.39% /day, 1.22% /day and 1.11% /day for the 2 times/ day, 3 times /day and 1 time feeding frequencies respectively.</p>	<p><b>Item</b></p> <p>211103 Allowances (Inc. Casuals, Temporary)</p> <p>221002 Workshops and Seminars</p> <p>221011 Printing, Stationery, Photocopying and Binding</p> <p>222001 Telecommunications</p> <p>223004 Guard and Security services</p> <p>223005 Electricity</p> <p>224001 Medical Supplies</p> <p>224006 Agricultural Supplies</p> <p>227001 Travel inland</p> <p>227004 Fuel, Lubricants and Oils</p>	<p><b>Spent</b></p> <p>7,875</p> <p>2,100</p> <p>3,500</p> <p>1,250</p> <p>4,000</p> <p>8,438</p> <p>16,050</p> <p>15,000</p> <p>12,750</p> <p>2,875</p>

### Reasons for Variation in performance

<b>Total</b>	<b>73,838</b>
Wage Recurrent	0
Non Wage Recurrent	73,838
AIA	0

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

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Planting and management of 30 acres	<ol style="list-style-type: none"> <li>25 farmers trained in appropriate pond management techniques for African catfish</li> <li>Four (04) sensitisation meetings (32 male, 28 female) about transmission, control of brucellosis between animals and humans held in Kotido and Karenga Districts</li> <li>Eight implementing farmer groups (60% female and 40% youth) established in 8 selected sub counties in of Kaabong, Kotido, Nakapiripirit and Nabilatuk. 182 farmers (122 women, 60 youth) trained on Integrated Natural Resource Management and agronomic practices of the five selected crops (sorghum, maize, cassava, millet, sweet potatoes), and trained conducted on groups dynamics and financial management.</li> <li>Eight seed multiplication sites of 56 ha, for five crop enterprises (sorghum, maize, cassava, millet, sweet potatoes) selected in Kotido, Nakapiripirit and Moroto Districts</li> <li>Seed production practices, processing, storage and post-handling and markets assessed among 178 youth and women farmers in Kotido, Kaabong and Nakapiripirit Districts. 178 farmer groups (108 women, 70 youth) sensitized on the SURE FS project.</li> </ol>	<b>Item</b> 221001 Advertising and Public Relations 221002 Workshops and Seminars	<b>Spent</b> 1,000 3,000
		<b>Total</b>	<b>4,000</b>
		Wage Recurrent	0
		Non Wage Recurrent	4,000
		A/A	0

### Reasons for Variation in performance

**Output: 04 Agricultural research capacity strengthened**

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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 assets and activity sites secured Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.	- Functional Nabuin work place, clean, safe, secure and enabling environment for research (3 office blocks, one laboratory). - Nabuin ZARDI strengthened research agenda for the northeastern dry lands agro ecologies.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221006 Commissions and related charges 221007 Books, Periodicals & Newspapers 221009 Welfare and Entertainment 222002 Postage and Courier 224004 Cleaning and Sanitation 224005 Uniforms, Beddings and Protective Gear 226001 Insurances 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> 2,250 625 1,506 250 925 125 1,125 750 320 3,000 1,313 2,018 250 750
2. Maintain effective ICT facilities; Subscription for internet paid; 3. Utilities paid (water utility, electricity, telephone). 1. Exhibitions participated 2. Staff & stakeholder meetings held 3. Technologies disseminated and people reached.			
		<b>Total</b>	<b>15,207</b>
		Wage Recurrent	0
		Non Wage Recurrent	15,207
		AIA	0
		<b>Total For SubProgramme</b>	<b>93,044</b>
		Wage Recurrent	0
		Non Wage Recurrent	93,044
		AIA	0

### Reasons for Variation in performance

### Recurrent Programmes

#### Subprogram: 19 Mbarara ZARDI

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Item	Spent
Germ plasma for Priority commodity for southern range lands collected , characterised, conserved and demonstrated	Mbarara ZARDI generated the following TIMPS: • Package for sustainable soil fertility management/conservation developed. - The best two performing starter culture formulae (1 for ghee and 1 for youghurt) identified for enhancing traditional ghee production and marketability in SW Uganda - to support the ghee cottage industry in the zone. - 2 Clay based anti-aflatoxin formulae identified for pre-treatment of maize bran based feeds.	221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 223004 Guard and Security services 223006 Water 224001 Medical Supplies 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils	600 400 4,500 2,000 36,750 24,500 3,250 1,500

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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>			
		<b>Total</b>	<b>73,500</b>
		Wage Recurrent	0
		Non Wage Recurrent	73,500
		AIA	0

### Output: 04 Agricultural research capacity strengthened

	Item	Spent	
<p>Institute assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.</p> <p>2. Maintain effective ICT facilities; Subscription for internet paid;</p> <p>3. Utilities paid (water utility, electricity, telephone).</p> <p>1. Exhibitions participated</p> <p>2. Staff &amp; stakeholder meetings held</p> <p>3. Technologies disseminated and people reached.</p>	- Mbarara ZARDI managed, maintained and monitored the research agenda for the southern ranged lands by facilitating the one advisory committee, two management committees and a work force of 40 Staff.	211103 Allowances (Inc. Casuals, Temporary) 2,250	
	- Mbarara ZARDI managed, maintained and monitored the physical resources/assets of the institute Functional Mbarara ZARDI fleet.( vehicles and 1 tractor) - The physical resources/assets, are clean, safe and enabling workplace and research environment strengthened. Mbarara ZARDI technologies were promoted.	221001 Advertising and Public Relations 323	
	• High quality crop planting materials of cassava (15 acres, 22 varieties), coffee (Kawanda Robust wilt resistance KR1-KR7 - 1400 seedlings)and Biofortified common beans have been produced and partially disseminated. A total of 1000 improved mango, citrus and avocado varieties were grafted and 890 improved citrus varieties disseminated to farmers through sale.	221006 Commissions and related charges 2,750	
	• 2 acres with 30 pasture species in a habarium maintained clean and manured as demonstration. 4 acres of Sugar Napier weeded and manured. On-station ponds cleared of bush. Eight (8) tons of maize bran produced to support on-station cattle and piggery feeding . Veterinary drugs procured and dispensed to cattle, pigs and goats.	221011 Printing, Stationery, Photocopying and Binding 1,500	
	• Improved agricultural technologies in crop, livestock, fish and agroforestry disseminated to about 306 stakeholders (146 students from 9 schools and 159 farmers).	223004 Guard and Security services 5,000	
	- • 6 recommended technology options to be integrated with 3 farmers' innovations selected based the survey data and in collaboration with the DAO and subcounty extension workers.	223005 Electricity 12,500	
		223006 Water 5,000	
		224004 Cleaning and Sanitation 2,250	
		226001 Insurances 320	
		227001 Travel inland 5,000	
		227004 Fuel, Lubricants and Oils 6,000	
		228002 Maintenance - Vehicles 3,358	

*Reasons for Variation in performance*

**Total 46,250**

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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	46,250
		AIA	0
		<b>Total For SubProgramme</b>	<b>119,750</b>
		Wage Recurrent	0
		Non Wage Recurrent	119,750
		AIA	0

### Recurrent Programmes

#### Subprogram: 20 Buginyaya ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies



# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Germplasm for Priority commodity for eastern lowlands and highlands collected, characterized, conserved and demonstrated	(1) - Produced 3 training manuals (2) Validated Nerica 4 and 6 varieties for up take pathways. (3) - Rehabilitation of 10 breeding and nursery ponds in Mbale completed. (4)- 6 pasture production fields established in Bukwo,Kapchorwa,Kween, Bulambuli and Sironko districts (5) 5 QPM (Quality Protein Maize) hybrids with highland adaptability ascertained. (6) 2.5 tons of beans foundation seed produced (6) Maintained the apple orchards and carried out training of the plants. (7) More 7 ha of assorted tree species planted at Buginyanya and Bulegeni (8) Maintained the 5 ha of Murlbury trees in collaboration with MoSTI for sericulture production. (9) Established and maintained 0.5 ha of seed plots which is at flowering stage. (10) 100 bags of sweet potato vines distributed to Swisscontact farmers in Mayuge. 120 bags of cassava distributed to farmers in Iganga, Jinja and Luuka. (11) 0.2 Ha of Chloris gayana maintained and seed ready for harvesting at Bulegeni satellite station (12) 76 Farmers (68 female and 8 male) from Nabugimbi Yetana Women's group in Bulambuli district trained on seed management. (13) Six pasture production fields established in Bukwo,Kapchorwa,Kween, Bulambuli and Sironko districts (14) 32 field pea germplasm were planted for characterisation. Materials are being harvested and full information for next quarter (15) 5 farmer groups identified and worked with for both characterisation and seed increment (16) 12 wheat lines selected at AYT and being advanced to NPT (17) Use of rooted apical cuttings has been recommended for uptake by potato farmers; and preliminary information on management of Philaris minor generated (18) 5 LSBs were supported during the quarter through trainings, field monitoring, farm clinic and marketing of their seeds; one MSIP was also supported. (19) a total of 4 technologies and management practices delivered to uptake pathways	<b>Item</b> 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 223004 Guard and Security services 223005 Electricity 223006 Water 224001 Medical Supplies 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles	<b>Spent</b> 1,000 1,000 2,750 2,000 1,000 18,375 42,875 1,125 1,000 1,000

