
Vote:110

 Uganda Industrial Research Institute

V1: Vote Overview

I. Vote Mission Statement

The Mission of the Institute is "To catalyze the socio-economic transformation of Uganda and the Region through enhanced Research and Development, and Technology use."

II. Strategic Objective

1. To undertake applied research for the development of products and optimal production processes, for Uganda's nascent industry.
2. To develop and /or acquire appreciate technology, in order to create a strong, effective and competitive industrial sector.
3. Act as a bridge between academia, government, and the private sector with respect to commercialization of innovation and research results.
4. Spearhead value addition activities in conjunction with national development priorities.
5. Lead the national effort in technology transfer and technology diffusion, to assure the development of appropriate technologies.

III. Major Achievements in 2020/21

The Machining Manufacturing Industrial Skilling Development Centre in Namanve, UIRI is experiencing its second phase targeting the transition of Uganda to reach the fourth technological industrial revolution where application of robotic engineering in developing spare parts and machines for the manufacturing sector as well adoption of appropriate technology conducive to the local context.

At the Advent of MMISDC, Uganda was hit by the COVID pandemic and the Uganda Industrial Research Institute proved its competence to mobilize local capacity into quality technology engagement. The Institute ably analyzed the required interventions to curb the spread of the Corona virus (COVID) and established a hub for the production of quality three layered facemasks. The mask product was studied in order to attain a standard with high proficiency in preventing the infection and adept in functionality with compliance to reuse among other benefits.

The Mask project trained and employed our very own Ugandan male and female tailors, at a critical point when many were uncertain of the mode of infection as well as had lost their livelihood due to the lockdown. It also offered Ugandans access to first-class masks produced at rate of 1,000,000 masks per month. These were officially supplied to the Uganda Ministry of Health for distribution to the Ugandan citizens to enable them stay safe and protect themselves from the deadly COVID-19 Virus.

UIRI went into a Memorandum of Understanding with the Norwegian Refugee Council (NRC) to train different Groups of Urban Refugees from DRC Congo, South Sudan and Rwanda. Under this MoU, 15 South Sudan Urban refugees under the United South Sudanese Urban Refugees Community Centre (USSURCC) located in Lukuli – Kalule Zone, they were skilled in the production of hand sanitizer, Detergents (bar soap, liquid soap, and bathing soap) and Cosmetics production (Vaseline, Creams and Lotions). These skills were specifically chosen for the Refugees by the teams from NRC and UIRI to enable them have a sustainable source of livelihood in the current era where hand sanitizers and detergents are on high demand to curb the ongoing Corona Virus Pandemic, not forgetting the Cosmetics that are a daily necessity in life.

UIRI also maintains a standing MoU with the Uganda Police Defense Forces (UPDF), in 2020 UIRI trained Soldiers, Spouses of the Soldiers and Retired Soldiers from 14 barracks across the country in Soap and Cosmetic production. UIRI has continued to partner with UPDF to skill and empower the forces and their spouses and those about to retire to enable them have hands-on skills for a sustainable livelihood

Additionally, the Institute donated soap making and weaving machines to the Stroke Foundation in order to support persons who had been affected to gain both the skills and means of income generation.

Coordinated the training of members of Holy Temple Church Group Namasuba alongside other entrepreneurs in Baking skills, 17th -21st /February/ 2020.

A training for young girls and boys and young mothers of school going age who were affected by the lockdown and were not in school was conducted in Omoro District. 23 young Trainees learned how to make Detergents (bar soap and liquid soap) and 22 learned to add value to fruits by producing juice, concentrates and tomato sauce. This was crucial for the youth given that they

Vote:110 Uganda Industrial Research Institute

were not attending school and instead of being lured into destructive activities for the boys and early pregnancies for the girl child, it was better to give them a skill to enable them start small business, keep active and earn money to fend for themselves when schools resume.

