

# **Vote: 110** Uganda Industrial Research Institute

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## **Structure of Submission**

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### **QUARTER 3 Performance Report**

**Summary of Vote Performance**

**Cumulative Progress Report for Projects and Programme**

**Quarterly Progress Report for Projects and Programmes**

### **QUARTER 4: Workplans for Projects and Programmes**

**Submission Checklist**

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## QUARTER 3: Highlights of Vote Performance

### VI: Summary of Issues in Budget Execution

This section provides an overview of Vote expenditure

#### (i) Snapshot of Vote Releases and Expenditures

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

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

(i) Excluding Arrears, Taxes	Approved Budget	Cashlimits by End	Released by End	Spent by End Mar	% Budget Released	% Budget Spent	% Releases Spent
Recurrent Wage	3.720	2.790	2.790	2.788	75.0%	74.9%	99.9%
Recurrent Non Wage	2.197	1.173	1.173	1.136	53.4%	51.7%	96.9%
Development GoU	8.323	3.264	3.264	3.131	39.2%	37.6%	95.9%
Development Donor*	0.000	N/A	0.000	0.000	N/A	N/A	N/A
<b>GoU Total</b>	<b>14.240</b>	<b>7.227</b>	<b>7.227</b>	<b>7.055</b>	<b>50.8%</b>	<b>49.5%</b>	<b>97.6%</b>
<b>Total GoU+Donor (MTEF)</b>	<b>14.240</b>	<b>N/A</b>	<b>7.227</b>	<b>7.055</b>	<b>50.8%</b>	<b>49.5%</b>	<b>97.6%</b>
(ii) Arrears and Taxes Arrears	0.000	N/A	0.000	0.000	N/A	N/A	N/A
(ii) Arrears and Taxes Taxes**	0.000	N/A	0.000	0.000	N/A	N/A	N/A
<b>Total Budget</b>	<b>14.240</b>	<b>7.227</b>	<b>7.227</b>	<b>7.055</b>	<b>50.8%</b>	<b>49.5%</b>	<b>97.6%</b>
(iii) Non Tax Revenue	0.100	N/A	0.000	0.000	0.0%	0.0%	N/A
<b>Grand Total</b>	<b>14.340</b>	<b>7.227</b>	<b>7.227</b>	<b>7.055</b>	<b>50.4%</b>	<b>49.2%</b>	<b>97.6%</b>
Excluding Taxes, Arrears	14.340	7.227	7.227	7.055	50.4%	49.2%	97.6%

\* Donor expenditure information available

\*\* Non VAT on capital expenditure

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

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

Billion Uganda Shillings	Approved Budget	Released	Spent	% Budget Released	% Budget Spent	% Releases Spent
VF:0651 Industrial Research	14.34	7.23	7.05	50.4%	49.2%	97.6%
<b>Total For Vote</b>	<b>14.34</b>	<b>7.23</b>	<b>7.05</b>	<b>50.4%</b>	<b>49.2%</b>	<b>97.6%</b>

\* Excluding Taxes and Arrears

#### (ii) Matters to note in budget execution

Major challenges the institute faces while executing the budget include:

1. Inadequate staffing. UIRI requires UGX 1.2bn for recruitment of high caliber scientist & engineers and 2.4bn retention of its workforce as the institute is currently faced with a very high staff turnover.

2. Inadequate budget. UIRI requires a one off UGX 24.8bn to be able to fast track progress on Research and Development Projects, technology transfer and business incubation

3. Budget release shortfalls. Even with the migger MTEF, UIRI still suffers a shortfall of 1.5bn for the period of Q2 and Q3

4. Low entrepreneurial spirit

5. Slow technology uptake

6. Lack of affordable funding

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- 7.Disconnect in priority planning and financing  
8.unfacilitated business environment for local entrepreneurs

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

<i>(i) Major unspent balances</i>
<i>(ii) Expenditures in excess of the original approved budget</i>
* Excluding Taxes and Arrears

## V2: Performance Highlights

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

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

<i>Vote, Vote Function Key Output</i>	<b>Approved Budget and Planned outputs</b>	<b>Cumulative Expenditure and Performance</b>	<b>Status and Reasons for any Variation from Plans</b>
<b>Vote Function: 0651 Industrial Research</b>			
<b>Output:065101</b>	<b>Administration and Support Services</b>		
<i>Description of Performance:</i>	- Recruit 45 New Employees	-Recruited 1 New Employee	Request for addition wage to enable the institute afford salaries and other employee benefits have not materialized hence the reason for low recruitment. UIRI requires 3.6bn to recruit and retain high caliber scientists and engineers
	-Undertake staff training and skills development	3 Employees left Institute service	
	- Pay off current staff salaries and benefits	-3 staff undertook training and skills development in various fields	
	- Insure Institute Assets Equipment, Vehicles, IT Servers and IT Equipment	- Paied off current staff salaries and benefits of 256 employees	
	Subscriptions Online Membership subscription for 1.AOAC (Association of Analytical Chemists 2.American Public Health Association 3.Science Direct Journal. 4.Laboratory Proficiency Testing Schemes (PTS) 5.Annual Subscription for •PTS, •AgriLASA, •EAC •SADCMET •FAPAS (as a requirement for Accreditation of the laboratory)	- Insured Institute Assets Equipment, Vehicles, IT Servers and IT Equipment  Paid for some subscriptions	
<i>Output Cost:</i>	UShs Bn: 6.018	UShs Bn: 3.924	% Budget Spent: 65.2%
<b>Output:065102</b>	<b>Research and Development</b>		
<i>Description of Performance:</i>	Research and development The different sections engaged in Research and Development shall undertake as follows Production Systems shall 1.Formulate and develop	Research and Development 1.UIRI received US\$ 50,000 under a grant from the Patient Safety Movement which has accelerated development of the device.	With a shortfall of 1.9bn in Q3 a lot of Research and Development work has been deferred such as Stalling of Product Development work due to Lack of chemicals for

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<i>Vote, Vote Function Key Output</i>	<b>Approved Budget and Planned outputs</b>	<b>Cumulative Expenditure and Performance</b>	<b>Status and Reasons for any Variation from Plans</b>
	<p>chicken feeds out of the bio waste of fruit waste</p> <p>2. Formulate and develop Jackfruit jam</p> <p>3. Formulate and develop Pomegranate juice</p> <p>4. Formulate and develop Sugar cane syrup and jam</p> <p>5. Formulate and develop healthy Green tea drinks</p> <p>6. Formulate and develop healthy cocktail (pumpkin, lemon &amp; passion)</p> <p>7. Formulate and develop pumpkin powder</p> <p>Under the Food Laboratory</p> <p>8. Food Laboratory remains committed to undertake food product development, and related research</p> <p>9. Study the stability of curcuminoids and lignans in foods</p> <p>10. Analysis of milk using lactoscan hence the need to procure consumable materials including alkali</p> <p>11. Analysis of juices for TTA, Phhe need to procure consumable materials including indicator</p> <p>12. Testing products under development for temperature, moisture Q1, Q2, Q3 Moisturemeter</p> <p>13. Carrying out milk platform tests he need to procure consumable materials including a base</p> <p>14. 3 types of Breakfast cereals will be made hence the need to procure, production materials including raw materials and packaging</p> <p>15. 4 types of Instant porridges will be made he need to procure production materials including raw materials, packaging, emulsifiers, stabilisers and preservatives</p> <p>16. 2 types of noodles from local food material will be developed he need to procure production materials including appropriate packaging</p> <p>17. 7 gas mixtures for MAP packaged fruits, vegetables,</p>	<p>Development efforts have been focused on the ECGF Infusion Set with strict timelines to achieve the first fully automated prototype by the end of May. We foresee more interaction with clinicians as we continue to seek for funding. The Instrumentation Division is planning a clinical pilot in June for the ECGF Infusion Set. We are currently seeking FDA Approval in the USA to pilot at Intermountain Healthcare and CE mark certification in Europe. Neonatal and Maternal Healthcare Project/R&amp;D of two medical devices/Status of Medical Equipment in the country/ possibly publishing papers on the status/Calibration, Repair and Maintenance Project for Medical Equipment/ ( Partners involved: College of Health Sciences, Makerere University Kampala and Oxford BioHorizons Ltd. UK, Columbia University in New York), Ernest Cook Ultrasound Research and Education Institute (ECRUEI) The Instrumentation Division received a 1st Place Innovation Award and US\$50,000 from the Patient Safety Movement Foundation in Dana Point, California on 22nd January 2016 for the Electronically Controlled Gravity Feed Infusion Set Project. Following this new development the Division has hired a consultant Systems Engineer from Germany and a team from Design without Borders to work on the casing design of the Infusion Set. We have also engaged Dr. Robert Opoka on the project in addition to Dr. Sabrina Kitaka and a Nurse from the Children's Acute Care ward. A team of students from Columbia University are also scheduled to visit UIRI in June under the Venturewell Grant. We have also submitted 4 grant applications which we are</p>	<p>analyzing the raw materials resulting from Budget Shortfall in the quarter or pending payment for subscription annual subscriptions like the AgriLASA membership among others</p>

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	meats, bakery products, dairy products will be developed the need to procure raw materials and appropriate packaging	waiting to here back from is ongoing	
	18.5 levels of Production of pectin the need to procure production materials	2. Research and Development of Agriculture based projects - Smart Drip Irrigation Project Design and Development of a Smart Drip Irrigation System. The Division is currently in advanced prototype design stages for the Smart Drip Irrigation System. Project Brainstorming sessions are held weekly on Wednesday mornings. The Instrumentation Team has split into two teams for the Electronics and Mechanical Design of the project to accelerate progress. The Division has been in consultation with Davis and Shirliff and is more recently going to engage iFDC an NGO focused on improving productivity along the Agricultural Value Chain. On-going ~US\$6,500 ( funding required)	
	19. Develop breakfast cereals, instant porridges, nooddles from local foods like cassava and sweet potato		
	20. Improve on food packaging technologies for meats, fruits, vegetables, baked products using modified atmosphere packaging (MAP) as a preservation procedure that doesn't use chemicals		
	21. Producing pectin from fruit wastes, extraction of plant and animal materials that can be used as ingredients during product development.		
	22. Enable physical preservation of fluid foods at laboratory level before packaging		
	23. Fast and efficient drying of food products during product development		
	Microbiology shall develop 3 Products	Internal Projects (8): Automatic indoor/outdoor Lighting System, Solar Fruit Dryer, Keypad based door lock system, Solar Powered Egg incubator, Weighing Scale, Automatic Voltage Regulator, Multi-purpose Temperature control monitoring, Fingerprint and pin code based security access control system. Hardware design and analysis, Firmware design, simulation and prototyping is ongoing for these team oriented projects, electronic components have been received, however, they will need to be replenished as prototyping, hardware and software integration continues. Development of these projects are momentarily on hold as the focus is on fast tracking the ECGF infusion set. ~US\$13850.37 (worth of goods has been received as of Nov 2013) Awaiting procurement for US\$ 20,000 requisition (see above) to further develop projects.	
	24. Research & development of shea/Bentonate Anti-Acne, anti-wrinkle creams, shampoo, face scrub, toner & moisturizer 1st, 2nd, 3rd and 4th Quarters Chemicals & reagents for cosmetics formulation		
	25. Research & development of an antibacterial soap 1st, 2nd, 3rd and 4th Quarters Chemicals & reagents for cosmetics formulation		
	26. Research & development of Spirulina 1st, 2nd, 3rd and 4th Quarters Laboratory consumables Research projects applied shall include		
	27. Design & Dev't of production process of an antibacterial herbal remedy 1st, 2nd, 3rd and 4th Quarters Materials & Equipment		
	28. Field trial of Aflatoxin Biosensor in Arua 2nd Quarter Materials, Equipment		

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	and subsistence allowances Research Projects shall be initiated shall include 29.Pro-Lactic acid production from cassava1st, 2nd, 3rd and 4th QuartersMaterials, Equipment and subsistence allowances 30.Bioplastics development 1st, 2nd, 3rd and 4th QuartersMaterials, Equipment and subsistence allowances 31.Biosurfactants for environmental bioremediation1st, 2nd, 3rd and 4th QuartersMaterials, Equipment and subsistence allowances 32.Biosensors and Bioengineering1st, 2nd, 3rd and 4th QuartersMaterials, Equipment and subsistence allowances Chemistry laboratory 33.Routine Laboratory analysis, Research & Development 34.Procurement of Laboratory standards chemicals, Reagents, Apparatus and other lab materials. 35.Procurement for Soxtec system (Fat content), Fibertec system(fiber content) & Kjeltex system (protein) 36.No. of product analyses undertaken1000Routine analysis of External and Internal laboratory samples, food, juice, water & waste water, drugs, minerals, soap, Detergents, cosmetics, natural products and petroleum products The Chemistry Laboratory shall undertake five product formulations 37.Formulation of shoe polish, 38.car polish, 39.sanitizers, 40.match box, and 41.Anti-microbial agents using local raw materials in Uganda The Chemistry Laboratory Research projects shall include. 42.Antimicrobial activity of banana flowers extract against bacteria 43.Application of zeolites in	3.Uganda Industrial Research Institute was awarded a certificate by Uganda Investment Authority for efficient Briquette and Hand Paper making technologies 4.Research is ongoing in a)Production of biodegradable bags from banana fibres and waste paper b)Production of cheap packaging bags for restaurants by folding and gluing of corrugate medium paper produced from trees c)Paper and other related products production from old boxes by recycling from old boxes and banana fibers 5.Researches for undergraduate students from Busitema University in production of packaging paper from maize ears, maize stems and waste paper is ongoing. 65 experiments successful conducted. 356 test samples made. The students are defending their results to their supervisors 6.Development of Whey Drinks from wastes from cheese processing -still on going 7. Formulation and research work on production of sand dusted pots involving Body formulation, Milling, casting, firing, decoration tested and attained good results. 3 pots have so far made 8.200 boxes of dustless chalk were produced. However production is limited by lack of Plaster mixer and casting machine 9.Research on Button Mushroom: Only Oyster variety of mushroom can now be cultivated for commercial purpose in Uganda. All other varieties on market are only imported into the country and tagged expensively. Against this background, the Mushroom Technology Section at UIRI, focuses majorly on research in	

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	removal of heavy metals in wastewater.	different globally economical mushroom varieties like Button, Shiitake, straw and Ganoderma mushrooms species. The development of the appropriate substrate formulations of these other commercial varieties will help in introduction of these mushroom varieties to our Ugandan society hence creating employment, income generation, global trading, and improvement of the food basket and the livelihood of our local people. Experimental research was done, various substrate formulations were developed and used, in some cases different available materials were tested and growing protocols developed. Yield was registered in only two formulations out of the five developed formulations	
	44.Isolation of curcuminoids from turmeric plant.	10.5 sugar bowls ,9 wall hangings, 6 tea cups were produced by Hand forming using potter's wheel	
	45.Commercialization of flavored clay pot water	11.Test work on different plaster formulations designing and making Models and molds for different products were successfully produced.	
	The Materials and Minerals Engineering Division	12.Analyzed 75 laboratory samples for Chemical composition and certificates were issued	
	The Materials and Minerals Engineering Division looks to innovate the following new technologies	13.Microbial analysis was undertaken on 86 laboratory samples and certificates were issued.	
	46.Production of recycled Glass Products	14.4 on-going Research projects in the following areas include:	
	47.Production of concrete Tiles and Pavers	a)Antimicrobial activity of banana flowers extract against bacteria	
	48.Production of plastic Recycled Products	b)Application of zeolites in removal of heavy metals in wastewater.	
	49.Undertake the physical and chemical analysis of the different mineral ores used in the section	c)antimicrobial and anti-oxidant studies of essential oils from exotic plants	
	50.Refinement of production of cups, plates and saucers	d)Formulation of sensitizers from aloe vera plant	
	51.Undertake R&D in Bentonite and Allied requiring chemicals & Reagents	15.Carried out routine Food, Chemistry and Microbiology Laboratory work	
	52.Undertake R&D in Artificial Ceramic Corals in fish breeding		
	53.Undertake R&D in Gemstone cutting technology this requires equipment & Consumables		
	54.Continue with R&D in dustless Chalk making from Gypsum ore		
	55.Undertake R&D in Glass recycling Technology		
	56.Continue with R&D in Water filtration		
	57.Continue with R&D in concrete tiles and Pavers		
	58.Undertake R&D in Production of mineral oxides		
	59.Undertake manufacturing of adhesives		
	Fruits and Vegetables department shall develop seven new products		
	60.Development of chicken feeds out of fruit waste		
	61.Development of jackfruit jam		
	62.Development of pomegranate juice		
	63.Development of sugar cane jam and syrup		

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	<p>64. Development of a healthy green tea drink</p> <p>65. Development of a healthy cocktail (pumpkin, lemon &amp; passion)</p> <p>66. Development of pumpkin powder</p> <p>Bamboo</p> <p>67. Development of Biochar fertilizer now on market trail especially National Forestry Authority and Tea Growers. The developed bamboo fertilizer products shall be analyzed monthly in different laboratories for product refinement</p> <p>68. Two Products (Bamboo tooth Picks and Bamboo Mats) to be developed up to commercial stage</p> <p>69. Toothpick and mat production, packaging and market testing, process and product refinement shall be undertaken. Bamboo, assorted processing chemicals and materials, packaging material to be procured</p> <p>70. There shall be installation of Bamboo processing equipment, test running and commissioning of the Kabale Bamboo Processing Unit</p> <p>71. There is a requirement to monitor &amp; evaluate the Kabale Bamboo Process Department</p> <p>ICT</p> <p>72. UIRI shall undertake development of Mobile application platforms and testing mobile phones services for instance equip of staff with mobile apps development skills and providing SMS Messaging Development or equipping individuals with SMS software development skills</p> <p>Button Mushroom</p> <p>73. To further the research on Button Mushroom there is need to procurement of the following consumables, Millet grains, Urea, Muriate of potash (MOP),</p>	<p>16. Lactic acid production from cassava: The production process is a simultaneous saccharification and fermentation (SSF) converting cassava starch to lactic acid in the same batch. Inoculum of selected bacteria (isolated at UIRI Biotechnology Centre) is added along with the substrate degrading enzymes (from Kess Biotech Inc, an incubatee at the centre). This “green technology” does not only reduce the cost of production by avoiding high energy consuming biomass liquefaction, but also leads to higher productivity by providing adequate sugar release and high conversion rate of 60% or more! It is moreover a simple process that can be done at microscale mimicking the traditional fermentation of tonto (a local brew). About 6kg of cassava on fresh weight basis would yield 1L of lactic acid of 88% concentration which would cost 150,000/shillings or less at retail price. At the current retail market price, a heap of cassava which is about five kilograms costs 2000/= shillings.</p> <p>17. Two nutritional supplements from pawpaw flesh and seeds have been developed</p> <p>18. A process for extraction of papain enzyme has been developed</p> <p>19. Completed fabrication of a 1000Kg feed mixer, horizontal type</p> <p>20. Completed fabrication of a 75kg soya steamer and successfully tested</p> <p>21. Completed fabrication of a 10kg Peanut butter machine</p> <p>There is a lot of vigilance with the Research and Development work in the area of food product development, reverse engineering, technology development, renewable energy, instrumentation design solutions</p>	