### Reasons for Variation in performance

<b>Total</b>	<b>72,125</b>
Wage Recurrent	0
Non Wage Recurrent	72,125
A/A	0

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
<b>Output: 04 Agricultural research capacity strengthened</b>			
Institute assets and activity sites secure Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals 1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained. 2. Maintain effective ICT facilities; Subscription for internet paid; 3. Utilities paid (water utility, electricity, telephone). 1. Exhibitions participated 2. Staff & stakeholder meetings held 3. Technologies disseminated and people reached.	- Buginyanya managed, maintained and monitored the research agenda for the eastern agro-ecologies by facilitating one advisory and consultative meeting .  - Buginyanya physical resources fully functional, safe, secure. and clean and providing an enabling environment for institute offices, and farm machinery, transport and research research stations at Ikulwe , Bulegeni and Buginyanya 1) 2.5 tons of beans foundation seed distributed 2) Maintained the 5 ha of Murlbury trees. 3) 100 bags of sweet potato vines distributed to Swisscontact farmers in Mayuge. 120 bags of cassava distributed to farmers in Iganga, Jinja and Luuka 4) 76 Farmers (68 female and 8 male) from Nabugimbi Yetana Women's group in Bulambuli district trained on seed management. 5) Six pasture production fields established in Bukwo, Kapchorwa, Kween, Bulambuli and Sironko districts 6) 5 farmer groups identified and worked with for both characterisation and seed increment 7) Use of rooted apical cuttings has been recommended for uptake by potato farmers; and preliminary information on management of <i>Phalaris minor</i> generated 8) 5 LSBs were supported during the quarter through trainings, field monitoring, farm clinic and marketing of their seeds; one MSIP was also supported. 9) a total of 4 technologies and management practices delivered to uptake pathways	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221006 Commissions and related charges 221007 Books, Periodicals & Newspapers 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 223004 Guard and Security services 223005 Electricity 223006 Water 224004 Cleaning and Sanitation 225001 Consultancy Services- Short term 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture 273102 Incapacity, death benefits and funeral expenses	<b>Spent</b> 2,250 500 2,750 375 750 1,250 5,000 5,000 2,000 2,325 2,500 425 5,000 6,000 6,625 500 625
			<b>Total</b>
			<b>43,875</b>
			Wage Recurrent
			0
			Non Wage Recurrent
			43,875
			AIA
			0
			<b>Total For SubProgramme</b>
			<b>116,000</b>
			Wage Recurrent
			0
			Non Wage Recurrent
			116,000
			AIA
			0

### Recurrent Programmes

#### Subprogram: 21 Rwebitaba ZARDI

##### Outputs Provided

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**Vote:142** National Agricultural Research Organisation**QUARTER 3: Outputs and Expenditure in Quarter**

<b>Outputs Planned in Quarter</b>	<b>Actual Outputs Achieved in Quarter</b>	<b>Expenditures incurred in the Quarter to deliver outputs</b>	<i>UShs Thousand</i>
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Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

	Item	Spent
- Information on station apple performance evaluation trial documented - On-station and farm trials information generated on Catfish propagation, productivity and survival.	221006 Commissions and related charges	1,250
- On-station and farm trials information generated on Catfish propagation, productivity and survival.	221011 Printing, Stationery, Photocopying and Binding	1,250
- On-station and farm trials information generated on Catfish propagation, productivity and survival.	223004 Guard and Security services	5,000
- On-station and farm trials information generated - Improved capacity of quality coffee seedling production facilities and supply at Rwebitaba ZARDI and Seven (7) community-based seedling systems	223005 Electricity	8,750
- 40 nursery operators trained on germplasm improvement technologies for coffee in the zone- Generating information improved pasture trials on farm & on station.	223006 Water	5,000
- Quality pasture seed produced & pasture samples analysed and demonstrated.	224001 Medical Supplies	25,230
- Quality seed bed prepared for pure pasture seed produced	224004 Cleaning and Sanitation	1,250
- Pasture equipment and tools demonstrated.- Generating information from on farm and onstation trials on bee colony and queen development in the Zone.	227001 Travel inland	5,000
- Maintenance of Apiaries for trainings on queen rearing on station and on farm.	227004 Fuel, Lubricants and Oils	6,000
- Generating information on farm & onstation trials on colonies Genomic Characterization of Xylaria Pathogen infecting tea in Uganda.	228002 Maintenance - Vehicles	6,250
- 100 tea accessions profiled biochemically & later documented		
- 100 tea accessions profiled biochemically & later documented.		
- On farm trials information generated on growth - information on agronomic performance of 14 matooke varieties generated.		
- Information on suitable decapitation heights in banana generated.		
- Suitable pasture legumes for intercropping in bananas determined. Water used paid.		
- 100,000 banana plantlets		
- 7 coffee nurseries maintained		
- 25 coffee mothergardens maintained		
- 60 participants trained in coffee plantation management and propagation techniques		
- 40 coffee nursery operators trained on germplasm improvement technologies coffee in the zone		
- 11. 25,000 plantlets produced and availed to uptake pathway		
12. 1000,000 seedlings raised and made accessible to farmers		
13. Maintenance of on-station and community-based coffee nurseries		
14. 40 coffee nursery operators trained on germplasm improvement technologies coffee in the zone		
15. Improved capacity of quality coffee seedling production facilities and supply at Rwebitaba ZARDI and Seven (7) community-based seedling systems		
16. 7 coffee nurseries maintained		
17. Agro-inputs (fertilizer,media, seedlings seedlings and cuttings		
18. 25 coffee mother gardens maintained		
19. Acquire farm tools, equipment and other field supplies		
20. 60 participants trained in coffee plantation management and propagation techniques		
- 3 maintained acres of Chloris gayana planted on station. - Maintained 3 acres with maize for silage.		
1. Information on efficacy of different management techniques for pests generated		
2. Sequencing of Xylaria DNA		
3. 20 tea accessions profiled biochemically		
4. Growth & yield performance of tea after fertilizer application. Data collected & Analyzed		
5. Information on demand and availability of speciality tea determined		
6. labour for speciality tea maintainance in on-station in the nursery		
7. Genetic diversity of on station & on farm tea clones		
8. information on agronomic performance of 14 matooke varieties generated		
9. Information on suitable decapitation heights in banana generated		
10. Suitable pasture legumes for intercropping in bananas determined		

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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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### Reasons for Variation in performance

		<b>Total</b>	<b>64,980</b>
		Wage Recurrent	0
		Non Wage Recurrent	64,980
		AIA	0

### Output: 04 Agricultural research capacity strengthened

	Item	Spent
- Effective, facilitated and motivated human resources.- Institute property and assets secureRwebitaba ZARDI corporate image and new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted- Fleet, machinery & office equipment managed;	- Rwebitaba physical resources (office and farm, laboratory, staff residence) managed and fully functional, clean, safe and secure.	211103 Allowances (Inc. Casuals, Temporary) 2,250
- Utilities (telephone, water, electricity) managed;	- Rwebitaba ZARDI technologies disseminated to stakeholders Exhibition at Jinja show and world food & other regional shows. - Capacity of 4 groups (40 farmers )in Kyegegwa, Kabarole, Kyenjojo and kamwenge have been strengthend in bean and potato seed production.	221001 Advertising and Public Relations 375
- Institute space and infrastructure (office, laboratory, residence, farm and field) managed;	- Rwebitaba physical resources (office and farm, laboratory, staff residence) managed and fully functional, clean, safe and secure.	221006 Commissions and related charges 1,063
- Cleaning services managed;		221007 Books, Periodicals & Newspapers 375
- Availing staff transport		221009 Welfare and Entertainment 850
		221011 Printing, Stationery, Photocopying and Binding 750
		222001 Telecommunications 375
		223004 Guard and Security services 2,625
		223005 Electricity 2,000
		223006 Water 500
		224004 Cleaning and Sanitation 1,055
		224005 Uniforms, Beddings and Protective Gear 500
		226001 Insurances 133
		227001 Travel inland 1,875
		227004 Fuel, Lubricants and Oils 1,500
		228001 Maintenance - Civil 1,000
		228002 Maintenance - Vehicles 1,025
		273102 Incapacity, death benefits and funeral expenses 500

### Reasons for Variation in performance

		<b>Total</b>	<b>18,750</b>
		Wage Recurrent	0
		Non Wage Recurrent	18,750
		AIA	0
		<b>Total For SubProgramme</b>	<b>83,730</b>
		Wage Recurrent	0
		Non Wage Recurrent	83,730
		AIA	0

### Recurrent Programmes

#### Subprogram: 26 NARO Internal Audit

#### Outputs Provided

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
<b>Output: 03 Internal Audit</b>			
Investigation reports produced	<ul style="list-style-type: none"> <li>• 1 report on Internal Audit value added services to management and the organization as a whole produced</li> <li>• 1 report on Governance, risk and control produced</li> <li>• 1 reports on compliance with applicable laws, rules and regulations produced</li> <li>• 1 report on implementation monitoring function produced</li> <li>• 1 report on human resource management produced</li> <li>• 1 reports on value for money in research programs produced</li> <li>• 1 report on off budget projects audit produced</li> <li>• 2 review routine meetings and report on Risks and mitigation controls at 4 PARI's held</li> <li>• 2 Audit staff Re-tooled on Risk management and reporting</li> <li>• 1 Review report on Risks and mitigation controls at PARI's produced</li> </ul>	<b>Item</b>	<b>Spent</b>
- 1 report on Governance, risk and control produced.		221002 Workshops and Seminars	7,050
- 1 report on compliance with applicable laws, rules and regulations produced.		227001 Travel inland	34,605