UIRI has added value to Bamboo as a substitute to wood products – Bamboo has recently been promoted in Uganda as a viable substitute to wood. In line with UIRI's mandate, the institute has continuously engaged in research and developed innovated products such as Bamboo construction material, interior design items, furniture, cutlery, gifts, tooth picks, cosmetics among others.

UIRI's work in this area in 2020 ventured into the production of activated charcoal from Bamboo for medicinal purposes. The Bamboo unit also started research on making bamboo beverages.

The Paper Pilot Plant processed sugarcane bagasse (dry sugarcane pulp) into paper adding to the number of plant materials being utilized in the production of handmade paper.

The Textile Unit capitalized on producing threads from cotton. This aimed at boosting the capacity of farmers to add value to cotton using a wooden manual spinning wheel. The Unit also produced silk threads extracted from the silk worm cocoons.

Improvement of the ECGF Biomedical Device

Following a successful year of piloting the Electrically Controlled Gravity Feed Infusion Set (ECGF), UIRI in 2020 started work on improving the device with the German African Innovation Incentive Award. The first workshop for this was held in June 2020. The goal of improving the ECGF is to commercialize it and garner more support for scaling it up to be used in health centers and hospitals to save patient's lives.

Adoption of the Mobile Diagnostic Device

UIRI partnered with the University of Glasgow to rally the adoption of the mobile diagnostic device which would be vital in diagnosing diseases such as malaria. The University had a prototype and UIRI was designated to be the partner organization that produces more samples of the prototype and sends to other partners in countries such as Ghana. It is anticipated that a larger grant is to be released for this project in 2021.

Production of Alcoholic and Non-Alcoholic Sanitizers

To combat the COVID pandemic, UIRI placed emphasis on the production of sanitizers. Research Teams from the Microbiology & Biotechnology Labs worked extra hard to develop the following innovative products;

- Non-alcoholic sanitizers for the comfort of citizens that distance themselves from alcohol because of religious, health beliefs or cultural restrictions regarding alcohol use.

- Hand Gel that acts as a substitute of soap to enable the citizens wash their hands and stay safe from the COVID-19 virus.

Alcoholic sanitizers were produced to meet the needs of all Ugandan citizens

Announced that UIRI had been added to the official list of certified companies by UNBS to produce non-medical facemasks for the Ugandan citizens

UIRI recruited the following enterprises into its Business Incubation Programme;

- Shama Confectionaries (Bakery)
- Nyumbani (Fish processing)
- Bambripa Innovation and Skilling Centre (Bamboo processing)
- Lisquick (Bamboo Processing) and
- KaCyber (IT).

As COVID-19 reined, UIRI encouraged its incubatees and Trainees to get certification particularly those producing hygiene products. Amour Group Limited producers of Amour Sanitizers were certified and received the Quality Mark for its product, Spencer Holding Limited got the Quality Mark for its Farms Finest Beef Sausages

UIRI was much honored to be a part of the development of the NRM Manifesto for the years 2021-2026. UIRI Staff and management were part of a bigger team of industrialists, scientists and researchers chosen by the President of Uganda, H.E Yoweri Kaguta Museveni to develop the new NRM Manifesto that was science led and industrial based to push the country to its national; development Plan of middle income status.

UIRI working with the Africa Agribusiness Incubation Network – The institute provided office space for the AAIN secretariat. This was important to enable close working relationship for the realization of the 6th Africa agribusiness incubation conference and exhibition (AAICE) that was selected globally to take place in Uganda and in particular at UIRI's Machining, Manufacturing Industrial Skills Development Centre(MMISDC).

UIRI also continues to work closely under the Memorandum of understanding with the Operation Wealth Creation (OWC) to skill communities and spread the word to encourage Ugandan citizens embrace industrialization. In this regard, the partnership held a Talk Show on Capital FM Radio where the Executive Director UIRI, Prof. Charles Kwesiga spoke about the Institute's establishment, activities, success and opportunities available for the Ugandan citizens. This led to more adverts and voice overs at the Radio station to keep the citizens informed about the Uganda Industrial Research Institute activities.