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<i>Vote, Vote Function Key Output</i>	<b>Approved Budget and Planned outputs</b>	<b>Cumulative Expenditure and Performance</b>	<b>Status and Reasons for any Variation from Plans</b>
	Supper phosphate, Insecticide (Dimilin ), Calcium carbonate, Wheat straw, Rice straw, Spawn bags, Wheat bran, Calcium ammonium nitrate (CAN), Gypsum, Black polythene bags, Big saucepans (stainless steel), Bench wipers, Cloths wipers, Parafilm' M' Roll, Bunsen burner + Small gas cylinder 74. Wheat grains, molasses, Plastic containers for sterilization of substrate in the bunkers, Tapline 30x30 m long, Bags of rice grains for spawn production Water spraying pipe with a pump, Water pumper from the drainage for recycling water at the composting yard	and provision high quality services with exacting standards of scientific analysis and skill, and dedicated personalized service creamed with competitive pricing. This has led to enhanced business image to the extent that nowadays the UNBS has informally instituted a policy that if we give a positive certificate to any client they honor our result! Accordingly many of our clients have improved their products' quality and accessed space on exclusive supermarket shelves reporting increased sales.	
<i>Performance Indicators:</i>			
No. of value added products developed for industrialisation to reduce post harvest losses.	40	43	
No. of research projects initiated	60	65	
No. of product analyses undertaken for quality checks	55	409	
<i>Output Cost:</i>	US\$ Bn: 1.863	US\$ Bn: 0.865	% Budget Spent: 46.4%
<b>Output: 065103</b>	<b>Industrial and technological Incubation</b>		
<i>Description of Performance:</i>	1. Expansion of Direct Access Distribution Strategy for Newcastle Vaccine. Following the successful completion of the novel pilot distribution mechanism in Eastern Uganda, The vaccine is to be launched nationwide. It will involve initially targeting distribution in 50 districts in the Northwest and Eastern parts of the country. In 2015-2016 the vaccine department intends to implement the lessons learnt in the pilot distribution area in eastern Uganda to launch KUKUSTAR, the vaccine against Newcastle disease, nationwide to be accessible to all poultry farmers. 2. There are currently 13 interested in Materials and Mineral Engineering Business incubation who shall be	1. Under the Essential Oil Project (Natural Plant Products), 3,000 Rose geranium cuttings and 6,000 root splits of lemon balm rooted well and are due for planting during the August September session 2. Planting material for Lemon grass, Cinammon and Rosemary is to be introduced in April rains since those oils are being sought after in the local market 3. Briquette and packaging bags making from agricultural wastes in was undertaken in Kamengo-Mpigi District. This involves Carbonizing, crushing, mixing, pressing, drying and packaging of briquettes. 4. 1,000 gift bags from cotton and waste paper are supplied to Rwanda Air per month by an incubatee 5. 500 gift bags from cotton and	Shortfall in budget release for Q3 has greatly hindered the progress of the Business and Technological Incubation Program

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	<p>accessed aimed to create 30 jobs</p> <p>3.Establishing one dairy incubation centre in Ntungamo</p> <p>4.Monitoring and evaluation of virtual incubatees</p> <p>5.Consumables for bamboo plant to commercialize toothpick and mats production lines in Kabale and at UIRI</p> <p>6.Support towards sustainability &amp; improvement of virtual incubatees' production capacity</p> <p>7. Take on four new incubatees under Production Systems i.e USSIA, IEN, Tropical Connections, IKN Holdings</p> <p>8.2.Trained incubateesApproval of requisitions for training materials</p> <p>9.3.New commercialised productsProcurement of training materials</p> <p>10.4.Increased production capacity in the juice pilot plant</p> <p>11.5.New job opportunitiesCommercialisation of new products for incubatees</p> <p>12.Initiation and approval of a requisition for a batch pasteuriser</p> <p>13.Procurement of a batch pasteuriser</p> <p>14.</p> <p>15.Installation of the batch pasteuriser</p> <p>16.Improved product qualityRefinement of existing products for incubatees i.e pineapple juice,pineapple jam,chillie sauce,mango cordial,mango juice,mango &amp; orange cocktail,tropical cocktail,passion,orange juice</p> <p>17.Provide technical support for refinement of existing incubatee products</p> <p>18.undertake incubateemonitoring and evaluation of incubatees(both in-house and virtual)</p>	<p>waste paper are supplied to Igongo Cultural Centre Mbarara per month by an incubatee</p> <p>6. Premier dairies production at per month and other small scale incubates producing a range of milk products</p> <p>7. Bio ethanol project is being initiated</p> <p>8..11 incubates under meat technology producing a range of beef, chicken, pork, rabbit, fish and sea food products</p>	
<i>Performance Indicators:</i>			
No. of technologies deployed with incubatees	25	20	
No. of SME's incubates taken on	50	28	
<i>Output Cost:</i>	US\$ Bn: 1.702	US\$ Bn: 0.689	% Budget Spent: 40.5%

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<b>Output: 065104</b>	<b>Model Value Addition Centre Establishment</b>		
<i>Description of Performance:</i>	<p>Establishment of Model Value Addition Centers has proved to impact on poverty reduction. The Established Model Value Addition Centers stimulate increased farm production. The farmers' area assured of ready market where they can generate some income. The centers assist on reduction of post-harvest losses as what is produced is processed. The Model Value addition centers are a skills and training hub for capacity building in farm production, post-harvest handling, processing and creation of employment and hence poverty reduction</p> <p>The following Model Value Addition Establishments are at different stages as detailed here below</p> <ol style="list-style-type: none"> <li>1. Establish a functional Fruit juice and water processing facility in Kawempe by modification of an existing processing facility</li> <li>2. Development of new products for the centres and training of production staff</li> <li>3. Establish a Model industry to manufacture the polylactic acid and make bioplastics; and cosmetics centre 1st, 2nd, 3rd and 4th Establish infrastructure for pilot plants and recruit personnel to manage the centres</li> <li>4. Maziba Winery Project, Kabale Establishment of a complete functional processing winery plant whose construction work included a sub structure, walling and roofing, sanitary facilities, internal and external finishes, external works have been completed and handed over. Defects liability period supervision is underway.</li> <li>5. Establishment of a Model Dairy Farm in Ntungamo The establishment of a model</li> </ol>	<p>The following are rate of completion and status of Value Addition Centers being established by the Institute</p> <ol style="list-style-type: none"> <li>1. Arua Savoury Classic meat processing Plant is 70% complete</li> <li>2. Karubuga Model Dairy Farm in Ntungamo is 70% complete</li> <li>3. Essential Oils Pilot Project, Luweero is 70% complete</li> <li>4. Refurbishment of UIRI Chemistry Laboratory is 85% complete</li> <li>5. Fruit juice processing plant in</li> <li>6. Ntungamo for Itojjo fruit growers Association is 80% complete</li> <li>7. Proposed Peanut paste Processing plant in Soroti has not yet started</li> <li>8. Rehabilitation of Esia mixed farm in Adjuman has not started</li> <li>9. MAFFACO fruit processing facility for Masindi Fruit is being assessed</li> </ol>	<p>There has been a huge set back on fast tracking progress on establishing value addition centers due to the Q3 shortfall in cash release</p>

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Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
	<p>farm entails constructing a Dairy shade, Feeding shade, Chaff Cutter shade, Milk collection area.</p> <p>Site has been handed over to the Contractor for commencement of work.</p> <p>6.Extra works at Essential Oils Pilot Project Luweero Construction of allowed variation for additional scope to include office premises and wet areas is underway at 90% of works complete.</p> <p>7.Construction of a nursery shed at Essential oils Luweero Construction of a nursery shed at Luweero Essential Oils is underway. Civil works Construction were completed. Welding works are pending</p> <p>8.Proposed Fruit juice processing plant in Itojjo A functional fruit juice processing plant whose works include a substructure, walling and roofing, internal and external finishes is underway. Construction is ongoing and the substructure is complete</p> <p>9.Proposed Cheese processing plant at Rubale Ntungamo District Works include to design for construction of the Cheese Processing Facility is underway. Site reconnaissance, to assess the nature of land, was done by the UIRI technical team on 17th Sep 2014. Bills of Quantities have been prepared.</p> <p>10.Proposed Soap processing plant in Kabale Industrial Area for Yildi enterprisesis underway. Works to include Design for construction of the facility is underway. Site reconnaissance, to assess the nature of land, was done by the UIRI technical team on 17th Sep 2014. Preliminary estimates have been prepared.</p> <p>11.Proposed rehabilitation of Esia mixed farm, Adjumani Rehabilitation of the facility and activity scope to be discussed with UIRI Management</p>		

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
	<p>12.Tile manufacturing facility in Wakiso Designs and Bills of Quantities have been prepared for establishment of a manufacturing facility for Tiles in Wakiso</p> <p>13.Proposed Peanut Processing Plant in Soroti District The design is complete and preliminary estimates for a complete functional Peanut Paste Processing Plant in Soroti District have been prepared. A report has been submitted for approval.</p> <p>14.Development of a Fabrication Lab for small scale manufacturing of circuit boards and casings for complete prototypes. A Project proposal is currently being developed. A start-up meeting was convened inviting interested stakeholders for the project.</p> <p>15.Internal Painting of selected Buildings at UIRI Design and BOQ's and implementation supervision of Internal painting of the plants are meant to improve the sanitary conditions of the facilities to enable them attain UNBS inspection standards. External painting is to improve the aesthetics and general outlook of the UIRI campus. Painting of toilets at the conference hall is complete. Painting in ceramics is on going</p> <p>16.Proposed Chemistry Laboratory Refurbishment Model Chemistry A Model Chemistry laboratory to facilitate the research activities currently being undertaken is ongoing. Contractor was procured. Construction work scheduled to begin in Q3.</p> <p>17.Proposed Renovation of TDC Engineering workshop floor A hard wearing suitable floor surface for activities being carried out on the workshop is required for reinforcement of</p>		

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Highlights of Vote Performance

<i>Vote, Vote Function Key Output</i>	<b>Approved Budget and Planned outputs</b>	<b>Cumulative Expenditure and Performance</b>	<b>Status and Reasons for any Variation from Plans</b>
	workshop floor surface with terrazzo. Renovation works in the workshop floors commenced and are underway.		
<i>Performance Indicators:</i>			
No. of products up-scaled and commercialized by the centres	35	28	
No. of model value addition centres at 75% completion	1	3	
No. of local raw materials developed and populated in the scientific databases	45	34	
<i>Output Cost:</i>	US\$ Bn: 0.619	US\$ Bn: 0.199	% Budget Spent: 32.1%
<b>Output: 065105</b>	<b>Facility Repair and Maintenance</b>		
<i>Description of Performance:</i>	<ol style="list-style-type: none"> <li>1.Repair and maintenance of machinery and equipment for a well maintained pilot plant</li> <li>2.Procurement and upgrading of the Existing Wastewater Treatment Plant with Advanced Immobilized Cell Reactor (AICR) Smart Treatment Plant (STP)</li> <li>3.Establishment of a model wastewater treatment plant for training.</li> <li>4.Cleaning materials &amp; protective wear</li> <li>5.Fuel For the Boiler and Standby Generator</li> <li>6.Repair of Microwave Digestor(Multiwave 3000)</li> <li>7. Repair the laboratory Refrigerator(EkoFrigoLab 1500) and Freeze Dryer (Telstar LyoAlfa 6)</li> <li>8.Undertake routine preventive maintenance for HPLC (2), AAS, CHN, and Uv/visible Spectrometer</li> <li>9.Undertake calibration of Analytical balance, 2 ovens, 2 muffle furnace, water bath &amp; pH meter</li> <li>10.Repair of Food Laboratory fridges by replacing the funs and utilise the fridge for chilling/freezing samples</li> <li>11.Repair of the centrifuge to separate sample components using the gabber centrifuge</li> <li>12.Procurement of testing</li> </ol>	<p>There is continuous effort and planning to make sure that all UIRI equipment, machinery and civil infrastructure is maintained</p> <p>1.Repair and maintenance of electrical and electronic equipment on the UIRI campus. Based on client demand, the Instrumentation Team continuously works on several electrical and electronic faults in equipment around the UIRI campus. This quarter the division was able to troubleshoot and repair several items across Mechanical Engineering, Chemistry, Bakery, Security, Paper, Ceramics, Multimedia, IRC, Microbiology and Instrumentation. Most faults have been successfully repaired, those that haven't usually require specific parts that take time to procure (On-going)~20,000,000UGX (funds required to continue this activity)</p> <p>2.The HPLC was serviced and is operational</p> <p>3.The analytical pH meter, drying ovens and water bath were calibrated by Uganda National Bureau of Standards</p> <p>4.The HTDS- PULSE Health Care experts serviced the HPLC in the Chemistry Laboratory</p> <p>5.Maintenance contract for service and repair of</p>	<p>Same machine and equipment repairs were not undertaken due to the shortfall in the Q3 Release</p>

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Highlights of Vote Performance

<i>Vote, Vote Function Key Output</i>	<b>Approved Budget and Planned outputs</b>	<b>Cumulative Expenditure and Performance</b>	<b>Status and Reasons for any Variation from Plans</b>
	<p>equipment and kits for wastewater treatment plant. To ensure efficient and effective performance of the plant.</p> <p>13. Construction and installation of new washrooms/toilet for the pilot plant To improve on the hygiene and congestion during time of training</p> <p>14. Drilling and installation of the underground water. To cut down the water bills by 60% from NWSC and the money is used for other development.</p> <p>15. General servicing and repairs of Pilot plant</p> <p>16. 3rd phase water overhaul (internal piping system)</p> <p>17. To replace the corroded old pipe and improve on the pipe layout.</p> <p>18. Maintenance tools &amp; equipment To improve on work efficiency and service delivery.</p> <p>19. Maintenance works To maintain better performance of the utility</p> <p>20. Professional capacity development training To improve on skills and knowledge for better performance.</p> <p>21. UIRI facilities shall require fumigation services,</p> <p>22. Cleaning Materials to include fuel for mauler, toilet paper, soap(liters), detergents, toilet brushes, brooms, contracting rubbish disposal, towels, tarpaulins</p> <p>23. First Aid Boxes for the four pilot plants</p> <p>24. Microbiology and Biotechnology Equipment calibration</p> <p>25. Equipment service and preventative maintenance</p> <p>26. Chemistry civil works Repairs &amp; remodeling</p> <p>27. General plant clean up and maintenance of the Materials and Mineral Engineering Division</p> <p>28. Functional machinery and equipment</p> <p>29. Repair and maintenance of machinery</p>	<p>Microbiology laboratory equipment was implemented to be undertaken by Palin Diagnostics. Repair and maintenance of Microbiology laboratory equipment was supervised</p> <p>6. Replacement of broken taps in the Dairy processing plant</p> <p>7. Replacement of faulty water valves in Dairy pilot plant</p> <p>8. Unblocking of drainage in the pilot plant</p> <p>9. Completed replacement of broken taps with new ones in the Dairy processing plant</p> <p>10. Completed repair of broken supply water pipe to the Business Development Center</p> <p>11. Completed replacement of water valve UIRI's guard resident</p> <p>12. Completed replacement of tap at Administration Block</p> <p>13. Completed servicing of 250Kva Generator</p> <p>14. Completed replacement of cables for the main power supply line</p> <p>15. Completed servicing Administration block generator Set,</p> <p>16. Completed repair of the dough mixer machine in bakery plant</p> <p>17. Completed replacement of the parking gland and worn out Rubber shock absorber on coupling for the water pump in the chillers, dairy section</p> <p>18. Completed replacement of oil seals of the sausage machine in meat plant.</p> <p>19. Completed repairs on the Bowl Cutter machine</p> <p>20. Complete furnishing Dericorp office</p> <p>21. Completed fabrication of Laboratory cabinet for Mega Milk (Incubatee)</p> <p>22. Completed fabrication of shelves for Micro biology enzyme production</p> <p>23. Completed Construction of goat shelter for Ntungamu Farmers Association</p> <p>24. Completed other fabrications</p>	

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Highlights of Vote Performance

<i>Vote, Vote Function Key Output</i>	<b>Approved Budget and Planned outputs</b>	<b>Cumulative Expenditure and Performance</b>	<b>Status and Reasons for any Variation from Plans</b>
	30.Repair of Kilns, Extruder and Ball mills of the Materials and Minerals Engineering Division 31.Well maintained pilot plant and improvement of civil works 32.Renovation of PCB Facility into a Fabrication Laboratory Kampala and equipment procurement. This shall require renovation of PCB lab Consultancy and procurement of equipment 33.There shall be continued maintenance (Repair, replacement and servicing) of electrical and electronic appliances and Serviced equipment and appliances by Instrumentation Division 34.Repair and creation of extra data ports in the BDC requires purchase of materials necessary and gear 35.Hire of external company to undertake maintenance of over 30 printers 36.Hire of external company to undertake maintenance of over 150 computer 37.Replace ICT consumables like printers toners, computer accessories, fax ribbon, computer mice, keyboards, UPS batteries whenever applicable	like: Looms, soap slicer	
	<i>Output Cost:</i>	USShs Bn: 0.600	USShs Bn: 0.247 % Budget Spent: 41.2%
<b>Output:065106</b>	<b>Industrial Skills Development and Capacity Building</b>		
<i>Description of Performance:</i>	1.Provide skilled & practical internship training to students 2.Train skilled SMEs 3.Train Small cottage industries for fruits and vegetables processing created 4.Train SMEs in reduction of post-harvest losses 5.Hands on training for 6 people in bamboo processing skills, bamboo, processing chemicals, packaging material 6.Three Internships to be offered in Molecular Biology& Biotechnology and Microbial analysis 7.Train 200 in cosmetics formulation, biotechnology and microbial analysis in Culture	Under Industrial Skills Development and Capacity Building the following persons and groups have been exposed to Hands on Training in the following areas: 1.53 Students trained in dairy processing these included students of AFRISA and Agricultural college of Alexandria of Egypt 2.Two groups trained have been trained in chalk production - Luzira SDA church group and Maganjo youth Association. They had Lecture on gypsum material and hands on training in chalk production. There is need for a big chalk forming	Budget release short falls in Q2 and Q3 slowed the pace of apprenticeship take on



# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Highlights of Vote Performance