### Reasons for Variation in performance

<b>Total</b>	<b>41,655</b>
Wage Recurrent	0
Non Wage Recurrent	41,655
AIA	0
<b>Total For SubProgramme</b>	<b>41,655</b>
Wage Recurrent	0
Non Wage Recurrent	41,655
AIA	0

### Recurrent Programmes

#### Subprogram: 27 National Coffee Research Institute

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

- Coffee wilt disease incidence and distribution in north eastern Uganda;	<ul style="list-style-type: none"> <li>- Design of a second prototype (rotating cylindrical cocoa incubator) with potential to increase fermentation to 95% while reducing fermentation time by 2 days</li> <li>- Project review and implementation modalities completed during inception meeting, Prevalence and incidence maps, disease specimens and soil samples being analysed, field management and biophysical data being entered for analysis.</li> </ul>	<b>Item</b>	<b>Spent</b>
- Coffee wilt disease Specific antibody generated, quantitative PCR designed;		211103 Allowances (Inc. Casuals, Temporary)	1,650
- Bioinformatics analysis outputs;		221007 Books, Periodicals & Newspapers	1,375
- Potential primers selected.		224006 Agricultural Supplies	2,710
		227001 Travel inland	5,274
	227004 Fuel, Lubricants and Oils	1,000	

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: 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>12,009</b>
		Wage Recurrent	0
		Non Wage Recurrent	12,009
		<i>AIA</i>	0

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

50% ICT assets fully functional.

Item	Spent
221008 Computer supplies and Information Technology (IT)	600
221011 Printing, Stationery, Photocopying and Binding	80

#### Reasons for Variation in performance

<b>Total</b>	<b>680</b>
Wage Recurrent	0
Non Wage Recurrent	680
<i>AIA</i>	0

### Output: 04 Agricultural research capacity strengthened

Institute assets and activity sites secure  
Governance committees facilitated,  
Management committees facilitated and  
Staff facilitated (Staff allowances, wages,  
welfare Lunch and break tea provided for  
staff; Fuel and oils for vehicles and  
motorcycles procured; stationery, books,  
newspapers, JournalsProvisions made  
include fuel and oils for vehicles and  
motorcycles procured; stationery, books,  
newspapers, Journals1. Vehicles serviced;  
Office buildings maintained; Compound  
maintained; Office, laboratory and field  
equipment maintained.  
2. Maintain effective ICT facilities;  
Subscription for internet paid;  
3. Utilities paid (water utility, electricity,  
telephone).1. Exhibitions attended;  
2. Staff & stakeholder meetings held;  
3. Technologies disseminated and people  
reached.

- NACORI physical resources and  
infrastructure functional, clean, safe and  
secure.  
- Fully functional advisory and contracts  
committees. - NACORI work force of 43  
facilitated.  
-  
-

Item	Spent
211103 Allowances (Inc. Casuals, Temporary)	2,750
221001 Advertising and Public Relations	625
221006 Commissions and related charges	900
221007 Books, Periodicals & Newspapers	600
221009 Welfare and Entertainment	1,138
221011 Printing, Stationery, Photocopying and Binding	750
222001 Telecommunications	750
222002 Postage and Courier	250
223004 Guard and Security services	2,375
223005 Electricity	3,000
224004 Cleaning and Sanitation	1,000
225001 Consultancy Services- Short term	14,230
226001 Insurances	500
227004 Fuel, Lubricants and Oils	875
228002 Maintenance - Vehicles	1,500
228003 Maintenance – Machinery, Equipment & Furniture	500
273102 Incapacity, death benefits and funeral expenses	638

#### Reasons for Variation in performance

<b>Total</b>	<b>32,380</b>
Wage Recurrent	0
Non Wage Recurrent	32,380

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
		AIA	0
		<b>Total For SubProgramme</b>	<b>45,069</b>
		Wage Recurrent	0
		Non Wage Recurrent	45,069
		AIA	0

### Development Projects

#### Project: 0382 Support for NARO

##### Outputs Provided

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

		Item	Spent
1. Nutrient enhanced maize product commercialized;	4. Instant Maize snack package developed.	211103 Allowances (Inc. Casuals, Temporary)	78,818
2. Maize based product industrial platform and products based enterprises and maize supply chain;	- At NAOSEC, RMI platform specifications developed and fine tuned. In over coming nutritional barriers in efficient utilisation of lablab in livestock diets - NaLIRRI Climate Forage	221002 Workshops and Seminars	132,251
3. Efficiency and timeliness of aflatoxin detection and monitoring;		223005 Electricity	38,196
4. Linked circuit;		224001 Medical Supplies	130,000
5. Capacities enhan		224006 Agricultural Supplies	255,852
Periodic status and performance reports, briefs, bulletins and news letters	1) Buliked seed for 7 lablab lines with high crude protein content (> 24%), low tannin content, and low phytate levels.	227001 Travel inland	30,122
Follow-on Project, NARO MTP, Tools, methodologies RMIS developed	2) 7 lablab lines with high crude protein content (> 24%), low tannin content, and low phytate levels have been established in multi-location trials to generate performance information to aid variety release.	227004 Fuel, Lubricants and Oils	3,000
Performance of Beneficiaries and technologies documented	3) Identified 4 ablab lines with attributes for trampling and grazing tolerance for integrations in pasture systems under extensive grazing systems.		
NARO PMER capacity Enhanced			
Membership to Uganda Eval. A			
1. Climate-smart Lablab and brachiaria varieties with Information and agronomic packages.	4) Capacity of two staff in field monitoring and data collection from breeding blocks enhanced		
2. Dairy and poultry feed formulations	- In commercialization of Nile perch oil products at NAFIRRI, Four protocepts of low-cost high value Nile perch oil products developed.		
3. Historical phenotypic data and NIRS calibrations	In developing technologies for control of red gum Lerp Psyllid and bronze bug in eucalyptus plantations		
4. Institutional and research capacity.	1) 220 seedlings raised and 300 seedlings maintained		
1. Low-cost high value Nile perch oil products	2) 500 Bronze bug eggs produced for rearing C.nockae egg parasitoid 600 Red gum lerp psyllids trapped and sexed for rearing P.bliteus bio-agents		
2. Linkages between fish processors and researchers	3) 480 C.nockae and 500 P. bliteus reared for release		
3. Marketing strategies for Nile perch oil,			
4. Publications and information dissemination (scientific manuscripts, policy briefs, and posters):			
Technologies for control of red gum Lerp Psyllid and bronze bug in eucalyptus plantations			
1. High yielding, early maturing and late blight resistant potato varieties;			
2. Propagation system for rapid multiplication of elite potato clones;			
3. Potato genotypes with heat and drought tolerance.			
- Highland maize varieties improved for resistance to MLN/common diseases;			
- Bio-fortified maize varieties for highland areas advanced and released;			
- Sustainable maize intensification			



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## QUARTER 3: Outputs and Expenditure in Quarter

technologies adopted; - Highland maize seed. Information and technologies of stingless beekeeping generated, packaged and disseminated. (socio-economics, stingless bee species, stingless bee products, bee hive types designed, Performance of stingless bee species)	450 <i>C.nockae</i> and 2800 <i>P. bliteus</i> released against bronzebug and Red Lerp Psyllid respectively in Lenju - Hoima; field monitoring revealed low recoveries (7%) of <i>C.nockae</i> in Soroti but high recoveries for <i>P.bliteus</i> (83%) in Soroti and (90%) in Kiboga districts
1. Yeast starter culture and protocols. 2. Method for extraction of cocoa pulp from fresh cocoa beans; 3. Innovative method for cocoa fermentation and utility model; 4. 2 value added products from cocoa pulp; 5. Cocoa manuals developed and demos.	4) Sampling for resistant Eucalyptus species/hybrids done in Eastern and Western AEZs. Leaf samples from susceptible and resistant Eucalyptus trees collected for genetic identification.
1) Genetic diversity of tea germplasm compared and determined; 2) Biochemical characteristics and cup quality of selected clones compared and determined; 3) Production of specialty teas (green, white, silver, purple, yellow) enhanced; 4) Dissemination	5) Data collection on parasitism levels and dispersal of bio-control agent conducted in 2 AEZs i.e. Eastern (Soroti) and L. Victoria Crescent (Jinja and Kyankwanzi).
1. High yielding, resilient and low-tannin coloured sorghum varieties developed and promoted in food and feed value chains; 2. Training packages, modules and approaches for effective sorghum production technologies developed and disseminated.	Data compiled and application for release submitted on the 6 potato varieties. Seed increase nursery of parents and hybrids established on 1 acre and at germination stage In domestication of stingless bees in Uganda at NALIRRI,
1. Current status of farmer's knowledge, perceptions and practices on the production of management of Tomato and passion fruit fields understood. 2. Improved Tomato lines with multiple resistances to major diseases in Uganda 3. Improved Passion fruit	- 1) SBH-1 and SBH-7 bee hive prototypes evaluated for suitability in domesticating stingless bees.
1. Screen house; 2. Germplasm characterized; 3. Seed multiplication on station.	- 2) Sunction and drain-based methods evaluated for harvesting stingless bee honey, pollen and propolis. Preliminary data is indicative that sunction-based method is better than drain-based method in harvesting stingless bee products.
1. Occurrence/infestation levels mapped 2. Communities integrated in biological control 3. Biological control agents and Socio-economic impacts established 4. Extent of spread reduced to manageable levels 5. Economic functionality of the infested water b	- 3) Three stingless bee species including <i>M. bocandei</i> , <i>M. ferrugenea</i> and <i>P. hilderbrandtii</i> have been evaluated at Nakyesasa. Preliminary data is suggestive that the colonies have stabilised signaling the potential for domestication.
Strategic Fisheries plans, developments shared and effectively reviewed and framework implementation plans generated. Clientele oriented aquaculture development plans implemented.	- 4) Five dissemination materials including 2 banners, 3 brochures and 1 manuscript developed and disseminated
1. Two sorghum varieties with farmer preferred attributes released; 2. 9 farmer groups empowered 3. Agronomic and soil management packages 4. Two Publications in scientific journals	Yeast starter culture and protocols available finalising. Design of a second prototype (rotating cylindrical cocoa incubator) with potential to increase fermentation to 95% while reducing fermentation time by 2 days Partial analysis of the genetic diversity of on station & on farm tea clones was conducted. In development and selection of high yielding sorghum varieties tolerant to multiple stresses in Uganda. and low
1. Milk based products with potential for	