IV. Medium Term Plans

Vote:110 Uganda Industrial Research Institute

1. Create regional value addition centers to address product prevalent in specific regions
2. Promote and expand UIRI's Industrial and Technological Incubation Center and accelerate graduation of incubatees
3. Support operationalization of Machining and Manufacturing Production and Training Center for Industrial Skills Capacity Training
4. Innovate and develop technologies for uptake to foster Science Technology and Innovation Development

Vote:110

Uganda Industrial Research Institute

V. Snapshot Of Medium Term Budget Allocations

Table 5.1: Overview of Vote Expenditures (UShs Billion)

		2019/20 Outturn	2020/21		2021/22	MTEF Budget Projections			
			Approved Budget	Expenditure by End Dec		2022/23	2023/24	2024/25	2025/26
Recurrent	Wage	5.307	6.326	3.110	6.326	6.643	6.643	6.643	6.643
	Non Wage	11.955	11.598	2.996	11.598	11.598	11.598	11.598	11.598
Devt.	GoU	7.161	5.496	1.549	5.496	5.496	5.496	5.496	5.496
	Ext. Fin.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GoU Total		24.424	23.420	7.655	23.420	23.737	23.737	23.737	23.737
Total GoU+Ext Fin (MTEF)		24.424	23.420	7.655	23.420	23.737	23.737	23.737	23.737
	Arrears	1.576	0.606	1.021	0.000	0.000	0.000	0.000	0.000
Total Budget		26.000	24.027	8.676	23.420	23.737	23.737	23.737	23.737
A.I.A Total		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Grand Total		26.000	24.027	8.676	23.420	23.737	23.737	23.737	23.737
Total Vote Budget Excluding Arrears		24.424	23.420	7.655	23.420	23.737	23.737	23.737	23.737

Table 5.2: Budget Allocation by Programme (UShs Billion)

<i>Billion Uganda Shillings</i>	2021/22 Draft Estimates		
	GoU	Ext. Fin	Total
Innovation, Technology Development and Transfer	23.420	0.000	23.420
Grand Total :	23.420	0.000	23.420
Total excluding Arrears	23.420	0.000	23.420

VI. Budget By Economic Classification

Table V6.1 2020/21 and 2021/22 Budget Allocations by Item

<i>Billion Uganda Shillings</i>	2020/21 Approved Budget				2021/22 Draft Estimates		
	GoU	Ext. Fin	AIA	Total	GoU	Ext. Fin	Total
Output Class : Outputs Provided	17.924	0.000	0.000	17.924	17.924	0.000	17.924
211 Wages and Salaries	6.547	0.000	0.000	6.547	6.547	0.000	6.547
212 Social Contributions	0.633	0.000	0.000	0.633	0.633	0.000	0.633
213 Other Employee Costs	2.732	0.000	0.000	2.732	2.608	0.000	2.608
221 General Expenses	1.040	0.000	0.000	1.040	1.475	0.000	1.475
222 Communications	0.373	0.000	0.000	0.373	0.295	0.000	0.295
223 Utility and Property Expenses	2.176	0.000	0.000	2.176	2.083	0.000	2.083
224 Supplies and Services	0.675	0.000	0.000	0.675	0.802	0.000	0.802

Vote:110

Uganda Industrial Research Institute

225 Professional Services	0.160	0.000	0.000	0.160	0.100	0.000	0.100
226 Insurances and Licenses	0.086	0.000	0.000	0.086	0.200	0.000	0.200
227 Travel and Transport	0.564	0.000	0.000	0.564	1.120	0.000	1.120
228 Maintenance	2.923	0.000	0.000	2.923	2.047	0.000	2.047
282 Miscellaneous Other Expenses	0.015	0.000	0.000	0.015	0.015	0.000	0.015
Output Class : Capital Purchases	5.496	0.000	0.000	5.496	5.496	0.000	5.496
312 FIXED ASSETS	5.496	0.000	0.000	5.496	4.796	0.000	4.796
314 INVENTORIES (STOCKS AND STORES)	0.000	0.000	0.000	0.000	0.700	0.000	0.700
Output Class : Arrears	0.606	0.000	0.000	0.606	0.000	0.000	0.000
321 DOMESTIC	0.606	0.000	0.000	0.606	0.000	0.000	0.000
Grand Total :	24.027	0.000	0.000	24.027	23.420	0.000	23.420
Total excluding Arrears	23.420	0.000	0.000	23.420	23.420	0.000	23.420