<i>Vote, Vote Function Key Output</i>	<b>Approved Budget and Planned outputs</b>	<b>Cumulative Expenditure and Performance</b>	<b>Status and Reasons for any Variation from Plans</b>
	media, chemicals and reagents	machine	
	8.Training of production staff	3.45 Primary teachers and	
	9.Train skilled & practical	SMEs in Mpigi district, 26	
	internship students in food	Women and 7 male were trained	
	processing and quality	in Briquette and Hand Made	
	management	Paper making	
	10.Train skilled SMEs	4.23 students of Food Science	
	11.Train different groups that	and Technology from Bugema	
	are establishing small cottage	University were trained in food	
	industries in reduction of post-	analysis	
	harvest loss handling	5.23 students of Uganda	
	12.Certifications to be done in	Institute of Allied Health and	
	Networking, Programming,	Management sciences Mulago	
	hardware maintenance for	were trained in food analysis	
	Internal staff capacity	6.15 students of Makerere	
	strengthening	University - Laboratory Science	
	13.Lira Peanut Research	Education and Industry in food	
	Processing Center shall train	analysis	
	150 farmers in Good	7.Routine Laboratory training in	
	Agricultural practices and Good	Good lab practice for staff was	
	post-harvest practices. This	undertaken	
	requires sensitization meetings	8.The Microbiology team	
	and training materials	trained 71 people in various	
	URI shall provide	skills including cosmetics	
	Instrumentation skills	making and lactic acid	
	development	manufacturing.	
	14. Advanced Embedded	9.A total of 29 students from	
	Systems and Advanced applied	Mulago School of Health	
	electronics	Sciences and 2 private sector	
	15.Hardware Description	staff were trained in Microbial	
	Language, Applied	analytical skills	
	Instrumentation and Control	10.40 people had Hands –on-	
	Engineering	Skills training in cosmetics,	
	16.Computer Applications and	soap, detergents & toiletry	
	databases for embedded	product formulation and	
	systems, Double sided PCB	development	
	design and processing and	11.Trained 40 SMEs, 4	
	surface mount technologies	Graduates, 40 A level graduates	
	17.Real Time Operating	students/ vaccists 30 Civil	
	Systems (RTOS) and Project	servants and 35 others a total of	
	and System Engineering	149 in Business Development	
	Management	12. 1.Trained 20 in Basic	
	18.Provide training to 5 people	business startup principles	
	in special skills relevant their	12. Trained 20 in Basic	
	Materials and Minerals	business startup principles	
	Engineering skills gaps paradox	13.This course is coined to	
	Chemistry laboratory	ensure that our clients get a	
	19.Train 100 students in Good	pragmatic but holistic view of	
	Laboratory Practice (GLP) and	all aspects of how to start	
	chemical analysis. Makerere	business, identify a suitable	
	University, Kyambogo	business model, manage the	
	University, Mulago Paramedics,	business from all perspectives	
	Uganda Petroleum Institute	such as personnel management,	
	Kigumba (UPIK)	records keeping etc.	
	ICT		
	20.Provide professional	14.Gave guidance to 8 people	
	workshops & conduct	on the process of business	

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
	<p>seminars regarding the legal, Taxation &amp; marketing aspects of a business, understanding national policy on industry and trade in the East African Community</p> <p>21. Provide enrolled incubates training on how to start, manage a business and incorporate ICT for business efficiency ( both on site and outreach programs)</p> <p>22. Provide training in enhanced records keeping &amp; management, use of ICT tools &amp; corporate image, Business Skills &amp; Management Training, Business development coaching with emphasis on records management, Corporate image improvement and the use of ICT tools for efficiency and profitability</p> <p>23. A minimum of 2 and Maximum of 4 linkages established coordination of round table meeting with financial institutions, initialization of collaboration with international and local business development centers</p> <p>24. Participate in BDC strategic exchange programs with other institutions for capacity building</p> <p>25. Develop Customized Business Development Courses and Consultations, in Course designing &amp; development of course outlines, Content development, Content reviews, compilation, publishing of course manuals and integration of multimedia</p> <p>26. At least two primary market surveys carried out Analysis of incubates business systems, conceptualization of both manual and possible automated systems, design, testing and deployment of developed systems</p> <p>27. UIRI shall under take analysis of incubates business systems, conceptualization of both manual and possible automated systems, design, testing and deployment of developed systems</p>	<p>legalization in Uganda Taking clients through the steps of business registration</p> <p>15. Gave guidance to 4 people on how to develop a corporate business Identity. Combination of color schemes, designs, words, etc., that a firm employs to make a visual statement about itself and to communicate its business philosophy.</p>	

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
	28.Commercialization of the video conferencing facility. Video conferencing subscription fees to be established		
<i>Performance Indicators:</i>			
No. of apprenticeships taken on	80	50	
No. of SMEs trained in industrial development and value addition processing	1,000	1488	
<i>Output Cost:</i>	UShs Bn: 0.150	UShs Bn: 0.060	% Budget Spent: 40.0%
<b>Vote Function Cost</b>	<b>UShs Bn: 14.340</b>	<b>UShs Bn: 7.055</b>	<b>% Budget Spent: 49.2%</b>
<b>Cost of Vote Services:</b>	<b>UShs Bn: 14.340</b>	<b>UShs Bn: 7.055</b>	<b>% Budget Spent: 49.2%</b>

\* Excluding Taxes and Arrears

Uganda Industrial Reserch Institute's Performance Highlight for Q3 include but not limited to the following;

- 1.UIRI received US\$ 50,000 under a grant from the Patient Safety Movement which has accelerated development of the device(ECGF Infusion Set).
- 2.Advanced prototype design stage for the Smart Drip Irrigation System.
- 3.Uganda Industrial Research Institute was awarded a certificate by Uganda Investment Authority for efficient Briquette and Hand Paper making technologies
- 4.Research is ongoing in Production of biodegradable bags, and other products from banana fibers and waste paper
- 5.Researches for undergraduate students from Busitema University in production of packaging paper from maize ears, maize stems and waste paper is ongoing.
- 6.Development of Whey Drinks from wastes from cheese processing -still on going
7. Formulation and research work on production of sand dusted pots involving Body formulation, Milling, casting, firing, decoration tested and attained good results. 3 pots have so far made
- 8.200 boxes of dustless chalk were produced. However production is limited by lack of Plaster mixer and casting machine
- 9.Research on Button Mushroom: Only Oyster variety of mushroom can now be cultivated for commercial purpose in Uganda. All other varieties on market are only imported into the country and tagged expensively
- 10.Various Food formulations and development were undertaken
- 11.Under the Essential Oil Project (Natural Plant Products), 3,000 Rose geranium cuttings and 6,000 root splits of lemon balm rooted well and are due for planting during the August September session
- 12.Planting material for Lemon grass, Cinammon and Rosemary is to be introduced in April rains since those oils are being sought after in the local market
- 13.Briquette and packaging bags making from agricultural wastes in was undertaken in Kamengo-Mpigi District. This involves Carbonizing, crushing, mixing, pressing, drying and packaging of briquettes.
- 14.1,000 gift bags from cotton and waste paper are supplied to Rwanda Air per month by an incubatee
- 15.500 gift bags from cotton and waste paper are supplied to Igongo Cultural Centre Mbarara per month by an incubatee
- 16.Premier dairies production at per month and other small scale incubates producing a range of milk products
- 17.Bio ethanol project is being initiated
- 18.11 incubates under meat technology producing a range of beef, chicken, pork, rabbit, fish and sea food products

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Highlights of Vote Performance

19. Arua Savoury Classic meat processing Plant is 70% complete
20. Karubuga Model Dairy Farm in Ntungamo is 70% complete
21. Essential Oils Pilot Project, Luweero is 70% complete
22. Refurbishment of UIRI Chemistry Laboratory is 85% complete
23. Fruit juice processing plant in Ntungamo for Itojjo fruit growers Association is 80% complete
24. 53 Students trained in dairy processing these included students of AFRISA and Agricultural college of Alexandria of Egypt
25. Two groups trained have been trained in chalk production - Luzira SDA church group and Maganjo youth Association. They had Lecture on gypsum material and hands on training in chalk production. There is need for a big chalk forming machine
26. 45 Primary teachers and SMEs in Mpigi district, 26 Women and 7 male were trained in Briquette and Hand Made Paper making
27. Trained 32 people in chemistry, food and microbial analyses
28. Upgrading of the fresh milk pilot plant machinery - A new cold room for fresh milk Processing Pilot Plant was delivered, installed, tested and commissioned
29. Procurement of Kaganga Dairy Farm equipment has commenced
30. The Dairy Equipment for Karubuga Dairy Project has been delivered and is due for Installation upon 80% payment
31. A complete set of equipment for Handmade paper production has been delivered awaiting Installation and commercialization of Handmade paper Technology
32. Field visits and assessment conducted by UIRI
33. 4th February 2016, Namutumba Bush Fire Association were trained in BEST PRACTICE bakery and confectionary
34. 14th March 2016, Kweyayo Cooperative Society - Buikwe District assessment on appropriate economic activity to undertake
35. During the Quarter UIRI published the following articles
36. "5,000 Teso Farmers to benefit from value addition trainings"-20th January 2016
37. "UIRI wins an innovation Award in California, USA"- 1st February 2016
38. UIRI Article in the Women's Day Magazine Ministry of Gender -8th March, 2016
39. Participated and exhibited at the Women's Day Celebrations – Kololo on 8th March 2016,
40. Conducted 7 Study tours to create public awareness of UIRI's activities and the opportunities
  - i. KIBO Foundation
  - ii. SDA Church Luzira
  - iii. Rivers of Hope (ROH) Ministries
  - iv. KCCA
  - v. Friends of Christ Assembly (FOCA) Kyanja
  - vi. Buganda Kingdom from Ssaza Kyaggwe
  - vii. Agri – Machinery Trade Mission from the Netherlands to Uganda

**Table V2.2: Implementing Actions to Improve Vote Performance**

Planned Actions:	Actual Actions:	Reasons for Variation
Vote: 110 Uganda Industrial Research Institute		
Vote Function: 06 51 Industrial Research	<p><b>Development efforts have been focused on the ECGF Infusion Set with strict timelines to achieve the first fully automated prototype by the end of May. We foresee more interaction with clinicians as we continue to seek for funding. The Instrumentation Division</b></p>	Shortfall in budget releases cause delays in execution of planned interventions

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## QUARTER 3: Highlights of Vote Performance

Planned Actions:	Actual Actions:	Reasons for Variation
	<p>is planning a clinical pilot in June for the ECGF Infusion Set. We are currently seeking FDA Approval in the USA to pilot at Intermountain Healthcare and CE mark certification in Europe.</p> <p>Neonatal and Maternal Healthcare Project/R&amp;D of two medical devices/Status of Medical Equipment in the country/ possibly publishing papers on the status/Calibration, Repair and Maintenance Project for Medical Equipment/ ( Partners involved: College of Health Sciences, Makerere University Kampala and Oxford BioHorizons Ltd. UK, Columbia University in New York), Ernest Cook Ultrasound Research and Education Institute (ECRUEI)The Instrumentation Division received a 1st Place Innovation Award and US\$50,000 from the Patient Safety Movement Foundation in Dana Point, California on 22nd January 2016 for the Electronically Controlled Gravity Feed Infusion Set Project. Following this new development the Division has hired a consultant Systems Engineer from Germany and a team from Design without Borders to work on the casing design of the Infusion Set. We have also engaged Dr. Robert Opoka on the project in addition to Dr. Sabrina Kitaka and a Nurse from the Children's Acute Care ward. A team of students from Columbia University are also scheduled to visit UIRI in June under the Venturewell Grant. We have also submitted 4 grant applications which we are waiting to here back from is ongoing</p> <p>2.Research and Development of Agriculture based projects - Smart Drip Irrigation ProjectDesign and Development of a Smart Drip Irrigation System. The Division is currently in advanced prototype design stages for the Smart Drip Irrigation System. Project Brainstoming sessions are held weekly on Wednesday mornings. The Instrumentation Team has split into two teams for the Electronics and Mechanical Design of the project to accelerate progress. The Division has been in consultation with Davis and Shirliff and is more recently going to engage iFDC an NGO focused on improving productivity along the</p>	

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## QUARTER 3: Highlights of Vote Performance

Planned Actions:	Actual Actions:	Reasons for Variation
	<p>Agricultural Value Chain.On-going~US\$6,500 ( funding required)  <b>Internal Projects (8): Automatic indoor/outdoor Lighting System, Solar Fruit Dryer, Keypad based door lock system, Solar Powered Egg incubator, Weighing Scale, Automatic Voltage Regulator, Multi-purpose Temperature control monitoring, Fingerprint and pin code based security access control system.Hardware design and analysis, Firmware design, simulation and prototyping is ongoing for these team oriented projects, electronic components have been received, however, they will need to be replenished as prototyping, hardware and software integration continues.Development of these projects are momentarily on hold as the focus is on fast tracking the ECGF infusion set.~US\$13850.37 (worth of goods has been received as of Nov 2013) Awaiting procurement for US\$ 20,000 requisition (see above) to further develop projects.</b></p> <p><b>3.Uganda Industrial Research Institute was awarded a certificate by Uganda Investment Authority for efficient Briquette and Hand Paper making technologies</b></p> <p><b>4.Research is ongoing in</b>  a)Production of biodegradable bags from banana fibres and waste paper  b)Production of cheap packaging bags for restaurants by folding and gluing of corrugate medium paper produced from trees  c)Paper and other related products production from old boxes by recycling from old boxes and banana fibers</p> <p><b>5.</b>  <b>Lactic acid production from cassava: The production process is a simultaneous saccharification and fermentation (SSF) converting cassava starch to lactic acid in the same batch. Inoculum of selected bacteria (isolated at UIRI Biotechnology Centre) is added along with the substrate degrading enzymes (from Kess Biotech Inc, an incubatee at the centre). This “green technology” does not only reduce the cost of production by avoiding high energy consuming biomass liquefaction, but also leads to higher productivity by providing adequate sugar release and high conversion rate of 60% or more! It</b></p>	

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## QUARTER 3: Highlights of Vote Performance

Planned Actions:	Actual Actions:	Reasons for Variation
	<p>is moreover a simple process that can be done at microscale mimicking the traditional fermentation of tonto (a local brew).</p> <p>About 6kg of cassava on fresh weight basis would yield 1L of lactic acid of 88% concentration which would cost 150,000/ shillings or less at retail price. At the current retail market price, a heap of cassava which is about five kilograms costs 2000/= shillings.</p> <p>6.Two nutritional supplements from pawpaw flesh and seeds have been developed</p> <p>7.A process for extraction of papain enzyme has been developed</p> <p>8.Completed fabrication of a 1000Kg feed mixer, horizontal type</p> <p>9.Completed fabrication of a 75kg soya steamer and successfully tested</p> <p>10.Completed fabrication of a 10kg Peanut butter machine</p> <p>UIRI has gone a long way in helping entrepreneurs develop products and services that conform to standards and consequently some products can now ably complete on the local and regional market</p>	<p>Shortfall in budget releases cause delays in execution of planned interventions</p>
Vote: 110 Uganda Industrial Research Institute		
Vote Function: 06 51 Industrial Research		
	<p>Availing business incubation facilities has helped some incubatees in writing bankable and vaible business proposal for some funding though the effort remains inadequate</p>	<p>Request for additional funding by INNOVATION OR INDUSTRIALISATION FUND to commercialisation have not yet materialised</p>

### V3: Details of Releases and Expenditure

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

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

Billion Uganda Shillings	Approved Budget	Released	Spent	% GoU Budget Released	% GoU Budget Spent	% GoU Releases Spent
<b>VF:0651 Industrial Research</b>	<b>14.24</b>	<b>7.23</b>	<b>7.05</b>	<b>50.8%</b>	<b>49.5%</b>	<b>97.6%</b>
<i>Class: Outputs Provided</i>	<i>11.45</i>	<i>6.32</i>	<i>6.14</i>	<i>55.2%</i>	<i>53.7%</i>	<i>97.3%</i>
065101 Administration	5.92	3.96	<b>3.92</b>	67.0%	66.3%	99.0%
065102 Research and Development	1.86	0.93	<b>0.87</b>	50.1%	46.4%	92.7%
065103 Industrial Incubation	1.70	0.74	<b>0.69</b>	43.3%	40.5%	93.3%

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## QUARTER 3: Highlights of Vote Performance

065104 Maintenance - Civil works	0.62	0.21	<b>0.20</b>	34.1%	32.1%	94.2%
065105 Maintenance - Machinery and Equipment	0.60	0.25	<b>0.25</b>	41.6%	41.2%	99.0%
065106 Student Industrial Training and Capacity Building	0.15	0.06	<b>0.06</b>	40.0%	40.0%	100.0%
065107 Technology, Innovation, Transfer and Development	0.54	0.16	<b>0.16</b>	29.6%	29.6%	99.9%
065108 Popularization of research and technologies	0.06	0.00	<b>0.00</b>	0.0%	0.0%	N/A
<i>Class: Capital Purchases</i>	<i>2.79</i>	<i>0.91</i>	<i>0.91</i>	<i>32.7%</i>	<i>32.6%</i>	<i>99.9%</i>
065172 Government Buildings and Administrative Infrastructure	0.98	0.30	<b>0.30</b>	30.6%	30.6%	100.0%
065176 Purchase of Office and ICT Equipment, including Software	0.10	0.02	<b>0.02</b>	19.3%	19.2%	99.4%
065177 Purchase of Specialised Machinery & Equipment	1.71	0.59	<b>0.59</b>	34.6%	34.6%	99.8%
<b>Total For Vote</b>	<b>14.24</b>	<b>7.23</b>	<b>7.05</b>	<b>50.8%</b>	<b>49.5%</b>	<b>97.6%</b>