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## QUARTER 3: Outputs and Expenditure in Quarter

clinical improvement of exacerbated cases of stomach ulcers and low body anti-oxidant capacities;	tannin
2. Develop products using targeted isotope labelled analytical procedures and sensory analyses;	1) DUS for six selected lines conducted and NPT Data collected
3. New strategies	2) Two best lines submitted for release
At least, 2,000kgs of maize, 1,000kgs of Beans, 1,000bags of Cassava and 5,000 assorted horticultural seedlings produced.	Six varieties submitted for release.
NARO tick vaccine commercialised	-
Increased fish production in cages and ponds. Information dissemination using on-station demonstrations like the live fish aquarium, crocodile pen fish museum and fish ponds.	-
1. Low-cost diagnostic kit (prototype) that detects TILV in the field.	National Fisheries research and development agenda strengthened by facilitating the advisory committee meeting.
2. Geospatial map and risk factors indicating.	Two sorghum varieties with low tannin leveles submitted to VRC.
3. Socio-economic impact.	In making milk fortification to improve micronutrient status and alleviate common health problems, Information on efficacy of different pharmaceutical compounds against clinical conditions of stomach ulcers, cancer and diabetic conditions is being documented, and Safe and stable milk based neutraceutical products with anti-ulcer, diabetes and cancer properties are developed. So far:
4. Capacity of actors strengthened.	1) Anti-oxidation power of seven pharmaceutical plant extracts has been determined to aid in identification of best extract for fortifying with milk.
Fruit tree seedling and product value chains supported	2). Seven plant
Rice technologies developed, disseminated and accessed	extracts have been profiled for pharmaceutical compounds notably phenolics and flavonoids to aid in determination of appropriate combinations for fortifying with milk.
Diversity of algae species that are efficient in bio filtration determined;	- 5,000 assorted horticultural seedlings maintained.
Efficacy of different algae strains in effluent bio-filtration;	- 300 bags of Cassava distributed to farmers
Protocol for propagating the most suitable strains;	- At NALIRRI, At Efficacy of four candidate anti-tick vaccine molecules against brown ear tick, blue tick and bont legged tick validated on going through on-station clinical trial at Nakyesasa.
Potential of identified algae for biofuel production	- One Ph.D student on vaccinomics supported.
Tree seedling platform supported	(i) Organised and participated in two farm clinics.
	Efficacy of plant N extract as a growth promotor, immunositumulant and prophylaxis against pathogenic Aeromonas hydrophila in nile tilapia. provisiional results showed that Fish in 0.1% treatment had the highest specific growth rate at $0.85\pm 0.1\%$ per day followed by 0% and lowest in 0.5% at $0.64\pm 0.16\%$ per day.
	Survival rate was equal in all treatments at 94.4%.
	Mean weight gain was highest in $0.88\pm 0.12$ g in 0.1% treatment and lowest in 0.5% treatment at $0.65\pm 0.14$ g. The fish

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## QUARTER 3: Outputs and Expenditure in Quarter

in all treatments were in good condition factor.

- Procurement on-going.
  - , At Buginyanya, Demo on best performing NERICA upland rice cultivars concluded.
  - Nerica 4 and 6 varieties suitable for harvest at 75 & 90 days after emergence, respectively under low rainfall (630 mm). Article published in International Journal of plant & Soil Science
  - in coupling dairy circular systems with surface fish production through utilization of Algal based feeds
  - work is still on going.
- Procurement process still on going.

### *Reasons for Variation in performance*

<b>Total</b>	<b>668,239</b>
GoU Development	668,239
External Financing	0
AIA	0

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

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## QUARTER 3: 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. Factors influencing adoption of technologies	- In characterizing the farms, typologies , farmers and other key actors around the PARIs:	<b>Item</b>	<b>Spent</b>
2. Factors that affect farmers' ability to learn		221001 Advertising and Public Relations	227,553
3. Farm typologies and characteristics of adopters and non-adopters	1) Data collection tool finalized and pretested	221002 Workshops and Seminars	279,318
4. Model to enhance the efficiency of the domino effect	2) Online mobile Quantitative data collection on going from communities sorrounding the institute with in 30 kms. Communities with in 10 kms and 20 kms have been covered and 120 questionnaires administered.	221007 Books, Periodicals & Newspapers	20,018
5. Capacity of farmer developed		221008 Computer supplies and Information Technology (IT)	7,835
1. 2nd generation NARO PAH-Safe technologies adapted		221011 Printing, Stationery, Photocopying and Binding	167,051
2. Information on the acceptability of smoked fish processed		222003 Information and communications technology (ICT)	6,986
3. Fish Enterprises engaged in processing/marketing of smoked fish product	- In out-scaling NARO Polycyclic Aromatic Hydrocarbon Safe Smoking Technologies for increased market competitiveness of Fish value chain actors,	227001 Travel inland	64,701
4. Fish entrepreneurs with knowledge on processing and marketing Corporate image enhanced			
- Knowledge and informations products produced and distributed;	- Fabrication of prototype II of second generation NARO PAH-Safe smoking kiln (NAROFIK-3) is almost completed.		
- Patents and Patentable information produced and distributed;			
- Corporate, Scientific, Media and Extension information products produced and distributed.	- 30% of the 2nd prototype of NARO PAH-Safe liquid smoke distiller fabricated.		
	- Partial information on economic viability of the NAROFIK-2 shows that the kiln model had a net return on investment of 0.25 compared to 0.01 of the traditional smoking technology.		
	- Draft business plans for 5 smoked fish processing enterprises from Lakes Victoria, Kyoga and Albert .		
	- Procurement of key fabrication materials iniated as construction of 2nd prototype of NAROFIK-3 D4 is completed .		
	- At NALIRRI, Radio and Television talk shows organised, Design brochures for livestock and fish technologies. At DATP, 1. CKM Strategy popularized to 53 stakeholders including members of the user committee, NARO top management, reps of CGIARs, Makerere University, NGOs and CSOs. 2. During the stakeholder engagement, a structure of the implementation plan was developed.		

### Reasons for Variation in performance

<b>Total</b>	<b>773,461</b>
GoU Development	773,461
External Financing	0

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## QUARTER 3: 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

### Output: 04 Agricultural research capacity strengthened

		Item	Spent
NARO staff supported to enhance competencies	-		
Marine vessel CORMORANT insured	-- Procurement process on-going for purchase of insurance for .marine vessel Hamerkop and MV Ibis. - Marine vessel cormorant needs complete overhaul.	221002 Workshops and Seminars	144,502
1. Laboratory block refurbishment and/or construction	- Procurement on going.	221003 Staff Training	139,042
1. Laboratory block refurbishment and/or construction	- NARO physical resources functional, clean, secure, safe and maintained an enabling office environment	221004 Recruitment Expenses	52,378
2. Establishment of laboratories - Consultancies (technical backstopping)	-- Procurement on going.	221006 Commissions and related charges	130,017
3. Equipment and Tools		221009 Welfare and Entertainment	52,830
4. Furniture and supplies		221016 IFMS Recurrent costs	3,800
5. Training of staff		221017 Subscriptions	27,731
NARO physical resources maintained		223002 Rates	50,000
NARO land surveyed, secured and titled		225001 Consultancy Services- Short term	277,117
		226002 Licenses	26,602
		227001 Travel inland	222,368
		227002 Travel abroad	30,919
		227004 Fuel, Lubricants and Oils	35,034
		228002 Maintenance - Vehicles	55,230
		228003 Maintenance – Machinery, Equipment & Furniture	54,707

### Reasons for Variation in performance

<b>Total</b>	<b>1,302,276</b>
GoU Development	1,302,276
External Financing	0
AIA	0

### Outputs Funded

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

		Item	Spent
International subscription and obligations settled for ASARECA, AFRICARICE, CAB International, International Plant Genetics Research Institute (PGRC), Biodiversity International, GENOMIC (COFFEE), Biosciences eastern and central Africa (BecA).	- Subscription made (part-2) for International subscription (Biodiversity International, ILRI	262201 Contributions to International Organisations (Capital)	121,626
		264101 Contributions to Autonomous Institutions	1,000