VII. Budget By Sub-Subprogramme , Department And Project

Table V7.1: Past Expenditure Outturns and Medium Term Projections by Sub-SubProgramme,Department and Project

Billion Uganda shillings	FY 2019/20 Outturn	FY 2020/21		2021-22 Proposed Budget	Medium Term Projections			
		Approved Budget	Spent By End Dec		2022-23	2023-24	2024-25	2025-26
04 Industrial Research	26.000	24.027	8.676	23.420	23.737	23.737	23.737	23.737
01 Headquarters	18.051	18.531	7.127	17.924	18.241	18.241	18.241	18.241
0430 Uganda Industrial Research Institute	7.949	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1598 Retooling of Uganda Industrial Research Institute	0.000	5.496	1.549	5.496	5.496	5.496	5.496	5.496
Total for the Vote	26.000	24.027	8.676	23.420	23.737	23.737	23.737	23.737
Total Excluding Arrears	24.424	23.420	7.655	23.420	23.737	23.737	23.737	23.737

VIII. Sub-SubProgramme Performance and Medium Term Plans

Table V8.1: Sub-SubProgramme Outcome and Outcome Indicators

Sub-SubProgramme : 04 Industrial Research	
Objective :	<ol style="list-style-type: none"> 1. To undertake applied research for the development of products and optimal production processes, for Uganda's nascent industry. 2. To develop and /or acquire appropriate technology, in order to create a strong, effective and competitive industrial sector. 3. Act as a bridge between academia, government, and the private sector with respect to commercialization of innovation and research results. 4. Spearhead value addition activities in conjunction with national development priorities. 5. Lead the national effort in technology transfer and technology diffusion, to assure the development of

Vote:110

Uganda Industrial Research Institute

	appropriate technologies.				
Responsible Officer:	Prof. Charles Kwesiga				
Outcome:	Industrial Product Development and Technological Advancement				
<i>Sector Outcomes contributed to by the Programme Outcome</i>					
1. Increased technological and science uptake in development					
2. More technologies adopted					
Outcome Indicators	Performance Targets				
			2021/22	2022/23	2023/24
	Baseline	Base year	Target	Projection	Projection
• Number of Research Innovations developed	4	2020	6	8	12
• Number of developed and transferred Technologies utilized	4	2020	6	8	10
Department: 01 Headquarters					
Budget Output: 02 Research and Development					
Number of Analytical Services Provided			2,000	2,500	3,000
Number of Research and Development Projects Undertaken			12	15	20
Budget Output: 03 Industrial and technological Incubation					
Number of Startup Enterprises Incubated			5	6	8
Number of technologies developed and diffused to users			3	5	6
Budget Output: 04 Model Value Addition Centre Establishment					
No. of value addition centers established			2	3	3
Budget Output: 06 Industrial Skills Development and Capacity Building					
Number of Industrial Trainees & Research Students supported			200	280	330
Number of Technical and Vocational trainings conducted			3,000	400	500
Number of ICT trainings conducted			600	700	800
Budget Output: 07 Technology, Innovation, Transfer and Development					
No. of technologies developed			4	6	8
Number of Products and processes developed			7	8	10
Number of innovations and prototypes developed			3	5	6
Budget Output: 08 Popularization of research and technologies					
Number of Research publications achieved			3	4	6
Number of Exhibitions participated in			20	22	25
Number of media supplements on R&D Published			4	6	8
Number of Intellectual Property Rights Applications and Grants in Process			2	4	6