\* Excluding Taxes and Arrears

**Table V3.2: 2015/16 GoU Expenditure by Item**

<i>Billion Uganda Shillings</i>	<b>Approved Budget</b>	<b>Releases</b>	<b>Expenditure</b>	<b>% Budget Released</b>	<b>% Budget Spent</b>	<b>% Releases Spent</b>
<b>Output Class: Outputs Provided</b>	<b>11.45</b>	<b>6.32</b>	<b>6.14</b>	<b>55.2%</b>	<b>53.7%</b>	<b>97.3%</b>
211102 Contract Staff Salaries (Incl. Casuals, Temporary)	4.38	3.29	<b>3.27</b>	75.0%	74.7%	99.5%
211103 Allowances	0.10	0.07	<b>0.07</b>	67.0%	67.0%	100.0%
212101 Social Security Contributions	0.53	0.40	<b>0.34</b>	75.0%	64.9%	86.5%
213001 Medical expenses (To employees)	0.20	0.15	<b>0.14</b>	75.6%	71.1%	94.0%
213004 Gratuity Expenses	0.91	0.29	<b>0.29</b>	31.4%	31.4%	100.0%
221001 Advertising and Public Relations	0.03	0.01	<b>0.01</b>	30.8%	30.8%	99.9%
221003 Staff Training	0.16	0.06	<b>0.06</b>	41.1%	41.1%	100.0%
221004 Recruitment Expenses	0.01	0.00	<b>0.00</b>	0.0%	0.0%	N/A
221007 Books, Periodicals & Newspapers	0.01	0.00	<b>0.00</b>	26.4%	26.2%	99.2%
221009 Welfare and Entertainment	0.08	0.06	<b>0.05</b>	73.2%	64.4%	88.0%
221011 Printing, Stationery, Photocopying and Binding	0.07	0.00	<b>0.00</b>	2.9%	2.9%	100.0%
221012 Small Office Equipment	0.03	0.00	<b>0.00</b>	7.1%	6.9%	96.2%
221017 Subscriptions	0.01	0.00	<b>0.00</b>	27.4%	22.0%	80.2%
222001 Telecommunications	0.07	0.07	<b>0.07</b>	97.9%	97.9%	100.0%
222002 Postage and Courier	0.00	0.00	<b>0.00</b>	0.0%	0.0%	N/A
222003 Information and communications technology (ICT)	0.04	0.04	<b>0.02</b>	100.0%	68.0%	68.0%
223001 Property Expenses	0.12	0.06	<b>0.05</b>	51.6%	38.4%	74.4%
223002 Rates	0.05	0.01	<b>0.01</b>	18.6%	18.6%	100.0%
223004 Guard and Security services	0.16	0.06	<b>0.06</b>	37.8%	37.8%	100.0%
223005 Electricity	0.54	0.25	<b>0.25</b>	45.7%	45.7%	100.0%
223006 Water	0.13	0.06	<b>0.06</b>	45.6%	45.6%	100.0%
223007 Other Utilities- (fuel, gas, firewood, charcoal)	0.15	0.03	<b>0.02</b>	18.4%	14.7%	79.9%
224001 Medical and Agricultural supplies	0.47	0.22	<b>0.21</b>	47.0%	44.0%	93.6%
224004 Cleaning and Sanitation	0.19	0.02	<b>0.02</b>	9.6%	9.6%	100.0%
224005 Uniforms, Beddings and Protective Gear	0.10	0.01	<b>0.01</b>	11.0%	10.6%	96.5%
224006 Agricultural Supplies	0.81	0.26	<b>0.26</b>	32.3%	32.3%	99.9%
226001 Insurances	0.04	0.01	<b>0.01</b>	22.9%	22.4%	98.2%
227001 Travel inland	0.03	0.01	<b>0.01</b>	24.8%	24.7%	99.6%
227002 Travel abroad	0.19	0.08	<b>0.08</b>	44.4%	44.4%	100.0%
227003 Carriage, Haulage, Freight and transport hire	0.01	0.00	<b>0.00</b>	25.0%	23.9%	95.7%
227004 Fuel, Lubricants and Oils	0.26	0.15	<b>0.15</b>	57.4%	55.4%	96.5%
228001 Maintenance - Civil	0.05	0.04	<b>0.04</b>	80.0%	80.0%	100.0%
228002 Maintenance - Vehicles	0.27	0.09	<b>0.09</b>	32.1%	32.1%	99.9%
228003 Maintenance – Machinery, Equipment & Furniture	1.25	0.52	<b>0.49</b>	41.5%	38.9%	93.8%
<b>Output Class: Capital Purchases</b>	<b>2.79</b>	<b>0.91</b>	<b>0.91</b>	<b>32.7%</b>	<b>32.6%</b>	<b>99.9%</b>
312101 Non-Residential Buildings	0.98	0.30	<b>0.30</b>	30.6%	30.6%	100.0%
312202 Machinery and Equipment	1.81	0.61	<b>0.61</b>	33.8%	33.7%	99.8%



# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Highlights of Vote Performance

<b>Grand Total:</b>	<b>14.24</b>	<b>7.23</b>	<b>7.05</b>	<b>50.8%</b>	<b>49.5%</b>	<b>97.6%</b>
<b>Total Excluding Taxes and Arrears:</b>	<b>14.24</b>	<b>7.23</b>	<b>7.05</b>	<b>50.8%</b>	<b>49.5%</b>	<b>97.6%</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>VF:0651 Industrial Research</b>	<b>14.24</b>	<b>7.23</b>	<b>7.05</b>	<b>50.8%</b>	<b>49.5%</b>	<b>97.6%</b>
<i>Recurrent Programmes</i>						
01 Headquarters	5.92	3.96	<b>3.92</b>	67.0%	66.3%	99.0%
<i>Development Projects</i>						
0430 Uganda Industrial Research Institute	8.32	3.26	<b>3.13</b>	39.2%	37.6%	95.9%
<b>Total For Vote</b>	<b>14.24</b>	<b>7.23</b>	<b>7.05</b>	<b>50.8%</b>	<b>49.5%</b>	<b>97.6%</b>

\* Excluding Taxes and Arrears

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

# Vote: 110 Uganda Industrial Research Institute

## 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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### Vote Function: 0651 Industrial Research

#### Recurrent Programmes

#### Programme 01 Headquarters

##### Outputs Provided

#### Output: 06 5101 Administration

		Item	Spent
- Recruit 45 New Employees	Recruited 15 New Employees	211102 Contract Staff Salaries (Incl. Casuals, Temporary)	2,788,088
-Undertake staff training and skills development	-Undertake staff training and skills development	211103 Allowances	32,000
- Pay off current staff salaries and benefits	- Pay off current staff salaries and benefits	212101 Social Security Contributions	305,214
- Insure Institute Assets Equipment, Vehicles, IT Servers and IT Equipment	- Insure Institute Assets Equipment, Vehicles, IT Servers and IT Equipment	213001 Medical expenses (To employees)	142,105
Subscriptions	Subscriptions	221009 Welfare and Entertainment	49,830
Online Membership subscription for 1.AOAC (Association of Analytical Chemists	Online Membership subscription for 1.AOAC (Association of Analytical Chemists	221017 Subscriptions	895
2.American Public Health Association	2.American Public Health Association	222001 Telecommunications	69,000
3.Science Direct Journal.	3.Science Direct Journal.	222003 Information and communications technology (ICT)	23,799
4.Laboratory Proficiency Testing Schemes (PTS)	4.Laboratory Proficiency Testing Schemes (PTS)	223001 Property Expenses	33,415
5.Annual Subscription for	5.Annual Subscription for	223004 Guard and Security services	33,000
•PTS,	•PTS,	226001 Insurances	7,857
•AgriLASA,	•AgriLASA,	227002 Travel abroad	43,000
•EAC	•EAC		
•SADCMET	•SADCMET		
•EAPAS (as a requirement for Accreditation of the laboratory)	•EAPAS (as a requirement for Accreditation of the laboratory)		

#### Reasons for Variation in performance

Appeals for addition wage to enable the institute afford salaries and other employee benefits have not materialized hence the reason for low recruitment. UIRI requires 3.6bn to recruit and retain high caliber scientists and engineers

<b>Total</b>	<b>3,924,090</b>
<b>Wage Recurrent</b>	<b>2,788,088</b>
<b>Non Wage Recurrent</b>	<b>1,136,002</b>
<b>NTR</b>	<b>0</b>

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

##### Capital Purchases

#### Output: 06 5172 Government Buildings and Administrative Infrastructure

# Vote: 110 Uganda Industrial Research Institute

## 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
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US\$ Thousand

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

- Establish a functional Fruit juice and water processing facility in Kawempe by modification of an existing processing facility

- Development of new products for the centres and training of production staff

- Establish a Model industry to manufacture the polylactic acid and make bioplastics; and cosmetics centre 1st, 2nd, 3rd and 4th Establish infrastructure for pilot plants and recruit personnel to manage the centres

- Maziba Winery Project, Kabale Establishment of a complete functional processing winery plant whose construction work included a sub structure, walling and roofing, sanitary facilities, internal and external finishes, external works have been completed and handed over. Defects liability period supervision is underway.

- Establishment of a Model Dairy Farm in Ntungamo

The establishment of a model farm entails constructing a Dairy shade, Feeding shade, Chaff Cutter shade, Milk collection area.

Site has been handed over to the Contractor for commencement of work.

- Extra works at Essential Oils Pilot Project Luweero

Construction of allowed variation for additional scope to include office premises and wet areas is underway at 90% of works complete.

- Construction of a nursery shed at Essential oils Luweero

Construction of a nursery shed at Luweero Essential Oils is underway. Civil works Construction were completed. Welding works are pending

- Proposed Fruit juice processing plant in Itojjo

A functional fruit juice processing plant whose works include a substructure, walling and roofing, internal and external finishes is underway. Construction is ongoing and the substructure is complete

- Proposed Cheese processing plant at Rubale Ntungamo District

Works include to design for construction of the Cheese Processing Facility is underway. Site reconnaissance, to assess the nature of land, was done by the UIRI technical team on 17th Sep 2014. Bills of Quantities have been prepared.

- Proposed Soap processing plant in

The following are rate of completion and status of Value Addition Centers being established by the Institute

1. Arua Savoury Classic meat processing Plant is 70% complete

2. Karubuga Model Dairy Farm in Ntungamo is 70% complete

3. Essential Oils Pilot Project, Luweero is 70% complete

4. Refurbishment of UIRI Chemistry Laboratory is 85% complete

5. Fruit juice processing plant in Ntungamo for Itojjo fruit growers Association is 80% complete

7. Proposed Peanut paste Processing plant in Soroti has not yet started

8. Rehabilitation of Esia mixed farm in Adjuman has not started

9. MAFFACO fruit processing facility for Masindi Fruit

# Vote: 110 Uganda Industrial Research Institute

## 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
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*UShs Thousand*

### Vote Function: 0651 Industrial Research

#### *Development Projects*

#### **Project 0430 Uganda Industrial Research Institute**

Kabale Industrial Area for Yildi enterprises is underway. Works to include Design for construction of the facility is underway. Site reconnaissance, to assess the nature of land, was done by the UIRI technical team on 17th Sep 2014. Preliminary estimates have been prepared.

- Proposed rehabilitation of Esia mixed farm, Adjumani

Rehabilitation of the facility and activity scope to be discussed with UIRI Management

- Tile manufacturing facility in Wakiso  
Designs and Bills of Quantities have been prepared for establishment of a manufacturing facility for Tiles in Wakiso

- Proposed Peanut Processing Plant in Soroti District

The design is complete and preliminary estimates for a complete functional Peanut Paste Processing Plant in Soroti District have been prepared. A report has been submitted for approval.

- Development of a Fabrication Lab for small scale manufacturing of circuit boards and casings for complete prototypes. A Project proposal is currently being developed. A start-up meeting was convened inviting interested stakeholders for the project.

- Internal Painting of selected Buildings at UIRI

Design and BOQ's and implementation supervision of Internal painting of the plants are meant to improve the sanitary conditions of the facilities to enable them attain UNBS inspection standards. External painting is to improve the aesthetics and general outlook of the UIRI campus. Painting of toilets at the conference hall is complete. Painting in ceramics is on going

- Proposed Chemistry Laboratory Refurbishment  
Model Chemistry A Model Chemistry laboratory to facilitate the research activities currently being undertaken is ongoing. Contractor was procured.

Construction work scheduled to begin in Q3.

- Proposed Renovation of TDC

Engineering workshop floor

A hard wearing suitable floor surface for activities being carried out on the workshop is required for reinforcement of workshop floor surface with

# Vote: 110 Uganda Industrial Research Institute

## 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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### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

terrazzo.  
Renovation works in the workshop floors commenced and are underway.

#### Reasons for Variation in performance

Some projects have been deferred due to Q2 and Q3 shortfalls hence unable to undertake planned projects

<b>Total</b>	<b>299,906</b>
<i>GoU Development</i>	299,906
<i>External Financing</i>	0
<i>NTR</i>	0

#### Output: 06 5176 Purchase of Office and ICT Equipment, including Software

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>1.Purchase of computers</li> <li>2.Mobile Internet</li> <li>3.Procure 5 Laptops for the Vaccine Production Unit</li> <li>4.Procure all general Office Supplies</li> <li>5.Equipment Maintenance and</li> <li>6.purchase of Printer with multipurpose system button</li> <li>Mushroom Project</li> <li>7.3 Computers and 1 printer required to facilitate research work for the pilot plants</li> <li>8.Procurement for 5 Desktop Computers for the Chemistry Laboratory</li> <li>9.Padlocks</li> <li>10.Security torches</li> <li>11.2 Computer sets for Kabale Potato Research and Processing Center</li> <li>12.LAN Internet</li> <li>13.Laser printer</li> <li>14.Paper</li> <li>15.2 computer sets, printer, scanner and fax, printing papers, counter books, pens, markers, masking tape, cel tape, office glue, toner, printing receipts, delivery notes</li> <li>16.Enable intercom communication with other sections/labs/departments at the institute</li> <li>17.Acquire a printer for the food laboratory for easy of reporting and communicating</li> <li>18.Acquire a computer and printer for the Production Systems Department</li> <li>19.Purchase of a printer for the Production Systems Department</li> <li>20.Purchase a storage and display cabin for the UIRI developed products</li> </ul> | <ul style="list-style-type: none"> <li>1.Purchased Ncomputing cluster for BDC for St Theresa and St. Agnes</li> <li>2.Purchased 7 modems from Smile Telecom to support key UIRI offices</li> <li>3.Purchased Tonner for IRC printer, Purchased stationary for Business Development Center.</li> <li>4.Equipment maintenance was done in house by ICT Support Team</li> <li>5.A multipurpose printer was purchased for the Mushroom Project</li> <li>6.5 Desktop Computers were procured and delivered for the Chemistry Laboratory and are already being used</li> <li>7.A laser Printer was purchased for Procurement and Disposal Unit</li> <li>8.Paper was purchased for the Business Development Center.</li> <li>9.Stationary including counter books, pens, markers, masking tape, cell tape, office glue, toner, printing receipts, delivery notes were purchased for the Business Development Center</li> </ul> |
|--|---|

# Vote: 110 Uganda Industrial Research Institute

## 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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### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

#### Reasons for Variation in performance

The following items were deferred to FY 2016/2017 due to lack of funds as a result of shortfalls

- i. Enabling intercom communication with other sections/labs/departments at the institute
- ii. Acquiring of a printer for the food laboratory
- iii. Purchase of a storage and display cabin for the UIRI developed products

<b>Total</b>	<b>19,875</b>
<i>GoU Development</i>	19,875
<i>External Financing</i>	0
<i>NTR</i>	0

#### Output: 06 5177 Purchase of Specialised Machinery & Equipment

This involves procurement of specialised equipment, design and fabrication of Specialized Machinery

- Newcastle Vaccine Dropper Bottles
- Pathogen Free Eggs
- Newcastle Vaccine Laboratory Supplies
- Moisture Analyzer Analysis of residual moisture in the vials after lyophilisation. It will facilitate the determination of extended expiry periods.
- Refrigerators for storage of large quantities of finished product
- Installation of walk in freezers for meat pilot plant
- Procuring meat equipment for the meat pilot plant
- Procurement of meat equipment for Virtual incubatees
- Upgrade fruits and vegetable pilot plant equipment
- Procurement of equipment for the new cheese pilot plant (50-100kg per shift)
- Procurement of a toothpick packaging machine
- Procurement of a continuous ice cream freezer
- Procurement of new dairy equipment to upgrade milk powder plant to 1 ton per shift
- Extraction of orange juice
- Need for modification of the gas pasteurizer to a double jacketed gas pasteurizer
- Modification of the juice master
- Procurement of Laboratory Analytical Balance
- Procurement of Gas

All planned procurements are on course save for delays and a few deferred as a result of Q2 and Q3 Shortfalls

<i>Item</i>	<i>Spent</i>
312202 Machinery and Equipment	590,680

# Vote: 110 Uganda Industrial Research Institute

## 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
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*UShs Thousand*

### Vote Function: 0651 Industrial Research

#### *Development Projects*

#### **Project 0430 Uganda Industrial Research Institute**

- Chromatography/ Mass spectrometer (GC-MS) equipment
- 10 Analytical Chemistry & Laboratory text books
  - Procurement of hydrogen generator for GC
  - Procurement of laboratory centrifuge
  - Procurement of 4 libraries for FTIR
  - Procurement of mycotoxin testing kit
  - Procurement of Laboratory Blender
  - Procurement of HPTLC set for Natural products
  - Mobile laboratory (equipment inclusive)
  - Acquire an effective heat source in the lab
  - Acquire an equipment that can blend and mix
  - Sacket packaging technology
  - Peanut grinding technology for product development
  - Basic laboratory equipment centrifuge, analytical balance, glass ware, pipette, measuring cylinder, pastuer pipette, beakers, funnels, pipette fillers, reagent bottles, glass rods, conical flask, burette, chemicals and consumables, Hydrochloric acid, sulphuric acid, sodium hydroxide, methyl orange indicator, phenolphthalein, sodium thiosulphate, potassium iodide, starch, sodium chloride, chloroform, ethanol reagent, filter paper(whatman)
  - Procurement of safety ware, organic respirator, chemical resistant gloves (carton), chemical resistant shoes, and overcoats
  - Procurement of 2 units of Humidifiers for the button mushroom research Project
  - Procurement of a florescent microscope with identification software with computer system connected
  - Procurement of a Plant weighing scale of maximum weight of 100kg
  - Procurement of an air conditioning system with humidity and temperature control system
  - Procurement of a Pressure Casting machine. Draw equipment specifications
  - Procurement of a Hydro Cyclone unit - Kaolin Pre-treatment. Draw equipment specifications
  - Procure Integrated X-Ray Florescence (XRF) /X-ray Difrraction (XRD) Machine. Draw equipment

# Vote: 110 Uganda Industrial Research Institute

## 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
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US\$ Thousand

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

specifications

- Procure sets of Standard Screens/Sieves
- Procurement of a Thermal Pyrometer.