### Reasons for Variation in performance

<b>Total</b>	<b>122,626</b>
GoU Development	122,626
External Financing	0
AIA	0

### Capital Purchases

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

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	US\$ Thousand
Functional and rejuvenated PARIs - Contract awarded Contract awarded Construction works near (50%) completion for Infrastructure for fish feeds at Kajansi Construction works near (70%) completion for value addition Infrastructure at Nabuin Construction works near (79.9%) completion for value addition Infrastructure at Bulindi ZARDI Construction works near (75%) completion for Nabuin ZARDI perimeter fence 1. RWEBITABA ZARDI staff houses rehabilitated and habitable; 2. Office blocks rehabilitated; 3. Drying yards/floors rehabilitated; 4. Vehicle/equipment workshop rehabilitated. 1. NASARRI staff houses rehabilitated and habitable; 2. NASARRI office blocks rehabilitated and functional; 3. NASARRI drying yards/floors rehabilitated and functional; 4. NASARRI vehicle/equipment workshop rehabilitated and functional.	At NAROSEC - Tender concluded. - Contract signed with Sion Hardware Ltd. Awaiting completion of civil Works for asbestos removal and roofing. - Procurement process on going - Procurement process on going - Procurement process on going - Procurement process on going Construction works at 40% Construction works at 60% - Procurement on going. - At NAROSEC - Contractor on Board. Work In Progress at 55% (NASARRI office blocks)	<b>Item</b> 281501 Environment Impact Assessment for Capital Works 281502 Feasibility Studies for Capital Works 281503 Engineering and Design Studies & Plans for capital works 281504 Monitoring, Supervision & Appraisal of capital works 312101 Non-Residential Buildings 312104 Other Structures	<b>Spent</b> 40,000 135,000 208,000 68,760 436,946 24,985

### Reasons for Variation in performance

<b>Total</b>	<b>913,691</b>
GoU Development	913,691
External Financing	0
AIA	0

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

Computers (workstations), Firewall, UPSes, patchcodes, External Hard disc, internet data for ISP internet, modems, flash discs, external hard disks soft and hard ware	Procurement process on going Procurement process on going Procurement process on going - Procurement process on going	<b>Item</b> 312202 Machinery and Equipment	<b>Spent</b> 133,758
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### Reasons for Variation in performance

<b>Total</b>	<b>133,758</b>
GoU Development	133,758
External Financing	0
AIA	0

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

# Vote:142 National Agricultural Research Organisation

## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Functional Marine vessel CORMORANT overhauled	Procurement process on going	<b>Item</b>	<b>Spent</b>
- Pre-inspection and Delivery of equipment	Procurement process on going	312202 Machinery and Equipment	580,692
Cage equipments and installation, tractor implements like Loader, Slasher, echo sounder ,radar, fire extinguishers, public address system,money counting machine and other water vessel purchased equipments	Procurement process on going		
Irrigation equipment for one PARI	Procurement process on going		
Assortment of value addition equipment for Abi ZARDI	Procurement process on going		

### Reasons for Variation in performance

<b>Total</b>	<b>580,692</b>
GoU Development	580,692
External Financing	0
AIA	0

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

An assortment of new furniture and laboratory fittings for NACRRRI offices and laboratory	Procurement process on going	<b>Item</b>	<b>Spent</b>
New furniture and assorted laboratory fittings for new offices and laboratory	Procurement process on going	312203 Furniture & Fixtures	12,650

### Reasons for Variation in performance

<b>Total</b>	<b>12,650</b>
GoU Development	12,650
External Financing	0
AIA	0
<b>Total For SubProgramme</b>	<b>4,959,153</b>
GoU Development	4,959,153
External Financing	0
AIA	0

### Development Projects

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

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

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## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
360 tons of maize and soya grain produced and 600 tons of grass hay and silage produced	Maintained livestock feed at Maruzi:	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	20,000
		221002 Workshops and Seminars	7,000
		224001 Medical Supplies	5,000
		224006 Agricultural Supplies	15,000
		227004 Fuel, Lubricants and Oils	25,000

### Reasons for Variation in performance

<b>Total</b>	<b>72,000</b>
GoU Development	72,000
External Financing	0
AIA	0

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

Internet bill for quarter 3 paid

<b>Item</b>	<b>Spent</b>
222003 Information and communications technology (ICT)	2,000

### Reasons for Variation in performance

<b>Total</b>	<b>2,000</b>
GoU Development	2,000
External Financing	0
AIA	0

### Output: 04 Agricultural research capacity strengthened

Institute vehicles maintained	-	<b>Item</b>	<b>Spent</b>
Pay electricity bills	-	223005 Electricity	8,000
Institute assets relocated from Tororo to Nakyesasa and Maruzi	Institute assets relocated from Tororo to Nakyesasa and Maruzi	228001 Maintenance - Civil	6,020
		228002 Maintenance - Vehicles	8,000

### Reasons for Variation in performance

<b>Total</b>	<b>22,020</b>
GoU Development	22,020
External Financing	0
AIA	0

### Capital Purchases

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

-	<b>Item</b>	<b>Spent</b>
-		

### Reasons for Variation in performance

<b>Total</b>	<b>0</b>
GoU Development	0
External Financing	0



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## QUARTER 3: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
		AIA	0
<b>Output: 77 Purchase of Specialised Machinery &amp; Equipment</b>			
	=	<b>Item</b>	<b>Spent</b>
		312202 Machinery and Equipment	124,127
<i>Reasons for Variation in performance</i>			
		<b>Total</b>	<b>124,127</b>
		GoU Development	124,127
		External Financing	0
		AIA	0
		<b>Total For SubProgramme</b>	<b>220,147</b>
		GoU Development	220,147
		External Financing	0
		AIA	0
		<b>GRAND TOTAL</b>	<b>15,644,652</b>
		Wage Recurrent	5,619,667
		Non Wage Recurrent	4,845,684
		GoU Development	5,179,300
		External Financing	0
		AIA	0

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousands</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Program: 51 Agricultural Research

#### Recurrent Programmes

### Subprogram: 01 Headquarters

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

	<b>Item</b>	<b>Balance b/f</b>	<b>New Funds</b>	<b>Total</b>
1. Conduct Budget/Contracts committee meeting;				
2. Status report on the work plan implementation.				
	211103 Allowances (Inc. Casuals, Temporary)	4,350	0	4,350
	221002 Workshops and Seminars	9,250	0	9,250
	221006 Commissions and related charges	58,648	0	58,648
	227001 Travel inland	10,890	0	10,890
	<b>Total</b>	<b>83,138</b>	<b>0</b>	<b>83,138</b>
	<i>Wage Recurrent</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>Non Wage Recurrent</i>	<i>83,138</i>	<i>0</i>	<i>83,138</i>
	<i>AIA</i>	<i>0</i>	<i>0</i>	<i>0</i>

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

	<b>Item</b>	<b>Balance b/f</b>	<b>New Funds</b>	<b>Total</b>
- NARO visibility in public events and Agricultural shows enhanced;				
- Improved technologies, planting materials and agricultural Information materials generated, promoted and availed to stakeholders;	221001 Advertising and Public Relations	115,640	0	115,640
- Strengthen processes for linking research products industry.	221002 Workshops and Seminars	151,029	0	151,029
	227001 Travel inland	140,246	0	140,246
	<b>Total</b>	<b>406,916</b>	<b>0</b>	<b>406,916</b>
	<i>Wage Recurrent</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>Non Wage Recurrent</i>	<i>406,916</i>	<i>0</i>	<i>406,916</i>
	<i>AIA</i>	<i>0</i>	<i>0</i>	<i>0</i>

#### Output: 04 Agricultural research capacity strengthened

	<b>Item</b>	<b>Balance b/f</b>	<b>New Funds</b>	<b>Total</b>
- Pay staff salaries, allowances, staff welfare, staff facilitation and staff retirement and medical benefit				
	211102 Contract Staff Salaries	(1,610)	0	(1,610)
Staff performance plans monitored and appraised				
	211103 Allowances (Inc. Casuals, Temporary)	5,707	0	5,707
- Staff facilitated to undertake/complete post graduate studies (PhD, MSc, Professional certifications)				
	221001 Advertising and Public Relations	9,148	0	9,148
- Students supported to carry out research;				
	221002 Workshops and Seminars	749	0	749
- Short term skills improvement programs undertaken;				
	221003 Staff Training	331	0	331
- Travel support for International engagements.				
	221006 Commissions and related charges	220	0	220
- Financial Management compliance status of 16 PARIs established on quarterly basis;				
	221007 Books, Periodicals & Newspapers	1,736	0	1,736
- Documenting NARO financial transactions into financial statements quarterly, half year and annual accounts achieved;				
	221008 Computer supplies and Information Technology (IT)	17,686	0	17,686
- Internal and External audit exercise conducted.				
	221009 Welfare and Entertainment	30,057	0	30,057
- NARO financial information prepared consolidate/communicate/submitted (NARO financial year budget, Quarterly warranties; NARO wide budgets; Quarterly/Annual financial and supervision reports.				
	221011 Printing, Stationery, Photocopying and Binding	20,845	0	20,845
- Budget monitored				
	221012 Small Office Equipment	2,782	0	2,782
- NARO financial payments concluded.				
	221016 IFMS Recurrent costs	28,229	0	28,229
	222001 Telecommunications	513	0	513

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## QUARTER 4: Revised Workplan