Vote:110 Uganda Industrial Research Institute

IX. Major Capital Investments And Changes In Resource Allocation

Table 9.1: Major Capital Investment (Capital Purchases outputs over 0.5Billion)

FY 2020/21		FY 2021/22
Appr. Budget and Planned Outputs	Expenditures and Achievements by end Dec	Proposed Budget and Planned Outputs
Vote 110 Uganda Industrial Research Institute		
<i>Sub-SubProgramme : 18 04 Industrial Research</i>		
Development Project : 1598 Retooling of Uganda Industrial Research Institute		
Budget Output: 18 04 72 Government Buildings and Administrative Infrastructure		
Construct non residential buildings for incubation centres and expansion of the existing facilities at UIRI	completion of drainage channel at namanve facility	Implement next phase of solar power installation at MMISDC, Namanve, to save on electricity consumption. Renovate and maintain existing buildings at Nakawa and Namanve campuses
Total Output Cost(Ushs Thousand)	400,000	125,440
Gou Dev't:	400,000	125,440
Ext Fin:	0	0
A.I.A:	0	0
Budget Output: 18 04 77 Purchase of Specialised Machinery & Equipment		
Procure bakery equipment for UIRI campus	Installation of face mask laboratory testing equipment	Purchase of Soxhlet Extraction apparatus for Advanced application & operation of analytical equipment to produce accurate test results
Purchase diary equipment for UIRI campus	Machine maintenance and training in MAZIBA wine factory, kabale district	Acquisition of Laboratory apparatus & glassware for microbiology, chemistry, food and biotechnology analytical laboratories
Procurement of laboratory equipment	Fabrication of a prototype for solar water heater, energy systems department.	Purchase of additional machinery, equipment & accessories not covered under the scope of the Chinese government grant that established the MMISDC at Namanve these include cutting gears & shafts, taper drills, dividing heads, centred wheels
Purchase of motor vehicles to replace UIRI's old fleet and for namanve project	Serviced the main batch pasteurizer machine	Purchase of firing Kiln (with spares and surger) for tile production at Ceramics Pilot Plant
	Installation and test running of the following face mask testing equipment delivered from Gester Instruments International: 1. Bacterial Filtration Efficiency Tester 2. Differential Pressure Tester 3. Breathability Tester	
	Fabrication of equipment for cosmetic technology , UIRI cosmetic section, {for production and commercialization of Hand sanitizer, Liquid soap detergent and hand Gels	
	Machining the hardened internal shaft of the roller for the bearings to fit and also doing the internal threading of its ends with thread taps.	
	Two Machines were dismantled to access the faulty parts that were replaced by new ones and reassembled. Machinery installation at textiles facility - Bwebajja	
	Machine maintenance and installation of palm fruit steam sterilizer for KANUNGU Palm oil factory	
	Fabrication of mixing/homogenizing tank for Koboko cosmetic factory	

Vote:110

Uganda Industrial Research Institute

Total Output Cost(Ushs Thousand)	4,316,000	1,352,421	4,666,000
Gou Dev't:	4,316,000	1,352,421	4,666,000
Ext Fin:	0	0	0
A.I.A:	0	0	0

X. Vote Challenges and Plans To Improve Performance

Vote Challenges

1. Inadequate facilitation impedes technology transfer, value addition, and commercialization of innovations
2. Less than optimal allocation of resources.
3. Inadequate pool of specialized scientists and engineers.
4. Unfunded mandates/projects and chronic shortfalls
5. Inadequate funding for R & D
6. Lack of skilled manpower for industry and limited entrepreneurship skills within the private sector

Plans to improve Vote Performance

1. Recruitment of more specialized scientists and engineers
2. Institutional collaborative initiatives with like-minded international organizations