Draw equipment specifications

- Acquisition of Raw Materials
- Procurement of safety gears of different sizes and types/brands
- Procurement of Ceramics Surface Decoration Equipment
- Testing equipment for the juice plant
- Procurement of testing equipment
- Purchase of a steam jacketed kettle
- Purchase of two Domain servers
- Purchase of one Storage and replication server
- Purchase of two printers to be networked to serve all UIRI staff
- Procurement of ICT maintenance firm
- Coordinate campus wide and offsite computer maintenance
- Procurement of other ICT consumables (4 C5020, 50CD's, 50 DVD's, 2 Fax Film, 10 Flash Disk, 5 HP 130 & 134, 5 HP 131 & 135, 4 HP 13A, 4 HP 2600N, 4 HP 36APCS, 6 HP 3800, 4 HP 49A, 4 HP 53A, 4 HP 70 A, 4 HP 78d & 45d, 4 HP 5500DN, 5 C530, 1, 2, 3A, 4 HP 35, 6 Toner for HP Desk jet 500 MFP, 4 TK-540 Kyocera toner, 3 Canon C-EXV14, 2 Printer Ribbons, 4 HP 05A, 5 Network Cards, 10 Mouse PCS, 20 Ups Batteries, 14 Extension cables, 10 RAM, 5 CMOS battery
- Enhance records management for incubates, and Creation of an alternative source of revenue for the BDC. Purchase of Palladium Ent, QuickBooks, Tally and Business Plan pro
- Create more training terminals and repair of existing desk computers in the BDC Lab. This requires purchase of workstation and computers in the BDC Lab
- Enhance training at the BDC through acquisition of visual aid tools. This requires purchase of Laptops and projectors for BDC
- Provide Internet service, Internet bandwidth provision and subscription

#### Reasons for Variation in performance

Slow and delay of many planned procurements due to Q3 budget shortfalls



# Vote: 110 Uganda Industrial Research Institute

## 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>US\$ Thousand</i>
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### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

<b>Total</b>	<b>590,680</b>
<i>GoU Development</i>	590,680
<i>External Financing</i>	0
<b>NTR</b>	<b>0</b>

#### Outputs Provided

#### Output: 06 5102 Research and Development

	<i>Item</i>	<i>Spent</i>
Research and development		
The different sections engaged in Research and Development shall undertake as follows		
Production Systems shall		
1. Formulate and develop chicken feeds out of the bio waste of fruit waste		
2. Formulate and develop Jackfruit jam		
3. Formulate and develop Pomegranate juice		
4. Formulate and develop Sugar cane syrup and jam		
5. Formulate and develop healthy Green tea drinks		
6. Formulate and develop healthy cocktail (pumpkin, lemon & passion)		
7. Formulate and develop pumpkin powder		
Under the Food Laboratory		
8. Food Laboratory remains committed to undertake food product development, and related research		
9. Study the stability of curcuminoids and lignans in foods		
10. Analysis of milk using lactoscan hence the need to procure consumable materials including alkali		
11. Analysis of juices for TTA, Phhe need to procure consumable materials including indicator		
12. Testing products under development for temperature, moisture Q1, Q2, Q3 Moisture meter		
13. Carrying out milk platform tests he need to procure consumable materials including a base		
14. 3 types of Breakfast cereals will be made hence the need to procure, production materials including raw materials and packaging		
15. 4 types of Instant porridges will be made hence the need to procure production materials including raw materials, packaging, emulsifiers, stabilisers and preservatives		
16. 2 types of noodles from local food material will be developed hence the need to procure production materials including		
There is a lot of vigilance with the Research and Development work in the area of food product development, reverse engineering, technology development, renewable energy, instrumentation design solutions and provision high quality services with exacting standards of scientific analysis and skill, and dedicated personalized service created with competitive pricing. This has led to enhanced business image to the extent that nowadays the UNBS has informally instituted a policy that if we give a positive certificate to any client they honor our result! Accordingly many of our clients have improved their products' quality and accessed space on exclusive supermarket shelves reporting increased sales.	211102 Contract Staff Salaries (Incl. Casuals, Temporary)	482,089
	212101 Social Security Contributions	38,034
	223005 Electricity	154,875
	223006 Water	11,146
	227004 Fuel, Lubricants and Oils	22,739

# Vote: 110 Uganda Industrial Research Institute

## 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
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UShs Thousand

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

appropriate packaging  
 17. 7 gas mixtures for MAP packaged fruits, vegetables, meats, bakery products, dairy products will be developed the need to procure raw materials and appropriate packaging  
 18.5 levels of Production of pectin the need to procure production materials  
 19. Develop breakfast cereals, instant porridges, noodles from local foods like cassava and sweet potato  
 20. Improve on food packaging technologies for meats, fruits, vegetables, baked products using modified atmosphere packaging (MAP) as a preservation procedure that doesn't use chemicals  
 21. Producing pectin from fruit wastes, extraction of plant and animal materials that can be used as ingredients during product development.  
 22. Enable physical preservation of fluid foods at laboratory level before packaging  
 23. Fast and efficient drying of food products during product development  
 Microbiology shall develop 3 Products

24. Research & development of shea/Bentonate Anti-Acne, anti-wrinkle creams, shampoo, face scrub, toner & moisturizer 1st, 2nd, 3rd and 4th Quarters  
 Chemicals & reagents for cosmetics formulation  
 25. Research & development of an antibacterial soap 1st, 2nd, 3rd and 4th Quarters  
 Chemicals & reagents for cosmetics formulation  
 26. Research & development of Spirulina 1st, 2nd, 3rd and 4th Quarters  
 Laboratory consumables  
 Research projects applied shall include  
 27. Design & Dev't of production process of an antibacterial herbal remedy 1st, 2nd, 3rd and 4th Quarters  
 Materials & Equipment  
 28. Field trial of Aflatoxin Biosensor in Arua 2nd Quarter  
 Materials, Equipment and subsistence allowances  
 Research Projects shall be initiated shall include  
 29. Pro-Lactic acid production from cassava 1st, 2nd, 3rd and 4th Quarters  
 Materials, Equipment and subsistence allowances  
 30. Bioplastics development 1st, 2nd, 3rd and 4th Quarters  
 Materials, Equipment and subsistence allowances  
 31. Biosurfactants for environmental

# Vote: 110 Uganda Industrial Research Institute

## 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
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US\$ Thousand

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

bioremediation 1st, 2nd, 3rd and 4th Quarters Materials, Equipment and subsistence allowances

32. Biosensors and Bioengineering 1st, 2nd, 3rd and 4th Quarters Materials, Equipment and subsistence allowances

Chemistry laboratory

33. Routine Laboratory analysis, Research & Development

34. Procurement of Laboratory standards chemicals, Reagents, Apparatus and other lab materials.

35. Procurement for Soxtec system (Fat content), Fibertec system (fiber content) & Kjeltex system (protein)

36. No. of product analyses undertaken 1000 Routine analysis of External and Internal laboratory samples, food, juice, water & waste water, drugs, minerals, soap, Detergents, cosmetics, natural products and petroleum products

The Chemistry Laboratory shall undertake five product formulations

37. Formulation of shoe polish,

38. car polish,

39. sanitizers,

40. match box, and

41. Anti-microbial agents using local raw materials in Uganda

The Chemistry Laboratory Research projects shall include.

42. Antimicrobial activity of banana flowers extract against bacteria

43. Application of zeolites in removal of heavy metals in wastewater.

44. Isolation of curcuminoids from turmeric plant.

45. Commercialization of flavored clay pot water

The Materials and Minerals Engineering Division

The Materials and Minerals Engineering Division looks to innovate the following new technologies

46. Production of recycled Glass Products

47. Production of concrete Tiles and Pavers

48. Production of plastic Recycled Products

49. Undertake the physical and chemical analysis of the different mineral ores used in the section

50. Refinement of production of cups, plates and saucers

51. Undertake R&D in Bentonite and Allied requiring chemicals & Reagents

52. Undertake R&D in Artificial

# Vote: 110 Uganda Industrial Research Institute

## 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
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*UShs Thousand*

### Vote Function: 0651 Industrial Research

#### *Development Projects*

#### **Project 0430 Uganda Industrial Research Institute**

Ceramic Corals in fish breeding  
 53.Undertake R&D in Gemstone cutting technology this requires equipment & Consumables  
 54.Continue with R&D in dustless Chalk making from Gypsum ore  
 55.Undertake R&D in Glass recycling Technology  
 56.Continue with R&D in Water filtration  
 57.Continue with R&D in concrete tiles and Pavers  
 58.Undertake R&D in Production of mineral oxides  
 59.Undertake manufacturing of adhesives

Fruits and Vegetables department shall develop seven new products  
 60.Development of chicken feeds out of fruit waste  
 61.Development of jackfruit jam  
 62.Development of pomegranate juice  
 63.Development of sugar cane jam and syrup  
 64.Development of a healthy green tea drink  
 65.Development of a healthy cocktail (pumpkin, lemon & passion)  
 66.Development of pumpkin powder

Bamboo  
 67.Development of Biochar fertilizer now on market trail especially National Forestry Authority and Tea Growers.  
 The developed bamboo fertilizer products shall be analyzed monthly in different laboratories for product refinement  
 68.Two Products (Bamboo tooth Picks and Bamboo Mats) to be developed up to commercial stage  
 69.Toothpick and mat production, packaging and market testing, process and product refinement shall be undertaken. Bamboo, assorted processing chemicals and materials, packaging material to be procured  
 70.There shall be installation of Bamboo processing equipment, test running and commissioning of the Kabale Bamboo Processing Unit  
 71.There is a requirement to monitor & evaluate the Kabale Bamboo Process Department

ICT  
 72.UIRI shall undertake development of Mobile application platforms and

# Vote: 110 Uganda Industrial Research Institute

## 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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### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

testing mobile phones services for instance equip of staff with mobile apps development skills and providing SMS Messaging Development or equipping individuals with SMS software development skills

#### Button Mushroom

73.To further the research on Button Mushroom there is need to procurement of the following consumables, Millet grains, Urea, Muriate of potash (MOP), Supper phosphate, Insecticide (Dimilin ), Calcium carbonate, Wheat straw, Rice straw, Spawn bags, Wheat bran, Calcium ammonium nitrate (CAN), Gypsum, Black polythene bags, Big saucepans (stainless steel), Bench wipers, Cloths wipers, Parafilm''M'' Roll, Bunsen burner + Small gas cylinder

74.Wheat grains, molasses, Plastic containers for sterilization of substrate in the bunkers, Tapline 30x30 m long, Bags of rice grains for spawn production  
Water spraying pipe with a pump,  
Water pumper from the drainage for recycling water at the composting yard

#### Reasons for Variation in performance

With a shortfall of 1.9bn in Q3 a lot of Research and Development work has been deferred such as Stalling of Product Development work due to Lack of chemicals for analyzing the raw materials resulting from Budget Shortfall in the quarter or pending payment for subscription annual subscriptions like the AgriLASA membership among others

<b>Total</b>	<b>865,161</b>
<i>GoU Development</i>	865,161
<i>External Financing</i>	0
<i>NTR</i>	0

### Output: 06 5103 Industrial Incubation

	<i>Item</i>	<i>Spent</i>	
1.Expansion of Direct Access Distribution Strategy for Newcastle Vaccine. Following the successful completion of the novel pilot distribution mechanism in Eastern Uganda, The vaccine is to be launched nationwide. It will involve initially targeting distribution in 50 districts in the Northwest and Eastern parts of the	1. Under the Essential Oil Project (Natural Plant Products), 3,000 Rose geranium cuttings and 6,000 root splits of lemon balm rooted well and are due for planting during the August September session	223001 Property Expenses 224001 Medical and Agricultural supplies 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil	14,203 121,299 95,000 40,000
	2. Planting material for Lemon grass, Cinammon and Rosemary is to be introduced in April rains since those	228003 Maintenance – Machinery, Equipment & Furniture	90,314

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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
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US\$ Thousand

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

country. In 2015-2016 the vaccine department intends to implement the lessons learnt in the pilot distribution area in eastern Uganda to launch KUKUSTAR, the vaccine against Newcastle disease, nationwide to be accessible to all poultry farmers.

- There are currently 13 interested in Materials and Mineral Engineering Business incubation who shall be accessed aimed to create 30 jobs
- Establishing one dairy incubation centre in Ntungamo
- Monitoring and evaluation of virtual incubatees
- Consumables for bamboo plant to commercialize toothpick and mats production lines in Kabale and at UIRI
- Support towards sustainability & improvement of virtual incubatees' production capacity
- Take on four new incubatees under Production Systems i.e USSIA, IEN, Tropical Connections, IKN Holdings
- Trained incubatees Approval of requisitions for training materials
- New commercialised products Procurement of training materials
- Increased production capacity in the juice pilot plant
- New job opportunities Commercialisation of new products for incubatees
- Initiation and approval of a requisition for a batch pasteuriser
- Procurement of a batch pasteuriser
- Installation of the batch pasteuriser
- Improved product quality Refinement of existing products for incubatees i.e pineapple juice, pineapple jam, chillie sauce, mango cordial, mango juice, mango & orange cocktail, tropical cocktail, passion, orange juice
- Provide technical support for refinement of existing incubatee products
- undertake incubatee monitoring and evaluation of incubatees (both in-house and virtual)

oils are being sought after in the local market

- Briquette and packaging bags making from agricultural wastes in was undertaken in Kamengo-Mpigi District. This involves Carbonizing, crushing, mixing, pressing, drying and packaging of briquettes.
- 1,000 gift bags from cotton and waste paper are supplied to Rwanda Air per month by an incubatee
- 500 gift bags from cotton and waste paper are supplied to Igongo Cultural Centre Mbarara per month by an incubatee
- Premier dairies production at per month and other small scale incubates producing a range of milk products
- Bio ethanol project is being initiated
- 11 incubates under meat technology producing a range of beef, chicken, pork, rabbit, fish and sea food products

#### Reasons for Variation in performance

Shortfall in budget release for Q3 has greatly hindered the progress of the

# Vote: 110 Uganda Industrial Research Institute

## 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>US\$ Thousand</i>
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### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

Business and Technological Incubation Program

<b>Total</b>	<b>688,550</b>
<i>GoU Development</i>	688,550
<i>External Financing</i>	0
<i>NTR</i>	0

#### Output: 06 5104 Maintenance - Civil works

Establishment of Model Value Addition Centers has proved to impact on poverty reduction. The Established Model Value Addition Centers stimulate increased farm production. The farmers' area assured of ready market where they can generate some income. The centers assist on reduction of post-harvest losses as what is produced is processed. The Model Value addition centers are a skills and training hub for capacity building in farm production, post-harvest handling, processing and creation of employment and hence poverty reduction

The following Model Value Addition Establishments are at different stages as detailed here below

1. Establish a functional Fruit juice and water processing facility in Kawempe by modification of an existing processing facility
2. Development of new products for the centres and training of production staff
3. Establish a Model industry to manufacture the polylactic acid and make bioplastics; and cosmetics centre 1st, 2nd, 3rd and 4th Establish infrastructure for pilot plants and recruit personnel to manage the centres
4. Maziba Winery Project, Kabale Establishment of a complete functional processing winery plant whose construction work included a sub structure, walling and roofing, sanitary facilities, internal and external finishes, external works have been completed and handed over. Defects liability period supervision is underway.
5. Establishment of a Model Dairy Farm in Ntungamo  
The establishment of a model farm entails constructing a Dairy shade,

The following are rate of completion and status of Value Addition Centers being established by the Institute

1. Arua Savoury Classic meat processing Plant is 70% complete
2. Karubuga Model Dairy Farm in Ntungamo is 70% complete
3. Essential Oils Pilot Project, Luweero is 70% complete
4. Refurbishment of UIRI Chemistry Laboratory is 85% complete
5. Fruit juice processing plant in Ntungamo for Itojjo fruit growers Association is 80% complete
7. Proposed Peanut paste Processing plant in Soroti has not yet started
8. Rehabilitation of Esia mixed farm in Adjuman has not started
9. MAFFACO fruit processing facility for Masindi Fruit

<i>Item</i>	<i>Spent</i>
223004 Guard and Security services	7,000
228002 Maintenance - Vehicles	13,000

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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
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*UShs Thousand*

### Vote Function: 0651 Industrial Research

#### *Development Projects*

#### **Project 0430 Uganda Industrial Research Institute**

Feeding shade, Chaff Cutter shade, Milk collection area.  
Site has been handed over to the Contractor for commencement of work.

6.Extra works at Essential Oils Pilot Project Luweero  
Construction of allowed variation for additional scope to include office premises and wet areas is underway at 90% of works complete.

7.Construction of a nursery shed at Essential oils Luweero  
Construction of a nursery shed at Luweero Essential Oils is underway. Civil works Construction were completed. Welding works are pending

8.Proposed Fruit juice processing plant in Itojjo  
A functional fruit juice processing plant whose works include a substructure, walling and roofing, internal and external finishes is underway. Construction is ongoing and the substructure is complete

9.Proposed Cheese processing plant at Rubale Ntungamo District  
Works include to design for construction of the Cheese Processing Facility is underway. Site reconnaissance, to assess the nature of land, was done by the UIRI technical team on 17th Sep 2014. Bills of Quantities have been prepared.

10.Proposed Soap processing plant in Kabale Industrial Area for Yildi enterprisesis underway. Works to include Design for construction of the facility is underway. Site reconnaissance, to assess the nature of land, was done by the UIRI technical team on 17th Sep 2014. Preliminary estimates have been prepared.

11.Proposed rehabilitation of Esia mixed farm, Adjumani  
Rehabilitation of the facility and activity scope to be discussed with UIRI Management

12.Tile manufacturing facility in Wakiso  
Designs and Bills of Quantities have been prepared for establishment of a manufacturing facility for Tiles in Wakiso

13.Proposed Peanut Processing Plant in Soroti District  
The design is complete and preliminary estimates for a complete functional Peanut Paste Processing Plant in Soroti District have been prepared. A report has been submitted



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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
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*UShs Thousand*

### Vote Function: 0651 Industrial Research

#### *Development Projects*

#### **Project 0430 Uganda Industrial Research Institute**

for approval.

14. Development of a Fabrication Lab for small scale manufacturing of circuit boards and casings for complete prototypes. A Project proposal is currently being developed. A start-up meeting was convened inviting interested stakeholders for the project.

15. Internal Painting of selected Buildings at UIRI Design and BOQ's and implementation supervision of Internal painting of the plants are meant to improve the sanitary conditions of the facilities to enable them attain UNBS inspection standards. External painting is to improve the aesthetics and general outlook of the UIRI campus. Painting of toilets at the conference hall is complete. Painting in ceramics is on going

16. Proposed Chemistry Laboratory Refurbishment Model Chemistry A Model Chemistry laboratory to facilitate the research activities currently being undertaken is ongoing. Contractor was procured. Construction work scheduled to begin in Q3.

17. Proposed Renovation of TDC Engineering workshop floor A hard wearing suitable floor surface for activities being carried out on the workshop is required for reinforcement of workshop floor surface with terrazzo. Renovation works in the workshop floors commenced and are underway.