<i>US\$ Thousand</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>			
		222002 Postage and Courier	2,596	0	2,596
- Managing and maintaining fleet & office equipment;		222003 Information and communications technology (ICT)	12,802	0	12,802
- Managing utilities;		223004 Guard and Security services	5,609	0	5,609
- Maintaining office space and infrastructure;		223005 Electricity	64,298	0	64,298
- Managing cleaning services;		223006 Water	13,694	0	13,694
- Availing staff transport		224001 Medical Supplies	4,810	0	4,810
- Managing security		224004 Cleaning and Sanitation	6,385	0	6,385
NARO land assets titled, monitored and secured;		224005 Uniforms, Beddings and Protective Gear	24,008	0	24,008
-NARO Land issues attended to;		224006 Agricultural Supplies	35,309	0	35,309
- NARO Infrastructure (office, laboratory, residence, farm and field) facilities monitored and maintained.		225001 Consultancy Services- Short term	17,544	0	17,544
- MoUs, contracts and SMTAs drafted, reviewed and signed and legal advisory rendered.		226001 Insurances	87,618	0	87,618
- NARO represented in courts of judicature, . in liaison with external legal counsel,		227001 Travel inland	85,349	0	85,349
- Legal advice and guidance to the NARO Governing Council and Management;		227002 Travel abroad	65,896	0	65,896
- Assessment report of PARI levels of Compliance;		227004 Fuel, Lubricants and Oils	71,091	0	71,091
- Annual workshop for NARO Procurement Officers and committees		228001 Maintenance - Civil	44,795	0	44,795
- NARO Procurement Plan;		228002 Maintenance - Vehicles	80,907	0	80,907
- report on Board of Survey for Disposal/ Evaluation of NARO Assets.		228003 Maintenance – Machinery, Equipment & Furniture	49,676	0	49,676
- Top Management (TPM) meetings and other committees activities facilitate;		228004 Maintenance – Other	33,634	0	33,634
- Coordination, lobbying and supervision of research and development conducted;		273102 Incapacity, death benefits and funeral expenses	26,612	0	26,612
- Undertake and participate in engagement with stakeholders, collaborators and dev. partners.		<b>Total</b>	<b>849,026</b>	<b>0</b>	<b>849,026</b>
		<b>Wage Recurrent</b>	<b>(1,610)</b>	<b>0</b>	<b>(1,610)</b>
		<b>Non Wage Recurrent</b>	<b>850,636</b>	<b>0</b>	<b>850,636</b>
		<b>AIA</b>	<b>0</b>	<b>0</b>	<b>0</b>

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousands</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Subprogram: 07 National Crops Resources Research Institute

#### *Outputs Provided*

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

Research activities undertaken and monitored

- 30,000 fruit seedlings produced;
- Fruit mother gardens maintained;
- On station Establishment and evaluation of fruit tree germplasm;
- Highly effective IPDM packages for the control of citrus and mango pests and diseases identified;
- Best management practices for Citrus and mango fruit tree identified and documented;
- Development of the most commercially viable products initiated
- Preparations and designs for undertaking proof of concept for citrus and mango fruit products.

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

NACRRI, new and improved crop technologies, innovations, information and management practices (TIMPS) promoted

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

Governance, Management and Staff facilitated (Staff welfare Lunch and break tea provided for staff; Fuel and oil for vehicles and motorcycles procured; stationery)

1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.
  2. Maintain effective ICT facilities; Subscription for internet paid;
  3. Utilities paid (water utility, electricity, telephone).
- Exhibitions participated
  - Staff & stakeholder meetings held
  - Technologies disseminated and people reached.

Institute assets and activity sites secure

Fiduciary obligations facilitated

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousand</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Subprogram: 08 National Fisheries Resources Research Institute

#### *Outputs Provided*

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

Functional aquarium, on station ponds, cage sites, feed mills, offices, marine vessels and sites.

- New feed with insects as the main source of protein developed and disseminated
- Contracted guard hired and paid

- Study project Vehicles serviced and repaired;
- Fish feed ingredients procured
- Feed mill repaired & maintained
- Developed technologies disseminated;
- Wild parental stocked collected and acclimated in ponds on-station and used for selective breeding;
- Selective breeding programmes for Nile tilapia and the African catfish enhanced.

- Operationalization of the hatchery, ponds and concrete tanks;
- Commercialisation of fish feed production by NaFIRRI at ARDC;
- Selective breeding programmes of Nile tilapia and the African catfish enhanced.

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

- Participate in exhibitions and shows
- Staff & stakeholder meetings held;
- Fisheries technologies disseminated

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

1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.
2. Maintain effective ICT facilities; Subscription for internet paid;
3. Utilities paid (water utility, electricity, telephone).

1. Staff allowances, wages, welfare Lunch and break tea provided for staff provided;
2. Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

institute assets and activity sites secure

Institute visibility and operations enhanced

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousands</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Subprogram: 09 National Forestry Resources Research Institute

#### *Outputs Provided*

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

- Samples of priority tree species collected;
- Genetic diversity and molecular variation determined;
- Database of priority beneficial tree species developed;
- Market and value addition of priority tree species identified.

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

- Exhibitions participated
- Staff & stakeholder meetings held
- Technologies disseminated and people reached.

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

1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.
2. Maintain effective ICT facilities; Subscription for internet paid;
3. Utilities paid (water utility, electricity, telephone).

Institute assets and activity sites secure

Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

### Subprogram: 10 National Livestock Resources Research

#### *Outputs Provided*

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

Processing facility of A. cinerea based protein supplement constructed and equipped at NARO-Nakyesasa

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

NALIRRI new and improved livestock technologies, innovations, information and management practices (TIMPS) promoted

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousand</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Output: 04 Agricultural research capacity strengthened

Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals.

1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.
2. Maintain effective ICT facilities; Subscription for internet paid;
3. Utilities paid (water utility, electricity, telephone).

1. Staff allowances, wages, welfare Lunch and break tea provided for staff provided;
2. Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

Institute assets and activity sites secure

ons participated  
 - Staff & stakeholder meetings held  
 - Technologies disseminated and people

### Subprogram: 13 Abi ZARDI

#### *Outputs Provided*

### Output: 01 Generation of agricultural technologies

Priority crops for northwestern zone collected , characterised, conserved and demonstrated

Materials acquired for cassava composites

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

- Two functional cassava out-grower schemes supported;
- One nutrition platform supported.

Abi ZARDI corporate image and new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted.

### Output: 04 Agricultural research capacity strengthened

Abi ZARDI Human resource motivated

- Functional fleet & office equipment;
- Functional utilities;
- Functional office space and infrastructure;
- Managing cleaning services;
- Functional staff transport
- Effective security services

Abi ZARDI operations facilitated

Institute assets and activity sites secure

Abi ZARDI corporate image and new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousands</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Subprogram: 14 Bulindi ZARDI

#### *Outputs Provided*

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

On-farm research activities monitored

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

Bulindi ZARDI corporate image and new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted.

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

Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

- Institute fleet & office equipment Managed and maintained ;
- Utilities Managed and maintained ;
- office space and infrastructure Managed and maintained;
- Cleaning services Managed and maintained ;
- Availing staff transport;
- Security Managed and maintained.

Provisions made to secure institute assets.

Provisions made include fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousand</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Subprogram: 17 Ngetta ZARDI

#### *Outputs Provided*

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

Undertake technology identification and development in one sub zone

Cost effective Integrated disease and pest management technology for citrus and mango developed

Appropriate SLM technologies adapted

Effective technologies for management of post harvest seed pests and diseases for QDS production developed

Effective management practices for livestock parasite and disease control developed

Fish farming technologies demonstrated

- Survival and field establishment of the shea tree seedlings generated from cuttings, tissue culture and seed enhanced

Local poultry research enhanced

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

Enhanced corporate image, new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted

Stake holders made aware of the various agricultural technologies in quarter 4

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

1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.
2. Maintain effective ICT facilities; Subscription for internet paid;
3. Utilities paid (water utility, electricity, telephone).

Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

Institute assets and activity sites secure

1. Exhibitions participated
2. Staff & stakeholder meetings held
3. Technologies disseminated and people reached.

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousands</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Subprogram: 18 Nabium ZARDI

#### *Outputs Provided*

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

Priority commodities collected , characterised and conserved.

Seroprevalence of Brucellosis in Karamoja region to determine the impact of control strategy completed

Harvesting and transportation of produce from 30 acres

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

Harvesting and transportation of produce from 30 acres

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

1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.
2. Maintain effective ICT facilities; Subscription for internet paid;
3. Utilities paid (water utility, electricity, telephone).

Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

Institute assets and activity sites secured

1. Exhibitions participated
2. Staff & stakeholder meetings held
3. Technologies disseminated and people reached.

### Subprogram: 19 Mbarara ZARDI

#### *Outputs Provided*

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

Germ plasma for Priority commodity for southern range lands collected , characterised, conserved and demonstrated

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousand</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Output: 04 Agricultural research capacity strengthened

1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.
2. Maintain effective ICT facilities; Subscription for internet paid;
3. Utilities paid (water utility, electricity, telephone).

Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

Institute assets and activity sites secure

1. Exhibitions participated
2. Staff & stakeholder meetings held
3. Technologies disseminated and people reached.

### Subprogram: 20 Buginyaya ZARDI

#### *Outputs Provided*

### Output: 01 Generation of agricultural technologies

Germplasm for Priority commodity for eastern lowlands and highlands collected , characterized, conserved and demonstrated

### Output: 04 Agricultural research capacity strengthened

1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.
2. Maintain effective ICT facilities; Subscription for internet paid;
3. Utilities paid (water utility, electricity, telephone).