#### **Reasons for Variation in performance**

There has been a huge set back on fast tracking progress on establishing value addition centers due to the Q3 shortfall in cash release

<b>Total</b>	<b>199,017</b>
<i>GoU Development</i>	<i>199,017</i>
<i>External Financing</i>	<i>0</i>
<i>NTR</i>	<i>0</i>

**Output: 06 5105 Maintenance - Machinery and Equipment**

# Vote: 110 Uganda Industrial Research Institute

## 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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### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

		Item	Spent
1.Repair and maintenance of machinery and equipment for a well maintained pilot plant	There is continuous effort and planning to make sure that all UIRI equipment, machinery and civil infrastructure is maintained	228003 Maintenance – Machinery, Equipment & Furniture	247,459
2.Procurement and upgrading of the Existing Wastewater Treatment Plant with Advanced Immobilized Cell Reactor (AICR) Smart Treatment Plant (STP)	1.Repair and maintenance of electrical and electronic equipment on the UIRI campus. Based on client demand, the Instrumentation Team continuously works on several electrical and electronic faults in equipment around the UIRI campus. This quarter the division was able to troubleshoot and repair several items across Mechanical Engineering, Chemistry, Bakery, Security, Paper, Ceramics, Multimedia, IRC, Microbiology and Instrumentation. Most faults have been successfully repaired, those that haven't usually require specific parts that take time to procure (On-going)~20,000,000UGX (funds required to continue this activity)		
3.Establishment of a model wastewater treatment plant for training.	2.The HPLC was serviced and is operational		
4.Cleaning materials & protective wear	3.The analytical pH meter, drying ovens and water bath were calibrated by Uganda National Bureau of Standards		
5.Fuel For the Boiler and Standby Generator	4.The HTDS- PULSE Health Care experts serviced the HPLC in the Chemistry Laboratory		
6.Repair of Microwave Digestor(Multiwave 3000)	5.Maintenance contract for service and repair of Microbiology laboratory equipment was implemented to be undertaken by Palin Diagnostics.		
7. Repair the laboratory Refrigerator(EkoFrigoLab 1500) and Freeze Dryer (Telstar LyoAlfa 6)	Repair and maintenance of Microbiology laboratory equipment was supervised		
8.Undertake routine preventive maintenance for HPLC (2), AAS, CHN, and Uv/visible Spectrometer	6.Replacement of broken taps in the Dairy processing plant		
9.Undertake calibration of Analytical balance, 2 ovens, 2 muffle furnace, water bath & pH meter	7.Replacement of faulty water valves in Dairy pilot plant		
10.Repair of Food Laboratory fridges by replacing the fans and utilise the fridge for chilling/freezing samples	8.Unblocking of drainage in the pilot plant		
11.Repair of the centrifuge to separate sample components using the gabber centrifuge	9.Completed replacement of broken taps with new ones in the Dairy processing plant		
12.Procurement of testing equipment and kits for wastewater treatment plant. To ensure efficient and effective performance of the plant.	10.Completed repair of broken supply water pipe to the Business Development Center		
13.Construction and installation of new washrooms/toilet for the pilot plantTo improve on the hygiene and congestion during time of training	11.Completed replacement of water valve UIRI's guard resident		
14.Drilling and installation of the underground water.To cut down the water bills by 60% from NWSC and the money is used for other development.	12.Completed replacement of tap at Administration Block		
15.General servicing and repairs of Pilot plant	13.Completed servicing of 250Kva Generator		
16.3rd phase water overhaul (internal piping system)	14.Completed replacement of cables for the main power supply line		
17.To replace the corroded old pipe and improve on the pipe layout.	15.Completed servicing Administration block generator Set,		
18.Maintenance tools & equipmentTo improve on work efficiency and service delivery.			
19.Maintenance worksTo maintain better performance of the utility			
20.Professional capacity development trainingTo improve on skills and knowledge for better performance.			
21.UIRI facilities shall require			

# Vote: 110 Uganda Industrial Research Institute

## 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
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US\$ Thousand

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

fumigation services,	16.Completed repair of the dough mixer machine in bakery plant
22.Cleaning Materials to include fuel for mauler, toilet paper, soap(liters), detergents, toilet brushes, brooms, contracting rubbish disposal, towels, tarpaulins	17.Completed replacement of the parking gland and worn out Rubber shock absorber on coupling for the water pump in the chillers, dairy section
23.First Aid Boxes for the four pilot plants	18.Completed replacement of oil seals of the sausage machine in meat plant.
24.Microbiology and Biotechnology Equipment calibration	19.Completed repairs on the Bowl Cutter machine
25.Equipment service and preventative maintenance	20.Complete furnishing Dericorp office
26.Chemistry civil works Repairs & remodeling	21.Completed fabrication of Laboratory cabinet for Mega Milk (Incubatee)
27.General plant clean up and maintenance of the Materials and Mineral Engineering Division	22.Completed fabrication of shelves for Micro biology enzyme production
28.Functional machinery and equipment	23.Completed Construction of goat shelter for Ntungamu Farmers Association
29.Repair and maintenance of machinery	24.Completed other fabrications like: Looms, soap slicer
30.Repair of Kilns, Extruder and Ball mills of the Materials and Minerals Engineering Division	
31.Well maintained pilot plant and improvement of civil works	
32.Renovation of PCB Facility into a Fabrication Laboratory Kampala and equipment procurement. This shall require renovation of PCB lab	
Consultancy and procurement of equipment	
33.There shall be continued maintenance (Repair, replacement and servicing) of electrical and electronic appliances and Serviced equipment and appliances by Instrumentation Division	
34.Repair and creation of extra data ports in the BDC requires purchase of materials necessary and gear	
35.Hire of external company to undertake maintenance of over 30 printers	
36.Hire of external company to undertake maintenance of over 150 computer	
37.Replace ICT consumables like printers toners, computer accessories, fax ribbon, computer mice, keyboards, UPS batteries whenever applicable	

#### Reasons for Variation in performance

Same machine and equipment repairs were not undertaken due to the shortfall in the Q3 Release

# Vote: 110 Uganda Industrial Research Institute

## 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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### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

<b>Total</b>	<b>247,459</b>
<b>GoU Development</b>	<b>247,459</b>
<b>External Financing</b>	<b>0</b>
<b>NTR</b>	<b>0</b>

#### Output: 06 5106 Student Industrial Training and Capacity Building

1. Provide skilled & practical internship training to students	Under Industrial Skills Development and Capacity Building the following persons and groups have been exposed to Hands on Training in the following areas:
2. Train skilled SMEs	1.53 Students trained in dairy processing these included students of AFRISA and Agricultural college of Alexandria of Egypt
3. Train Small cottage industries for fruits and vegetables processing created	2. Two groups trained have been trained in chalk production - Luzira SDA church group and Maganjo youth Association. They had Lecture on gypsum material and hands on training in chalk production. There is need for a big chalk forming machine
4. Train SMEs in reduction of post-harvest losses	3.45 Primary teachers and SMEs in Mpigi district, 26 Women and 7 male were trained in Briquette and Hand Made Paper making
5. Hands on training for 6 people in bamboo processing skills, bamboo, processing chemicals, packaging material	4.23 students of Food Science and Technology from Bugema University were trained in food analysis
6. Three Internships to be offered in Molecular Biology & Biotechnology and Microbial analysis	5.23 students of Uganda Institute of Allied Health and Management sciences Mulago were trained in food analysis
7. Train 200 in cosmetics formulation, biotechnology and microbial analysis in Culture media, chemicals and reagents	6.15 students of Makerere University - Laboratory Science Education and Industry in food analysis
8. Training of production staff	7. Routine Laboratory training in Good lab practice for staff was undertaken
9. Train skilled & practical internship students in food processing and quality management	8. The Microbiology team trained 71 people in various skills including cosmetics making and lactic acid manufacturing.
10. Train skilled SMEs	9. A total of 29 students from Mulago School of Health Sciences and 2 private sector staff were trained in Microbial analytical skills
11. Train different groups that are establishing small cottage industries in reduction of post-harvest loss handling	10. 40 people had Hands-on- Skills training in cosmetics, soap, detergents & toiletry product formulation and development
12. Certifications to be done in Networking, Programming, hardware maintenance for Internal staff capacity strengthening	11. Trained 40 SMEs, 4 Graduates, 40 A level graduates students/ vaccists 30 Civil servants and 35 others a total of 149 in Business Development
13. Lira Peanut Research Processing Center shall train 150 farmers in Good Agricultural practices and Good post-harvest practices. This requires sensitization meetings and training materials	12. Trained 20 in Basic business startup principles
UIRI shall provide Instrumentation skills development	13. This course is coined to ensure that our clients get a pragmatic but holistic
14. Advanced Embedded Systems and Advanced applied electronics	
15. Hardware Description Language, Applied Instrumentation and Control Engineering	
16. Computer Applications and databases for embedded systems, Double sided PCB design and processing and surface mount technologies	
17. Real Time Operating Systems (RTOS) and Project and System Engineering Management	
18. Provide training to 5 people in	

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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
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US\$ Thousand

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

special skills relevant their Materials and Minerals Engineering skills gaps paradox

Chemistry laboratory

19. Train 100 students in Good

Laboratory Practice (GLP) and

chemical analysis. Makerere

University, Kyambogo University,

Mulago Paramedics, Uganda

Petroleum Institute Kigumba (UPIK)

ICT

20. Provide professional workshops &

conduct seminars regarding the legal,

Taxation & marketing aspects of a

business, understanding national

policy on industry and trade in the

East African Community

21. Provide enrolled incubates training

on how to start, manage a business

and incorporate ICT for business

efficiency ( both on site and outreach

programs)

22. Provide training in enhanced

records keeping & management, use of

ICT tools & corporate image, Business

Skills & Management Training,

Business development coaching with

emphasis on records management,

Corporate image improvement and the

use of ICT tools for efficiency and

profitability

23. A minimum of 2 and Maximum of

4 linkages established coordination of

round table meeting with financial

institutions, initialization of

collaboration with international and

local business development centers

24. Participate in BDC strategic

exchange programs with other

institutions for capacity building

25. Develop Customized Business

Development Courses and

Consultations, in Course designing &

development of course outlines,

Content development, Content

reviews, compilation, publishing of

course manuals and integration of

multimedia

26. At least two primary market

surveys carried out Analysis of

incubates business systems,

conceptualization of both manual and

possible automated systems, design,

testing and deployment of developed

systems

27. UIRI shall under take analysis of

incubates business systems,

conceptualization of both manual and

possible automated systems, design,

testing and deployment of developed

view of all aspects of how to start business, identify a suitable business model, manage the business from all perspectives such as personnel management, records keeping etc.

14. Gave guidance to 8 people on the process of business legalization in Uganda

Taking clients through the

steps of business registration

15. Gave guidance to 4 people on how

to develop a corporate business

Identity Combination of color schemes,

designs, words, etc., that a firm

employs to make a visual statement

about itself and to communicate its

business philosophy.

# Vote: 110 Uganda Industrial Research Institute

## 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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### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

systems  
28.Commercialization of the video conferencing facility. Video conferencing subscription fees to be established

#### Reasons for Variation in performance

N/A

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

### Output: 06 5107 Technology, Innovation, Transfer and Development

The Instrumentation division is undertaking the following

- 1.Temperature Monitoring and Control Project  
UIRI shall undertake further Development of prototype: Microcontroller communication with the EEPROM with the aim to maintain temperature between two set values. The project shall require assorted electronic components and specialized labor.
- 2.Frequency Receiver  
This will require further refinement of tested prototype that necessitates assorted electronic components and specialized labor
- 3.Infrared Thermometer  
The Initial prototype development and testing shall be undertaken requiring assorted electronic components, software, equipment, micro-controllers and other consumables
- 4.Digital Weighing Scale  
This Research and Development Project requires further refinement of output values, assorted electronic components and weights for calibration
- 5.Solar Chicken Egg Incubator  
The Research and Development Project requires further refinement of tested prototype: temperature and humidity sensing necessitating assorted electronic components, specialized labor
- 6.Indoor and Outdoor Lighting Project  
Requires further development of prototype necessitating assorted electronic components, software, equipment, micro-controllers,

Mekia Ltd. and CD Research Life Sciences by Philippa Makobore has been working closely with two teams that have been accepted into the incubation program with the Instrumentation Division. Mekia Ltd. is an embedded systems application development company and their flagship projects are a power theft detector and a transport monitoring unit. They are one of the top three finalists for the Africa Prize for Engineering Innovation funded by the Royal Academy of Engineering in the UK. The Instrumentation Division has worked together with Mekia to produce a close to industry ready fully functional prototype (migration from an arduino proof of concept) for the next stage of the Africa prize competition. CD Research Life Sciences is a group from Makerere University with backgrounds in microbiology and Immunology and they are working on a paper based diagnostic kit for early HIV detection and drug resistance. Their application for incubation has been approved and we are currently finalizing the MoU for their engagement.

# Vote: 110 Uganda Industrial Research Institute

## 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
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*UShs Thousand*

### Vote Function: 0651 Industrial Research

#### *Development Projects*

#### **Project 0430 Uganda Industrial Research Institute**

consumables

7. Scaling prototype for building implementation

Shall require assorted electronic components, software, equipment, micro-controllers, consumables

8. Energy Audit on actual power conservation using installed unit

The project is to be carried out with Energy Systems on assessment of efficient utilization of UIRI

power/electricity

9. Mutima Project - Diagnostic Tool for Pneumonia

The Mutima Project shall further development of Prototype by implementation of microcontroller to process input signals, Implementation of respiration measurement and testing of integrated prototype, pilot clinical trials. Acquiring of Clinical Trial Approvals (UNCST & IRB), Transport arrangements. There is need for assorted electronic components, software, equipment, micro-controllers, consumables

10. Implementation of respiration measurement

There is need for assorted electronic components, software, equipment, micro-controllers, consumables

11. Finger Print and Pin Code Access System

The Instrumentation Department shall undertake further development of Prototype: Implementation of finger print scanner requiring assorted material components, parts, building prototypes, consumables, specialized labor, specifically reliable for the implementation of prototype for access control of a building

12. Hybrid Controller for Solar and Wind Power Plant

Initial prototype development and lab testing shall be undertaken and this requires assorted materials, components parts, consumables, specialized labor

13. Scaling prototype for implementation in mini-power plant

The project requires assorted materials, components parts, building prototypes, consumables and specialized labor

14. UIRI Asset Management Solution

Initial RFID tag prototype to manage UIRI property shall be undertaken with the need to access cost effectiveness and scope. This requires assorted materials, components parts, controls,

# Vote: 110 Uganda Industrial Research Institute

## 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
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UShs Thousand

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

consumables

15.Solar Tracking Device

Initial prototype development and testing (Modular) shall be undertaken and requires assorted materials,

components parts, controls,

consumables and specialized labor

16.Electronically Controlled Gravity

Feed Intravenous Infusion Set

The Actuator Design, Integration of sensing, control and actuator modules

and testing shall be undertaken and

assorted materials, components parts,

building prototypes, consumable and

specialized labor shall be required.

Initial Clinical Trial

Approvals(UNCST &amp;IRB), patient

reimbursement, Transport

arrangements shall be undertaken

17.Smart Drip Irrigation System

Design, prototype development and

testing, acquisition of necessary

materials, fabricate units, and scaling

up to field implementation requires

assorted electronic components,

software, equipment, micro-

controllers, consumables , materials for

mechanical design of drip irrigation

System, Integration of electronic and

mechanical design, Scaling to field

implementation and initial

performance assessment

#### Reasons for Variation in performance

N/A

<b>Total</b>	<b>159,884</b>
<i>GoU Development</i>	<i>159,884</i>
<i>External Financing</i>	<i>0</i>
<i>NTR</i>	<i>0</i>

#### Output: 06 5108 Popularization of research and technologies

1.1 (ASBI Strategic Alliance and Ugandan Shea Platform quality)ASBI Shea Quality Training Workshops and certification1st QuarterTraining materials, logistics & trainer subsistence

2.8 Participation &Presentation at Conferences1st, 2nd, 3rd and 4th QuartersConference fees, travel logistics and allowances

3.8 PublicationsManuscript dev't and

The following have been undertaken during Q3

1.Through Institute Collaborations- Resource and knowledge sharing

The Instrumentation Division

continues to look for funding

opportunities and works closely with

its collaborators that include Prof.

Rolfe from Oxford BioHorizons Ltd.,

Dr. Kyle from Columbia University,

Dr. Robert Ssekitoleko from Makerere



# Vote: 110 Uganda Industrial Research Institute

## 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
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US\$ Thousand

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

<p>submission 1st, 2nd, 3rd and 4th Quarters Subscription fees and stationery</p> <p>4.Applications for Publications and Conferences, on Development of policy for maintenance systems for medical equipment</p> <p>5.UIRI shall host a two free full day Business Planning Workshop - to provide focus and support on the key areas of a business plan, helping participants take their businesses to the next level. UIRI fully qualified, experienced trainers will simplify the process of planning.</p> <p>6.Publish research findings of ICT capacity and readiness for Uganda. A research done under IRC mandate</p> <p>7.UIRI is scheduled to host the Uganda Mushroom day</p> <p>8.The Bamboo Department shall participate at 4 exhibitions in Mbale, Jinja, Mbarara &amp; Kampala. Hence the need to process and show case bamboo products developed</p> <p>9.Publication of a Training handbook on bamboo processing in Uganda. This involves collection of literature, publishing of draft, editing, publishing final copy</p>	<p>University and Dr. Sabrina Kitaka from the College of Health Sciences also at Makerere University. MoU with Columbia University in New York has been approved yet to receive signed copy of document. We have also engaged in a new partnership with Addis Ababa University's Center for Biomedical Engineering and Philippa visited the facility in January 2016 and met with faculty members. Drafting Grant Proposals and engaging our collaborators in various activities is ongoing. On going Cost assessed on a case by case basis</p> <p>2.A new paper first authored by Philippa Makobore entitled 'Medical Device Electronics Development in a Low Resource Setting: A Ugandan Perspective' has been accepted for oral presentation at the Canadian Medical and Biological Engineering Conference to be held in Calgary, Alberta, Canada from May 24-27. Philippa will be representing the Division at this conference.</p> <p>Ongoing As a division we will continue to identify suitable conferences and journals with which to publish our work. We are also in consultations to determine Intellectual Property protection for the ECGF Infusion Set Project. \$ 15,000 Awaiting Reimbursement from Accounts for trips to the World Congress in Toronto and the IEEE Africon Conference in Addis Ababa.</p> <p>3.Field visits and assessment conducted by UIRI</p> <ul style="list-style-type: none"> <li>•4th February 2016, Namutumba Bush Fire Association were trained in BEST PRACTICE bakery and confectionary</li> <li>•14th March 2016, Kwewayo Cooperative Society - Buikwe District assessment on appropriate economic activity to undertake</li> </ul> <p>4.During the Quarter UIRI published the following articles</p> <ul style="list-style-type: none"> <li>a)"5,000 Teso Farmers to benefit from value addition trainings"-20th January 2016</li> <li>b)"UIRI wins an innovation Award in California, USA"- 1st February 2016</li> <li>c)UIRI Article in the Women's Day Magazine Ministry of Gender -8th March, 2016</li> </ul> <p>5.Participated and exhibited at the Women's Day Celebrations – Kololo</p>
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# Vote: 110 Uganda Industrial Research Institute

## 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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### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

on 8th March 2016,  
6.conducted 7 Study tours to create public awareness of UIRI's activities and the opportunities

- a.KIBO Foundation
- b.SDA Church Luzira
- c.Rivers of Hope (ROH) Ministries
- d.KCCA
- e.Friends of Christ Assembly (FOCA) Kyanja
- f.Buganda Kingdom from Ssaza Kyaggwe
- g.Agri – Machinery Trade Mission from the Netherlands to Uganda

#### Reasons for Variation in performance

Promotion and awareness creation of UIRI's Research and Development results is still greatly underfunded. There is need for at least UGX 150M

<b>Total</b>	<b>0</b>
<i>GoU Development</i>	<i>0</i>
<i>External Financing</i>	<i>0</i>
<i>NTR</i>	<i>0</i>
<b>GRAND TOTAL</b>	<b>7,054,622</b>
<i>Wage Recurrent</i>	<i>2,788,088</i>
<i>Non Wage Recurrent</i>	<i>1,136,002</i>
<i>GoU Development</i>	<i>3,130,532</i>
<i>External Financing</i>	<i>0</i>
<i>NTR</i>	<i>0</i>

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

#### Recurrent Programmes

#### Programme 01 Headquarters

##### Outputs Provided

#### Output: 06 5101 Administration

		Item	Spent
Continued implementation of annual plans on quarterly basis	Recruited 3 New Employees	211102 Contract Staff Salaries (Incl. Casuals, Temporary)	929,597
	-Undertake staff training and skills development	211103 Allowances	24,000
	- Pay off current staff salaries and benefits	212101 Social Security Contributions	137,912
		213001 Medical expenses (To employees)	72,105
		221009 Welfare and Entertainment	24,830
		221017 Subscriptions	154
	- Insure Institute Assets Equipment, Vehicles, IT Servers and IT Equipment	222001 Telecommunications	33,000
		222003 Information and communications technology (ICT)	4,850
		223001 Property Expenses	14,415
		223004 Guard and Security services	18,000
		226001 Insurances	1,177
		227002 Travel abroad	11,000

#### Reasons for Variation in performance

Appeals for addition wage to enable the institute afford salaries and other employee benefits have not materialized hence the reason for low recruitment. UIRI requires 3.6bn to recruit and retain high caliber scientists and engineers

<b>Total</b>	<b>1,271,039</b>
<b>Wage Recurrent</b>	<b>929,597</b>
<b>Non Wage Recurrent</b>	<b>341,442</b>
<b>NTR</b>	<b>0</b>

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

##### Capital Purchases

#### Output: 06 5172 Government Buildings and Administrative Infrastructure

Continued implementation of annual plans on quarterly basis	<p>The following are rate of completion and status of Value Addition Centers being established by the Institute</p> <ol style="list-style-type: none"> <li>1. Arua Savoury Classic meat processing Plant is 70% complete</li> <li>2. Karubuga Model Diary Farm in Ntungamo is 70% complete</li> <li>3. Essential Oils Pilot Project, Luweero is 70% complete</li> <li>4. Refurbishment of UIRI Chemistry Laboratory is 85% complete</li> <li>5. Fruit juice processing plant in Ntungamo for Itojjo fruit growers Association is 80% complete</li> <li>7. Proposed Peanut paste Processing plant in Soroti has not yet started</li> <li>8. Rehabilitation of Esia mixed farm in Adjuman has not started</li> <li>9. MAFFACO fruit processing facility for Masindi Fruit</li> </ol>
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# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

#### Reasons for Variation in performance

Some projects have been deferred due to Q2 and Q3 shortfalls hence unable to undertake planned projects

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

#### Output: 06 5176 Purchase of Office and ICT Equipment, including Software

Continued implementation of annual plans on quarterly basis

- 1.Purchased Ncomputing cluster for BDC for St Theresa and St. Agnes
- 2.Purchased 7 modems from Smile Telecom to support key UIRI offices
- 3.Purchased Toner for IRC printer, Purchased stationery for Business Development Center.
- 4.Equipment maintenance was done in house by ICT Support Team
- 5.A multipurpose printer was purchased for the Mushroom Project
- 6.5 Desktop Computers were procured and delivered for the Chemistry Laboratory and are already being used
- 7.A laser Printer was purchased for Procurement and Disposal Unit
- 8.Paper was purchased for the Business Development Center.
- 9.Stationery including counter books, pens, markers, masking tape, cell tape, office glue, toner, printing receipts, delivery notes were purchased for the Business Development Center

#### Reasons for Variation in performance

The following items were deferred to FY 2016/2017 due to lack of funds as a result of shortfalls

- i.Enabling intercom communication with other sections/labs/departments at the institute
- ii.Acquiring of a printer for the food laboratory
- iii.Purchase of a storage and display cabin for the UIRI developed products

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

#### Output: 06 5177 Purchase of Specialised Machinery & Equipment

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

		Item	Spent
Continued implementation of annual plans on quarterly basis	The following are procurements of machinery and equipment status during Q3	312202 Machinery and Equipment	87,060
	1.Upgrading of the fresh milk pilot plant machinery - A new cold room for fresh milk Processing Pilot Plant was delivered, installed, tested and commissioned		
	2.Procurement of Kaganga Dairy Farm equipment has commenced		
	3.The Dairy Equipment for Karubuga Dairy Project has been delivered and is due for Installation upon 80% payment		
	4.A complete set of equipment for Handmade paper production has been delivered awaiting Installation and commercialization of Handmade paper Technology		
	5.Procurement process for 15,000 Liters of Furnace oil for the steam boiler is ongoing		
	6.Packaging Materials (Yoghurt bottles & lids) for dairy incubatees have been delivered		
	7.Received Components for the Development of the MUTIMA Project prototype		
	8.Received Op-Amp for MUTIMA project prototype		
	9.Procurement of Drilling Bits for CNC Machine is in Process		
	10.Procurement of Electronic components for Instrumentation Division Projects - International Order is in processing		
	11.Components Received Processing Payment pending availability of fund		
	12.Purchase of Development boards, printed circuit boards and microcontrollers		
	13.Completed the procurement process for Chemistry Laboratory furniture and laboratory fume hood		
	14.Completed the procurement process of vertical blinds for the Chemistry Laboratory.		
	3) Completed procurement of Chemistry Laboratory furniture.		

#### Reasons for Variation in performance

Slow and delay of many planned procurements due to Q3 budget shortfalls

Total

87,060

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

GoU Development	87,060
External Financing	0
NTR	0

#### Outputs Provided

#### Output: 06 5102 Research and Development

		Item	Spent
Continued implementation of annual plans on quarterly basis	The following are performance achievements in the area of Research and Development for the third quarter of FY 15/16 1. UIRI received US\$ 50,000 under a grant from the Patient Safety Movement which has accelerated development of the device. Development efforts have been focused on the ECGF Infusion Set with strict timelines to achieve the first fully automated prototype by the end of May. We foresee more interaction with clinicians as we continue to seek for funding. The Instrumentation Division is planning a clinical pilot in June for the ECGF Infusion Set. We are currently seeking FDA Approval in the USA to pilot at Intermountain Healthcare and CE mark certification in Europe. Neonatal and Maternal Healthcare Project/R&D of two medical devices/Status of Medical Equipment in the country/ possibly publishing papers on the status/Calibration, Repair and Maintenance Project for Medical Equipment/ ( Partners involved: College of Health Sciences, Makerere University Kampala and Oxford BioHorizons Ltd. UK, Columbia University in New York), Ernest Cook Ultrasound Research and Education Institute (ECRUEI)The Instrumentation Division received a 1st Place Innovation Award and US\$50,000 from the Patient Safety Movement Foundation in Dana Point, California on 22nd January 2016 for the Electronically Controlled Gravity Feed Infusion Set Project. Following this new development the Division has hired a consultant Systems Engineer from Germany and a team from Design without Borders to work on the casing desig of the Infusion Set. We have also engaged Dr. Robert Opoka on the project in addition to Dr. Sabrina Kitaka and a Nurse from the Children's Acute Care ward. A team of students from Columbia University are also scheduled to visit UIRI in June under	211102 Contract Staff Salaries (Incl. Casuals, Temporary) 212101 Social Security Contributions 223005 Electricity 223006 Water 227004 Fuel, Lubricants and Oils	154,942 7,470 51,625 5,146 6,409

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

the Venturewell Grant. We have also submitted 4 grant applications which we are waiting to here back from is ongoing

2. Research and Development of Agriculture based projects - Smart Drip Irrigation Project Design and Development of a Smart Drip Irrigation System. The Division is currently in advanced prototype design stages for the Smart Drip Irrigation System. Project Brainstorming sessions are held weekly on Wednesday mornings. The Instrumentation Team has split into two teams for the Electronics and Mechanical Design of the project to accelerate progress. The Division has been in consultation with Davis and Shirliff and is more recently going to engage iFDC an NGO focused on improving productivity along the Agricultural Value Chain. On-going - US\$6,500 (funding required)

Internal Projects (8): Automatic indoor/outdoor Lighting System, Solar Fruit Dryer, Keypad based door lock system, Solar Powered Egg incubator, Weighing Scale, Automatic Voltage Regulator, Multi-purpose Temperature control monitoring, Fingerprint and pin code based security access control system. Hardware design and analysis, Firmware design, simulation and prototyping is ongoing for these team oriented projects, electronic components have been received, however, they will need to be replenished as prototyping, hardware and software integration continues. Development of these projects are momentarily on hold as the focus is on fast tracking the ECGF infusion set. ~US\$13850.37 (worth of goods has been received as of Nov 2013) Awaiting procurement for US\$ 20,000 requisition (see above) to further develop projects.

3. Uganda Industrial Research Institute was awarded a certificate by Uganda Investment Authority for efficient Briquette and Hand Paper making technologies

4. Research is ongoing in  
 a) Production of biodegradable bags from banana fibres and waste paper  
 b) Production of cheap packaging bags for restaurants by folding and gluing of

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

corrugate medium paper produced from trees

c) Paper and other related products production from old boxes by recycling from old boxes and banana fibers

5. Researches for undergraduate students from Busitema University in production of packaging paper from maize ears, maize stems and waste paper is ongoing. 65 experiments successful conducted. 356 test samples made. The students are defending their results to their supervisors

6. Development of Whey Drinks from wastes from cheese processing -still on going

7. Formulation and research work on production of sand dusted pots involving Body formulation, Milling, casting, firing, decoration tested and attained good results. 3 pots have so far made

8. 200 boxes of dustless chalk were produced. However production is limited by lack of Plaster mixer and casting machine

9. Research on Button Mushroom: Only Oyster variety of mushroom can now be cultivated for commercial purpose in Uganda. All other varieties on market are only imported into the country and tagged expensively. Against this background, the Mushroom Technology Section at UIRI, focuses majorly on research in different globally economical mushroom varieties like Button, Shiitake, straw and Ganoderma mushrooms species. The development of the appropriate substrate formulations of these other commercial varieties will help in introduction of these mushroom varieties to our Ugandan society hence creating employment, income generation, global trading, and improvement of the food basket and the livelihood of our local people. Experimental research was done, various substrate formulations were developed and used, in some cases different available materials were tested and growing protocols developed. Yield was registered in only two formulations out of the five developed formulations

10.5 sugar bowls, 9 wall hangings, 6 tea cups were produced by Hand forming using potter's wheel



# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

11. Test work on different plaster formulations designing and making Models and molds for different products were successfully produced
12. Analyzed 75 laboratory samples for Chemical composition and certificates were issued
13. Microbial analysis was undertaken on 86 laboratory samples and certificates were issued.
- 14.4 on-going Research projects in the following areas include:
  - a) Antimicrobial activity of banana flowers extract against bacteria
  - b) Application of zeolites in removal of heavy metals in wastewater.
  - c) antimicrobial and anti-oxidant studies of essential oils from exotic plants
  - d) Formulation of sensitizers from aloe vera plant
15. Carried out routine Food, Chemistry and Microbiology Laboratory work
16. Lactic acid production from cassava: The production process is a simultaneous saccharification and fermentation (SSF) converting cassava starch to lactic acid in the same batch. Inoculum of selected bacteria (isolated at URI Biotechnology Centre) is added along with the substrate degrading enzymes (from Kess Biotech Inc, an incubatee at the centre). This "green technology" does not only reduce the cost of production by avoiding high energy consuming biomass liquefaction, but also leads to higher productivity by providing adequate sugar release and high conversion rate of 60% or more! It is moreover a simple process that can be done at microscale mimicking the traditional fermentation of tonto (a local brew).  
About 6kg of cassava on fresh weight basis would yield 1L of lactic acid of 88% concentration which would cost 150,000/ shillings or less at retail price. At the current retail market price, a heap of cassava which is about five kilograms costs 2000/= shillings.
17. Two nutritional supplements from pawpaw flesh and seeds have been developed
18. A process for extraction of papain enzyme has been developed.
19. Completed fabrication of a 1000Kg feed mixer, horizontal type
20. Completed fabrication of a 75kg

# Vote: 110 Uganda Industrial Research Institute

## 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

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

soya steamer and successfully tested  
21. Completed fabrication of a 10kg  
Peanut butter machine

#### Reasons for Variation in performance

With a shortfall of 1.9bn in Q3 a lot of Research and Development work has been deferred such as Stalling of Product Development work due to Lack of chemicals for analyzing the raw materials resulting from Budget Shortfall in the quarter or pending payment for subscription annual subscriptions like the AgriLASA membership among others

<b>Total</b>	<b>225,592</b>
<b>GoU Development</b>	225,592
<b>External Financing</b>	0
<b>NTR</b>	0

### Output: 06 5103 Industrial Incubation

	<i>Item</i>	<i>Spent</i>
Continued implementation of annual plans on quarterly basis	1. Development of a Fabrication Lab (Fab Lab Kampala) for small scale manufacturing of circuit boards and casings for complete prototypes. Currently the Civil Works Department is working on Construction details to remodel the PCB lab facility. The Instrumentation Division hosted a Makers Meet Up Event to sensitize the community on the upcoming Fab Lab project and the prospects for incubation in the Fab Lab. On-going. The Project Proposal was completed. Starting of project pends funding of 372,900,000UGX for the Implementation of the entire facility (Renovation/expansion of space/consultants/staff/ equipment procurement/workshops etc.)	223001 Property Expenses 632
	2. Ascertaining the Gold (Au) grades in ore samples picked from Karamoja region (Moroto & Abim) – for ECO client. Milled Gold Ore samples (passing 75 microns). The activities include Milling of raw material, Screen analysis on the milled ore, Weighing and labeling in preparation for the leaching tests. The Material were successfully milled and screen analysis completed	224001 Medical and Agricultural supplies 76,299 227004 Fuel, Lubricants and Oils 25,000 228001 Maintenance - Civil 15,000 228003 Maintenance – Machinery, Equipment & Furniture 14,516
	3. Under the Essential Oil Project (Natural Plant Products), 3,000 Rose geranium cuttings and 6,000 root splits of lemon balm rooted well and are due for planting during the August September session	

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

Development Projects

#### Project 0430 Uganda Industrial Research Institute

4.Planting material for Lemon grass, Cinnamon and Rosemary is to be introduced in April rains since those oils are being sought after in the local market

5.Briquette and packaging bags making from agricultural wastes in was undertaken in Kamengo-Mpigi District. This involves Carbonizing, crushing, mixing, pressing, drying and packaging of briquettes.

6.1,000 gift bags from cotton and waste paper are supplied to Rwanda Air per month by an incubatee

7.500 gift bags from cotton and waste paper are supplied to Igongo Cultural Centre Mbarara per month by an incubatee

8.Four incubatees were signed up and these include

- i.MEKIA
- ii.ALOESHA ORGANIC NATURAL HEALTH PRODUCTS LTD
- iii.GOLDEN CUTS UGANDA LIMITED
- iv.BUHARA TAILORING AND HANDCRAFT GROUP (BTHG)

9.Bio ethanol project is being initiated

#### Reasons for Variation in performance

Shortfall in budget release for Q3 has greatly hindered the progress of the Business and Technological Incubation Program

<b>Total</b>	<b>131,447</b>
<i>GoU Development</i>	<i>131,447</i>
<i>External Financing</i>	<i>0</i>
<i>NTR</i>	<i>0</i>

Output: 06 5104 Maintenance - Civil works

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

		Item	Spent
Continued implementation of annual plans on quarterly basis	The following are rate of completion and status of Value Addition Centers being established by the Institute	223004 Guard and Security services	7,000
	1. Arua Savoury Classic meat processing Plant is 70% complete	228002 Maintenance - Vehicles	3,000
	2. Karubuga Model Diary Farm in Ntungamo is 70% complete		
	3. Essential Oils Pilot Project, Luweero is 70% complete		
	4. Refurbishment of UIRI Chemistry Laboratory is 85% complete		
	5. Fruit juice processing plant in		
	6. Ntungamo for Itojjo fruit growers Association is 80% complete		
	7. Proposed Peanut paste Processing plant in Soroti has not yet started		
	8. Rehabilitation of Esia mixed farm in Adjuman has not started		
	9. MAFFACO fruit processing facility for Masindi Fruit		

#### Reasons for Variation in performance

There has been a huge set back on fast tracking progress on establishing value addition centers due to the Q3 shortfall in cash release

<b>Total</b>	<b>10,000</b>
<b>GoU Development</b>	<b>10,000</b>
<b>External Financing</b>	<b>0</b>
<b>NTR</b>	<b>0</b>

#### Output: 06 5105 Maintenance - Machinery and Equipment

		Item	Spent
Continued implementation of annual plans on quarterly basis	1.Repair and maintenance of electrical and electronic equipment on the UIRI campus. Based on client demand, the Instrumentation Team continuously works on several electrical and electronic faults in equipment around the UIRI campus. This quarter the division was able to troubleshoot and repair several items across Mechanical Engineering, Chemistry, Bakery, Security, Paper, Ceramics, Multimedia, IRC, Microbiology and Instrumentation. Most faults have been successfully repaired, those that haven't usually require specific parts that take time to procure (On-going)~20,000,000UGX (funds required to continue this activity)	228003 Maintenance – Machinery, Equipment & Furniture	20,284
	2.The HPLC was serviced and is operational		
	3.The analytical pH meter, drying ovens and water bath were calibrated by Uganda National Bureau of		