Governance committees, Management committees and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

Institute assets and activity sites secure

1. Exhibitions participated
2. Staff & stakeholder meetings held
3. Technologies disseminated and people reached.

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousand</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Subprogram: 21 Rwebitaba ZARDI

#### *Outputs Provided*

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

Genomic Characterization of Xylaria Pathogen infecting tea in Uganda.

- 100 tea accessions profiled biochemically & later documented
- 100 tea accessions profiled biochemically & later documented.
- On farm trials information generated on growth

- information on agronomic performance of 14 matooke varieties generated.

- Information on suitable decapitation heights in banana generated.

- Suitable pature legumes for intercropping in bananas determined.

Water used paid.

- 100,000 banana plantlets

- Improved capacity of quality coffee seedling production facilities and supply at Rwebitaba ZARDI and Seven (7) community-based seedling systems

- 40 nursery operators trained on germplasm improvement technologies for coffee in the zone

- Information on station apple performance evaluation trial documented

- Generating information from on farm and onstation trials on bee colony and queen development in the Zone.

- Maintanance of Apiaries for trainings on queen rearing on station and on farm.

- Generating information on farm & onstation trials on colonies

- On-station and farm trials information generated on Catfish propagation, productivity and survival.

- On-station and farm trials information generated on Catfish propagation, productivity and survival.

- On-station and farm trials information generated

- Generating information improved pasture trials on farm & on station.

- Quality pasture seed produced & pasture samples analysed and demonstrated.

- Quality seed bed prepared for pure pasture seed produced

- Pasture equipment and tools demonstrated.

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousand</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Output: 04 Agricultural research capacity strengthened

- Fleet, machinery & office equipment managed;
- Utilities (telephone, water, electricity) managed;
- Institute space and infrastructure (office, laboratory, residence, farm and field) managed;
- Cleaning services managed;
- Availing staff transport

- Effective, facilitated and motivated human resources.

- Institute property and assets secure

Rwebitaba ZARDI corporate image and new and improved technologies, innovations, information and management practices (TIMPS) for the zone promoted

### Subprogram: 26 NARO Internal Audit

#### *Outputs Provided*

#### Output: 03 Internal Audit

	<b>Item</b>	<b>Balance b/f</b>	<b>New Funds</b>	<b>Total</b>
- 8 audit staff attain continuous Professional Development				
- 1 report providing reasonable assurance of financial statements produced	221002 Workshops and Seminars	8,551	0	8,551
- 1 assessment reports on enterprise risk produced	221003 Staff Training	2,800	0	2,800
- 1 report on Internal Audit value-added services to management and the organization as a whole produced.	227001 Travel inland	89	0	89
- Investigation reports produced				
- 1 report on Governance, risk and control produced.				
- 1 report on compliance with applicable laws, rules and regulations produced.				
	<b>Total</b>	<b>11,440</b>	<b>0</b>	<b>11,440</b>
	<b>Wage Recurrent</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Non Wage Recurrent</b>	<b>11,440</b>	<b>0</b>	<b>11,440</b>
	<b>AIA</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Subprogram: 27 National Coffee Research Institute

#### *Outputs Provided*

#### Output: 01 Generation of agricultural technologies

- Coffee wilt disease incidence and distribution map in Western Uganda;
- One antibodies for protein based test, two DNA base primers;
- Highlights on pathogen effector gene and host defensive mechanism;
- One marker recommended for routine use.

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousand</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Output: 04 Agricultural research capacity strengthened

1. Vehicles serviced; Office buildings maintained; Compound maintained; Office, laboratory and field equipment maintained.
2. Maintain effective ICT facilities; Subscription for internet paid;
3. Utilities paid (water utility, electricity, telephone).

Governance committees facilitated, Management committees facilitated and Staff facilitated (Staff allowances, wages, welfare Lunch and break tea provided for staff; Fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

Provisions made include fuel and oils for vehicles and motorcycles procured; stationery, books, newspapers, Journals

Institute assets and activity sites secure

1. Exhibitions attended;
2. Staff & stakeholder meetings held;
3. Technologies disseminated and people reached.

#### *Development Projects*

### Project: 0382 Support for NARO

#### *Outputs Provided*

### Output: 01 Generation of agricultural technologies

	<b>Item</b>	<b>Balance b/f</b>	<b>New Funds</b>	<b>Total</b>
1. Yeast starter culture and protocols.				
2. Method for extraction of cocoa pulp from fresh cocoa beans;	221002 Workshops and Seminars	25,946	0	25,946
3. Innovative method for cocoa fermentation and utility model;	223001 Property Expenses	2,775	0	2,775
4. 2 value added products from cocoa pulp;	223005 Electricity	17,075	0	17,075
5. Cocoa manuals developed and demos.	224001 Medical Supplies	661	0	661
1. Two sorghum varieties with farmer preferred attributes released;	224006 Agricultural Supplies	4	0	4
2. 9 farmer groups empowered	227001 Travel inland	14,846	0	14,846
3. Agronomic and soil management packages	227004 Fuel, Lubricants and Oils	1,928	0	1,928
4. Two Publications in scientific journals				
	<b>Total</b>	<b>63,235</b>	<b>0</b>	<b>63,235</b>
	<i>GoU Development</i>	<i>63,235</i>	<i>0</i>	<i>63,235</i>
	<i>External Financing</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>AIA</i>	<i>0</i>	<i>0</i>	<i>0</i>

Periodic status and performance reports, briefs, bulletins and news letters

Follow-on Project, NARO MTP, Tools, methodologies

RMIS developed

Performance of Beneficiaries and technologies documented

NARO PMER capacity Enhanced

Membership to Uganda Eval. A

NARO tick vaccine commercialised

Rice technologies developed, disseminated and accessed

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousand</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
	<p>1. Climate-smart Lablab and brachiaria varieties with Information and agronomic packages.</p> <p>2. Dairy and poultry feed formulations</p> <p>3. Historical phenotypic data and NIRS calibrations</p> <p>4. Institutional and research capacity.</p>	
	<p>1. Occurrence/infestation levels mapped</p> <p>2. Communities integrated in biological control</p> <p>3. Biological control agents and Socio-economic impacts established</p> <p>4. Extent of spread reduced to manageable levels</p> <p>5. Economic functionality of the infested water b</p>	
	<p>1. Low-cost diagnostic kit (prototype) that detects TILV in the field.</p> <p>2. Geospatial map and risk factors indicating.</p> <p>3. Socio-economic impact.</p> <p>4. Capacity of actors strengthened.</p>	
	<p>- Highland maize varieties improved for resistance to MLN/common diseases;</p> <p>- Bio-fortified maize varieties for highland areas advanced and released;</p> <p>- Sustainable maize intensification technologies adopted;</p> <p>- Highland maize seed.</p>	
	<p>1. Nutrient enhanced maize product commercialized;</p> <p>2. Maize based product industrial platform and products based enterprises and maize supply chain;</p> <p>3. Efficiency and timeliness of aflatoxin detection and monitoring;</p> <p>4. Linked circuit;</p> <p>5. Capacities enhan</p>	
	<p>1. High yielding, resilient and low-tannin coloured sorghum varieties developed and promoted in food and feed value chains;</p> <p>2. Training packages, modules and approaches for effective sorghum production technologies developed and disseminated.</p>	
	<p>Diversity of algae species that are efficient in bio filtration determined;</p> <p>Efficacy of different algae strains in effluent bio-filtration;</p> <p>Protocol for propagating the most suitable strains;</p> <p>Potential of identified algae for biofuel production</p>	
	<p>Information and technologies of stingless beekeeping generated, packaged and disseminated. (socio-economics, stingless bee species, stingless bee products, bee hive types designed, Performance of stingless bee species)</p>	
	<p>Technologies for control of red gum Lerp Psyllid and bronze bug in eucalyptus plantations</p>	
	<p>1. High yielding, early maturing and late blight resistant potato varieties;</p> <p>2. Propagation system for rapid multiplication of elite potato clones;</p> <p>3. Potato genotypes with heat and drought tolerance.</p>	
	<p>1) Genetic diversity of tea germplasm compared and determined;</p> <p>2) Biochemical characteristics and cup quality of selected</p>	

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousands</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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clones compared and determined;

- 3) Production of specialty teas (green, white, silver, purple, yellow) enhanced;
- 4) Dissemination

1. Milk based products with potential for clinical improvement of exacerbated cases of stomach ulcers and low body anti-oxidant capacities;

2. Develop products using targeted isotope labelled analytical procedures and sensory analyses;
3. New strategies

1. Screen house;
2. Germplasm characterized;
3. Seed multiplication on station.

1. Low-cost high value Nile perch oil products
2. Linkages between fish processors and researchers
3. Marketing strategies for Nile perch oil,
4. Publications and information dissemination (scientific manuscripts, policy briefs, and posters):

At least, 2,000kgs of maize, 1,000kgs of Beans, 1,000bags of Cassava and 5,000 assorted horticultural seedlings produced.

Increased fish production in cages and ponds. Information dissemination using on-station demonstrations like the live fish aquarium, crocodile pen fish museum and fish ponds.

Strategic Fisheries plans, developments shared and effectively reviewed and framework implementation plans generated. Clientele oriented aquaculture development plans implemented.