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

- Standards
- 4.The HTDS- PULSE Health Care experts serviced the HPLC in the Chemistry Laboratory
  - 5.Maintenance contract for service and repair of Microbiology laboratory equipment was implemented to be undertaken by Palin Diagnostics. Repair and maintenance of Microbiology laboratory equipment was supervised
  - 6.Replacement of broken taps in the Dairy processing plant
  - 7.Replacement of faulty water valves in Dairy pilot plant
  - 8.Unblocking of drainage in the pilot plant
  - 9.Completed replacement of broken taps with new ones in the Dairy processing plant
  - 10.Completed repair of broken supply water pipe to the Business Development Center
  - 11.Completed replacement of water valve UIRI's guard resident
  - 12.Completed replacement of tap at Administration Block
  - 13.Completed servicing of 250Kva Generator
  - 14.Completed replacement of cables for the main power supply line
  - 15.Completed servicing Administration block generator Set,
  - 16.Completed repair of the dough mixer machine in bakery plant
  - 17.Completed replacement of the parking gland and worn out Rubber shock absorber on coupling for the water pump in the chillers, dairy section
  - 18.Completed replacement of oil seals of the sausage machine in meat plant.
  - 19.Completed repairs on the Bowl Cutter machine
  - 20.Complete furnishing Dericorp office
  - 21.Completed fabrication of Laboratory cabinet for Mega Milk (Incubatee)
  - 22.Completed fabrication of shelves for Micro biology enzyme production
  - 23.Completed Construction of goat shelter for Ntungamu Farmers Association
  - 24.Completed other fabrications like: Looms, soap slicer

#### Reasons for Variation in performance

Same machine and equipment repairs were not undertaken due to the

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

Development Projects

#### Project 0430 Uganda Industrial Research Institute

shortfall in the Q3 Release

<b>Total</b>	<b>20,284</b>
<i>GoU Development</i>	20,284
<i>External Financing</i>	0
<i>NTR</i>	0

#### Output: 06 5106 Student Industrial Training and Capacity Building

Continued implementation of annual plans on quarterly basis

Under Industrial Skills Development and Capacity Building the following persons and groups have been exposed to Hands on Training in the following areas:

- 1.53 Students trained in dairy processing these included students of AFRISA and Agricultural college of Alexandria of Egypt
- 2.Two groups trained have been trained in chalk production - Luzira SDA church group and Maganjo youth Association. They had Lecture on gypsum material and hands on training in chalk production. There is need for a big chalk forming machine
- 3.45 Primary teachers and SMEs in Mpigi district, 26 Women and 7 male were trained in Briquette and Hand Made Paper making
- 4.23 students of Food Science and Technology from Bugema University were trained in food analysis
- 5.23 students of Uganda Institute of Allied Health and Management sciences Mulago were trained in food analysis
- 6.15 students of Makerere University - Laboratory Science Education and Industry in food analysis
- 7.Routine Laboratory training in Good lab practice for staff was undertaken
- 8.The Microbiology team trained 71 people in various skills including cosmetics making and lactic acid manufacturing.
- 9.A total of 29 students from Mulago School of Health Sciences and 2 private sector staff were trained in Microbial analytical skills
- 10.40 people had Hands –on- Skills training in cosmetics, soap, detergents & toiletry product formulation and development
- 11.Trained 40 SMEs, 4 Graduates, 40 A level graduates students/ vaccists 30 Civil servants and 35 others a total of

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

149 in Business Development  
 12. 1.Trained 20 in Basic business startup principles  
 12. Trained 20 in Basic business startup principles  
 13.This course is coined to ensure that our clients get a pragmatic but holistic view of all aspects of how to start business, identify a suitable business model, manage the business from all perspectives such as personnel management, records keeping etc.  
 14.Gave guidance to 8 people on the process of business legalization in Uganda Taking clients through the steps of business registration  
 15.Gave guidance to 4 people on how to develop a corporate business Identity. Combination of color schemes, designs, words, etc., that a firm employs to make a visual statement about itself and to communicate its business philosophy.

#### Reasons for Variation in performance

N/A

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

#### Output: 06 5107 Technology, Innovation, Transfer and Development

Continued implementation of annual plans on quarterly basis

Mekia Ltd. and CD Research Life Sciences by Philippa Makobore has been working closely with two teams that have been accepted into the incubation program with the Instrumentation Division. Mekia Ltd. is an embedded systems application development company and their flagship projects are a power theft detector and a transport monitoring unit. They are one of the top three finalists for the Africa Prize for Engineering Innovation funded by the Royal Academy of Engineering in the UK. The Instrumentation Division has worked together with Mekia to produce a close to industry ready fully functional prototype (migration from

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

an arduino proof of concept) for the next stage of the Africa prize competition. CD Research Life Sciences is a group from Makerere University with backgrounds in microbiology and Immunology and they are working on a paper based diagnostic kit for early HIV detection and drug resistance. Their application for incubation has been approved and we are currently finalizing the MoU for their engagement.

#### Reasons for Variation in performance

N/A

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

#### Output: 06 5108 Popularization of research and technologies

Continued implementation of annual plans on quarterly basis

The following have been undertaken during Q3

1. Through Institute Collaborations- Resource and knowledge sharing  
The Instrumentation Division continues to look for funding opportunities and works closely with its collaborators that include Prof. Rolfe from Oxford BioHorizons Ltd., Dr. Kyle from Columbia University, Dr. Robert Ssekitoleko from Makerere University and Dr. Sabrina Kitaka from the College of Health Sciences also at Makerere University. MoU with Columbia University in New York has been approved yet to receive signed copy of document. We have also engaged in a new partnership with Addis Ababa University's Center for Biomedical Engineering and Philippa visited the facility in January 2016 and met with faculty members. Drafting Grant Proposals and engaging our collaborators in various activities is ongoing. On going Cost assessed on a case by case basis
2. A new paper first authored by Philippa Makobore entitled 'Medical Device Electronics Development in a Low Resource Setting: A Ugandan Perspective' has been



# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

accepted for oral presentation at the Canadian Medical and Biological Engineering Conference to be held in Calgary, Alberta, Canada from May 24-27. Philippa will be representing the Division at this conference.

OngoingAs a division we will continue to identify suitable conferences and journals with which to publish our work. We are also in consultations to determine Intellectual Property protection for the ECGF Infusion Set Project.\$ 15,000Awaiting Reimbursement from Accounts for trips to the World Congress in Toronto and the IEEE Africon Conference in Addis Ababa.

3.Field visits and assessment conducted by UIRI

- 4th February 2016, Namutumba Bush Fire Association were trained in BEST PRACTICE bakery and confectionary
- 14th March 2016, Kweyayo Cooperative Society - Buikwe District assessment on appropriate economic activity to undertake

4.During the Quarter UIRI published the following articles

- a)“5,000 Teso Farmers to benefit from value addition trainings”-20th January 2016
- b)“UIRI wins an innovation Award in California, USA”- 1st February 2016
- c)UIRI Article in the Women’s Day Magazine Ministry of Gender -8th March,2016

5.Participated and exhibited at the Women’s Day Celebrations – Kololo on 8th March 2016,

6.conducted 7 Study tours to create public awareness of UIRI’s activities and the opportunities

- a.KIBO Foundation
- b.SDA Church Luzira
- c.Rivers of Hope (ROH) Ministries
- d.KCCA
- e.Friends of Christ Assembly (FOCA) Kyanja
- f.Buganda Kingdom from Ssaza Kyaggwe
- g.Agri – Machinery Trade Mission from the Netherlands to Uganda

#### Reasons for Variation in performance

Promotion and awareness creation of UIRI’s Research and Development

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 3: Outputs and Expenditure in Quarter

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

### Vote Function: 0651 Industrial Research

Development Projects

#### Project 0430 Uganda Industrial Research Institute

results is still greatly underfunded. There is need for at least UGX 150M

<b>Total</b>	<b>0</b>
<i>GoU Development</i>	0
<i>External Financing</i>	0
<i>NTR</i>	0
<b>GRAND TOTAL</b>	<b>1,745,423</b>
<i>Wage Recurrent</i>	929,597
<i>Non Wage Recurrent</i>	341,442
<i>GoU Development</i>	474,384
<i>External Financing</i>	0
<i>NTR</i>	0

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 4: Revised Workplan

Planned Outputs for the Quarter (Quantity and Location)	Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)	US\$ Thousand
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### Vote Function: 0651 Industrial Research

#### Recurrent Programmes

#### Programme 01 Headquarters

##### Outputs Provided

#### Output: 06 5101 Administration and Support Services

Item	Balance b/f	New Funds	Total	
Recruit 4 New Employees	211102 Contract Staff Salaries (Incl. Casuals, Temporary)	2,024	930,038	932,062
	212101 Social Security Contributions	0	90,389	90,389
-Undertake staff training and skills development	213001 Medical expenses (To employees)	9,140	48,755	57,895
	213004 Gratuity Expenses	0	391,423	391,423
- Pay off current staff salaries and benefits	221001 Advertising and Public Relations	10	20,200	20,210
	221003 Staff Training	0	15,397	15,397
- Insure Institute Assets Equipment, Vehicles, IT Servers and IT Equipment	221009 Welfare and Entertainment	170	20,000	20,170
	221011 Printing, Stationery, Photocopying and Binding	0	6,000	6,000
- Pay off Subscriptions if funds are released	221012 Small Office Equipment	76	19,898	19,974
	221017 Subscriptions	105	2,000	2,105
	222002 Postage and Courier	0	102	102
	223001 Property Expenses	15,585	20,000	35,585
	223004 Guard and Security services	0	20,000	20,000
	223006 Water	0	45,000	45,000
	226001 Insurances	144	8,000	8,144
	227001 Travel inland	1	8,944	8,945
	227002 Travel abroad	0	55,133	55,133
	227003 Carriage, Haulage, Freight and transport hire	108	7,500	7,608
	228002 Maintenance - Vehicles	49	0	49
	<b>Total</b>	<b>38,611</b>	<b>1,708,779</b>	<b>1,747,390</b>
	<i>Wage Recurrent</i>	2,024	930,038	932,062
	<i>Non Wage Recurrent</i>	36,587	778,742	815,329
	<i>NTR</i>	0	0	0

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

##### Capital Purchases

#### Output: 06 5172 Government Buildings and Administrative Infrastructure

Item	Balance b/f	New Funds	Total	
Complete infrastructure of establishments for research and value addition centers	312101 Non-Residential Buildings	94	662,143	662,237
	<b>Total</b>	<b>94</b>	<b>662,143</b>	<b>662,237</b>
	<i>GoU Development</i>	94	662,143	662,237
	<i>External Financing</i>	0	0	0
	<i>NTR</i>	0	0	0

#### Output: 06 5176 Purchase of Office and ICT Equipment, including Software

Item	Balance b/f	New Funds	Total	
Provide appropriate ICT solutions and functional systems and conducive environment that support continued research and development	312202 Machinery and Equipment	125	83,452	83,577
	<b>Total</b>	<b>125</b>	<b>83,452</b>	<b>83,577</b>
	<i>GoU Development</i>	125	83,452	83,577
	<i>External Financing</i>	0	0	0
	<i>NTR</i>	0	0	0

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 4: Revised Workplan

Planned Outputs for the Quarter (Quantity and Location)	Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)	UShs Thousand	
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### Vote Function: 0651 Industrial Research

#### Development Projects

#### Project 0430 Uganda Industrial Research Institute

#### Output: 06 5177 Purchase of Specialised Machinery & Equipment

Item	Balance b/f	New Funds	Total
Design and fabricate appropriated machinery and equipment	1,052	1,116,240	1,117,291
Procure easy to adapt machinery and equipment			
<b>Total</b>	<b>1,052</b>	<b>1,116,240</b>	<b>1,117,291</b>
<b>GoU Development</b>	<b>1,052</b>	<b>1,116,240</b>	<b>1,117,291</b>
<b>External Financing</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>NTR</b>	<b>0</b>	<b>0</b>	<b>0</b>

#### Outputs Provided

#### Output: 06 5102 Research and Development

Item	Balance b/f	New Funds	Total
Continue with ongoing R&D initiatives			
211102 Contract Staff Salaries (Incl. Casuals, Temporary)	12,911	165,000	177,911
212101 Social Security Contributions	53,658	0	53,658
213004 Gratuity Expenses	0	234,000	234,000
221003 Staff Training	0	24,125	24,125
221007 Books, Periodicals & Newspapers	22	0	22
221017 Subscriptions	449	5,424	5,873
223002 Rates	0	25,000	25,000
223005 Electricity	0	51,625	51,625
223006 Water	0	9,438	9,438
223007 Other Utilities- (fuel, gas, firewood, charcoal)	498	0	498
224004 Cleaning and Sanitation	0	57,000	57,000
224005 Uniforms, Beddings and Protective Gear	389	33,516	33,905
224006 Agricultural Supplies	71	51,115	51,186
227004 Fuel, Lubricants and Oils	261	20,000	20,261
<b>Total</b>	<b>68,526</b>	<b>676,243</b>	<b>744,769</b>
<b>GoU Development</b>	<b>68,526</b>	<b>676,243</b>	<b>744,769</b>
<b>External Financing</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>NTR</b>	<b>0</b>	<b>0</b>	<b>0</b>

#### Output: 06 5103 Industrial and technological Incubation

Item	Balance b/f	New Funds	Total
1.Continue with advisory and technical support to incubatees in the Industrial and Technological Incubator Program			
211103 Allowances	0	32,500	32,500
221003 Staff Training	0	30,000	30,000
221011 Printing, Stationery, Photocopying and Binding	0	5,500	5,500
222001 Telecommunications	0	1,500	1,500
223001 Property Expenses	797	35,000	35,797
223004 Guard and Security services	0	55,000	55,000
223005 Electricity	0	150,600	150,600
223007 Other Utilities- (fuel, gas, firewood, charcoal)	4,938	0	4,938
224001 Medical and Agricultural supplies	13,701	32,363	46,064
224004 Cleaning and Sanitation	0	35,200	35,200
224006 Agricultural Supplies	0	143,000	143,000
227001 Travel inland	29	15,261	15,290
227002 Travel abroad	0	29,002	29,002
227004 Fuel, Lubricants and Oils	0	10,770	10,770
228001 Maintenance - Civil	0	10,000	10,000
228002 Maintenance - Vehicles	0	116,138	116,138
228003 Maintenance – Machinery, Equipment & Furniture	29,686	175,100	204,786

# Vote: 110 Uganda Industrial Research Institute

## QUARTER 4: Revised Workplan

Planned Outputs for the Quarter (Quantity and Location)	Estimated Funds Available in Quarter (from balance brought forward and actual/expected releases)	UShs Thousand	
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### Vote Function: 0651 Industrial Research

Development Projects

#### Project 0430 Uganda Industrial Research Institute

	Total	49,150	876,934	926,084
<i>GoU Development</i>		49,150	876,934	926,084
<i>External Financing</i>		0	0	0
<i>NTR</i>		0	0	0

#### Output: 06 5104 Model Value Addition Centre Establishment

	Item	Balance b/f	New Funds	Total
Complete to 100% the Value Addition Centers being established if funds are availed	221009 Welfare and Entertainment	7,000	2,000	9,000
	223002 Rates	0	5,000	5,000
	223004 Guard and Security services	0	18,650	18,650
	223005 Electricity	0	751	751
	223006 Water	0	18,510	18,510
	224001 Medical and Agricultural supplies	182	33,692	33,874
	224006 Agricultural Supplies	0	0	0
	227004 Fuel, Lubricants and Oils	5,000	16,500	21,500
	228002 Maintenance - Vehicles	0	0	0
	228003 Maintenance – Machinery, Equipment & Furniture	1	102,455	102,456
	<b>Total</b>	<b>12,183</b>	<b>197,558</b>	<b>209,741</b>
	<i>GoU Development</i>	12,183	197,558	209,741
	<i>External Financing</i>	0	0	0
	<i>NTR</i>	0	0	0

#### Output: 06 5105 Facility Repair and Maintenance

	Item	Balance b/f	New Funds	Total
Keep UIRI Machinery & Equipment well maintained by carrying out routine maintenance, periodic checks and timely repairs	224004 Cleaning and Sanitation	0	45,000	45,000
	228003 Maintenance – Machinery, Equipment & Furniture	2,541	254,898	257,439
	<b>Total</b>	<b>2,541</b>	<b>299,898</b>	<b>302,439</b>
	<i>GoU Development</i>	2,541	299,898	302,439
	<i>External Financing</i>	0	0	0
	<i>NTR</i>	0	0	0

#### Output: 06 5107 Technology, Innovation, Transfer and Development

	Item	Balance b/f	New Funds	Total
Engage in cutting edge technology and innovative research for business and industrial solutions tailored for the Ugandan setting for ease adaptability	224006 Agricultural Supplies	116	180,000	180,116
	228003 Maintenance – Machinery, Equipment & Furniture	0	200,319	200,319
	<b>Total</b>	<b>116</b>	<b>380,319</b>	<b>380,434</b>
	<i>GoU Development</i>	116	380,319	380,434
	<i>External Financing</i>	0	0	0
	<i>NTR</i>	0	0	0

<b>GRAND TOTAL</b>	<b>172,398</b>	<b>6,001,566</b>	<b>3,494,781</b>
<i>Wage Recurrent</i>	2,024	930,038	932,062
<i>Non Wage Recurrent</i>	36,587	778,742	815,329
<i>GoU Development</i>	133,787	4,292,787	932,062
<i>External Financing</i>	0	0	815,329
	0	0	0

## Vote: 110 Uganda Industrial Research Institute

### Checklist for OBT Submissions made during QUARTER 4

This is an automated checklist which shows whether data has been entered into the areas which are required for a complete quarterly submission. It does not verify the quality of the data that has been entered. A complete checklist is therefore a necessary, but not sufficient condition for a satisfactory submission to MoFPED.

### Project and Programme Quarterly Performance Reports and Workplans (Step 2)

The table below shows whether output information, and where relevant donor and ntr data has been entered into the required areas for the quarterly performance reports and quarterly workplans under step 2.

#### Output Information

Vote Function, Project and Program	Q3 Report	Q4 Workplan
<b>0651 Industrial Research</b>		
○ Recurrent Programmes		
- 01 Headquarters	Data In	Data In
○ Development Projects		
- 0430 Uganda Industrial Research Institute	Data In	Data In

#### Donor Releases and Expenditure

#### NTR Releases and Expenditure

Vote Function, Project and Program	Q3 Report	Q4 Workplan
<b>0651 Industrial Research</b>		
○ Recurrent Programmes		
- 01 Headquarters	Data In	Data In

The table below shows whether data has been entered in the fields for key variances in budget execution under step 2.2 and 2.3:

### Vote Performance Summary (Step 3)

The table below shows whether information has been entered into the required fields in the vote performance summary tables for each vote functions under step 3.1:

Vote Function	Perf. Indicators	Output Summary	Actions
0651 Industrial Research	Data In	Data In	Data In

The table below shows whether data has been entered into the vote narrative fields under step 3.2:

	Narrative
Narrative	Data In