Tree seedling platform supported

Fruit tree seedling and product value chains supported

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

	<b>Item</b>	<b>Balance b/f</b>	<b>New Funds</b>	<b>Total</b>
1. 2nd generation NARO PAH-Safe technologies adapted				
2. Information on the acceptability of smoked fish processed	221001 Advertising and Public Relations	313,779	0	313,779
3. Fish Enterprises engaged in processing/marketing of smoked fish product	221002 Workshops and Seminars	404,000	0	404,000
4. Fish entrepreneurs with knowledge on processing and marketing	221007 Books, Periodicals & Newspapers	28,370	0	28,370
1. Factors influencing adoption of technologies	221008 Computer supplies and Information Technology (IT)	27,638	0	27,638
2. Factors that affect farmers' ability to learn	221011 Printing, Stationery, Photocopying and Binding	63,202	0	63,202
3. Farm typologies and characteristics of adopters and non-adopters	222003 Information and communications technology (ICT)	221,558	0	221,558
4. Model to enhance the efficiency of the domino effect	227001 Travel inland	99	0	99
5. Capacity of farmer developed				
Corporate image enhanced	<b>Total</b>	<b>1,058,647</b>	<b>0</b>	<b>1,058,647</b>
	<b>GoU Development</b>	<b>1,058,647</b>	<b>0</b>	<b>1,058,647</b>
- Knowledge and informations products produced and distributed;	<b>External Financing</b>	<b>0</b>	<b>0</b>	<b>0</b>
- Patents and Patentable information produced and distributed;	<b>AIA</b>	<b>0</b>	<b>0</b>	<b>0</b>
- Corporate, Scientific, Media and Extension information products produced and distributed.				

### Output: 04 Agricultural research capacity strengthened



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousand</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>		
	<b>Item</b>	<b>Balance b/f</b>	<b>New Funds</b>	<b>Total</b>
1. Laboratory block refurbishment and/or construction				
1. Laboratory block refurbishment and/or construction	221002 Workshops and Seminars	6,726	0	6,726
2. Establishment of laboratories - Consultancies (technical backstopping)	221003 Staff Training	8,671	0	8,671
3. Equipment and Tools	221004 Recruitment Expenses	40,325	0	40,325
4. Furniture and supplies	221006 Commissions and related charges	34,572	0	34,572
5. Training of staff	221009 Welfare and Entertainment	1,020	0	1,020
NARO staff supported to enhance competencies	221016 IFMS Recurrent costs	20,170	0	20,170
NARO land surveyed, secured and titled	221017 Subscriptions	15,810	0	15,810
NARO physical resources maintained	223002 Rates	50,000	0	50,000
Marine vessel CORMORANT insured	225001 Consultancy Services- Short term	242,372	0	242,372
	226002 Licenses	26,714	0	26,714
	227001 Travel inland	64,351	0	64,351
	227002 Travel abroad	24,288	0	24,288
	227004 Fuel, Lubricants and Oils	68,107	0	68,107
	228002 Maintenance - Vehicles	84,978	0	84,978
	228004 Maintenance – Other	4,000	0	4,000
	<b>Total</b>	<b>692,106</b>	<b>0</b>	<b>692,106</b>
	<i>GoU Development</i>	<i>692,106</i>	<i>0</i>	<i>692,106</i>
	<i>External Financing</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>AIA</i>	<i>0</i>	<i>0</i>	<i>0</i>

### Outputs Funded

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

	<b>Item</b>	<b>Balance b/f</b>	<b>New Funds</b>	<b>Total</b>
International subscription and obligations settled for ASARECA, AFRICARICE, CAB International, International Plant Genetics Research Institute (PGRC), Biodiversity International, GENOMIC (COFFEE), Biosciences eastern and central Africa (BeCA)	262201 Contributions to International Organisations (Capital)	(26)	0	(26)
	264101 Contributions to Autonomous Institutions	15,816	0	15,816
	<b>Total</b>	<b>15,790</b>	<b>0</b>	<b>15,790</b>
	<i>GoU Development</i>	<i>15,790</i>	<i>0</i>	<i>15,790</i>
	<i>External Financing</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>AIA</i>	<i>0</i>	<i>0</i>	<i>0</i>

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousand</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Capital Purchases

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

Functional and rejuvenated PARIs	Item	Balance b/f	New Funds	Total
1. RWEBITABA ZARDI staff houses rehabilitated and habitable;	281501 Environment Impact Assessment for Capital Works	(30,000)	0	(30,000)
2. Office blocks rehabilitated;	281502 Feasibility Studies for Capital Works	(122,206)	0	(122,206)
3. Drying yards/floors rehabilitated;	281503 Engineering and Design Studies & Plans for capital works	(196,000)	0	(196,000)
4. Vehicle/equipment workshop rehabilitated.	281504 Monitoring, Supervision & Appraisal of capital works	(47,100)	0	(47,100)
1. NASARRI staff houses rehabilitated and habitable;	312101 Non-Residential Buildings	156,535	0	156,535
2. NASARRI office blocks rehabilitated and functional;	312104 Other Structures	5,015	0	5,015
3. NASARRI drying yards/floors rehabilitated and functional;	281501 Environmental Impact Assessment for Capital Works	(30,000)	0	(30,000)
4. NASARRI vehicle/equipment workshop rehabilitated and functional.	281502 Feasibility Studies for Capital Works	(122,206)	0	(122,206)
Improved Infrastructure at Kajansi completed	281503 Engineering and Design Studies & Plans for Capital Works	(196,000)	0	(196,000)
Improved value addition Infrastructure at Nabuin	281504 Monitoring, Supervision & Appraisal of Capital work	(47,100)	0	(47,100)
Improved value addition Infrastructure at Bulindi ZARDI	<b>Total</b>	<b>(233,755)</b>	<b>0</b>	<b>(233,755)</b>
Nabuin ZARDI perimeter fence in place, farm animals and field experiments secured	<b>GoU Development</b>	<b>(233,755)</b>	<b>0</b>	<b>(233,755)</b>
1. NACORI staff houses rehabilitated and habitable;	<b>External Financing</b>	<b>0</b>	<b>0</b>	<b>0</b>
2. NACORI office blocks rehabilitated and functional;	<b>AIA</b>	<b>0</b>	<b>0</b>	<b>0</b>
1. Staff houses rehabilitated and habitable (Bugusege, Kigumba);				
2. Office blocks rehabilitated and functional(Bugusege, Kigumba)				

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

	Item	Balance b/f	New Funds	Total
	312202 Machinery and Equipment	114,697	0	114,697
	<b>Total</b>	<b>114,697</b>	<b>0</b>	<b>114,697</b>
	<b>GoU Development</b>	<b>114,697</b>	<b>0</b>	<b>114,697</b>
LG air conditioner purchased	<b>External Financing</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>AIA</b>	<b>0</b>	<b>0</b>	<b>0</b>

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>US\$ Thousands</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>
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### Output: 77 Purchase of Specialised Machinery & Equipment

	<b>Item</b>	<b>Balance b/f</b>	<b>New Funds</b>	<b>Total</b>
Cage equipments and installation, tractor implements like Loader, Slasher, echo sounder ,radar, fire extinguishers, public address system,money counting machine and other water vessel purchased equipments	312202 Machinery and Equipment	692,996	0	692,996
	<b>Total</b>	<b>692,996</b>	<b>0</b>	<b>692,996</b>
	<i>GoU Development</i>	<i>692,996</i>	<i>0</i>	<i>692,996</i>
	<i>External Financing</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>AIA</i>	<i>0</i>	<i>0</i>	<i>0</i>

Assortment of value addition equipment for Abi ZARDI

- Delivery of equipment
- Installation

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

	<b>Item</b>	<b>Balance b/f</b>	<b>New Funds</b>	<b>Total</b>
New furniture and assorted laboratory fittings for new offices and laboratory	312203 Furniture & Fixtures	80,102	0	80,102
An assortment of new furniture and laboratory fittings for NACRRI offices and laboratory	<b>Total</b>	<b>80,102</b>	<b>0</b>	<b>80,102</b>
	<i>GoU Development</i>	<i>80,102</i>	<i>0</i>	<i>80,102</i>
	<i>External Financing</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>AIA</i>	<i>0</i>	<i>0</i>	<i>0</i>

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

#### Capital Purchases

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

	<b>Item</b>	<b>Balance b/f</b>	<b>New Funds</b>	<b>Total</b>
	312202 Machinery and Equipment	873	0	873
	<b>Total</b>	<b>873</b>	<b>0</b>	<b>873</b>
	<i>GoU Development</i>	<i>873</i>	<i>0</i>	<i>873</i>
	<i>External Financing</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>AIA</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<b>GRAND TOTAL</b>	<b>3,835,210</b>	<b>0</b>	<b>3,835,210</b>
	<i>Wage Recurrent</i>	<i>(1,610)</i>	<i>0</i>	<i>(1,610)</i>
	<i>Non Wage Recurrent</i>	<i>1,352,129</i>	<i>0</i>	<i>1,352,129</i>

# Vote:142

 National Agricultural Research Organisation

## QUARTER 4: Revised Workplan

<i>UShs Thousand</i>	<b>Planned Outputs for the Quarter</b>	<b>Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)</b>			
		<i>GoU Development</i>	<i>2,484,691</i>	<i>0</i>	<i>2,484,691</i>
		<i>External Financing</i>	<i>0</i>	<i>0</i>	<i>0</i>
		<i>AIA</i>	<i>0</i>	<i>0</i>	<i>0</i>