XI Off Budget Support

Table 11.1 Off-Budget Support by Project

N/A

XII. Vote Cross Cutting Policy And Other Budgetary Issues

Table 12.1: Cross- Cutting Policy Issues

Issue Type: **HIV/AIDS**

Objective :	Provide medical insurance to HIV infected staff and their dependents, the package includes HIV counselling, trainings, HIV testing and treatment of HIV patients
Issue of Concern :	HIV/AIDS
Planned Interventions :	Providing medical insurance which covers HIV testing, treatment and counselling to affected staff and their
Budget Allocation (Billion) :	0.900
Performance Indicators:	Number of HIV positive staff covered by insurance policy

Issue Type: **Gender**

Objective :	develop and distribute sun screen lotions to the albino community in preventing skin cancer for albino communities
Issue of Concern :	Risk of getting skin cancer from radiation to albinos which causes death

Vote:110 Uganda Industrial Research Institute

Planned Interventions :	Continue developing and distributing sun screen lotions to the albino community in preventing screen cancer for albino communities
Budget Allocation (Billion) :	0.020
Performance Indicators:	Number of sun screen lotions developed and distributed to the albino community
Objective :	Reduce number of girl child school drop outs by providing affordable sanitary pads
Issue of Concern :	High rate of girl child school drop out
Planned Interventions :	Develop local sanitary pads, a sustainable and inclusive solution to girls and women empowerment in Uganda; Improving Girls health, dignity and confidence to engage actively in all income generation and livelihood activities and education
Budget Allocation (Billion) :	1.200
Performance Indicators:	Number of school going children supported with local affordable pads
Objective :	Prevent infant mortality by designing MUTIMA- Diagnostic tool for prevention of pneumonia in infants
Issue of Concern :	High infant mortality rates caused by pneumonia
Planned Interventions :	Integration of respiratory, heart rate and oximetry circuits for final design/ Casing design of MUTIMA- Diagnostic tool for prevention of pneumonia in infants
Budget Allocation (Billion) :	0.020
Performance Indicators:	Number of infants supported

Issue Type: Environment

Objective :	To develop technologies which are environmental friendly such as solar energy
Issue of Concern :	There is reduction of forest cover through increased deforestation
Planned Interventions :	continue promotion briquette as an alternative source of fuel from agricultural wastes such as maize stalk for rural communities which can not afford gas and depend on charcoal
Budget Allocation (Billion) :	0.030
Performance Indicators:	Number of local communities trained on the use of briquettes

XIII. Personnel Information

Table 13.1 Staff Establishment Analysis

Title	Salary Scale	Number Of Approved Positions	Number Of Filled Positions
Head Procurement and Disposal Unit	UIRI SC 3	1	0
Research Technician	UIRI SC 4	3	0
Security Officer	UIRI SC 4	1	0
Mechanical Technician	UIRI SC 5	4	0
Electrical Technician, Kabale Projects	UIRI SC 6	1	0
Production Technician	UIRI SC 6	1	0
Research Technician	UIRI SC 6	2	0
Machine Operator	UIRI SC 7	1	0
Energy System Engineer	UIRI SC 8	1	0

Vote:110

Uganda Industrial Research Institute

Table 13.2 Staff Recruitment Plan

Post Title	Salary Scale	No. Of Approved Posts	No Of Filled Posts	Vacant Posts	No. of Posts Cleared for Filling FY2021/22	Gross Salary Per Month (UGX)	Total Annual Salary (UGX)
Electrical Technician, Kabale Projects	UIRI SC 6	1	0	1	1	900,000	10,800,000
Energy System Engineer	UIRI SC 8	1	0	1	1	1,200,000	14,400,000
Head Procurement and Disposal Unit	UIRI SC 3	1	0	1	1	4,212,000	50,544,000
Machine Operator	UIRI SC 7	1	0	1	1	720,000	8,640,000
Mechanical Technician	UIRI SC 5	4	0	4	4	6,000,000	72,000,000
Production Technician	UIRI SC 6	1	0	1	1	720,000	8,640,000
Research Technician	UIRI SC 4	3	0	3	1	1,664,000	19,968,000
Research Technician	UIRI SC 6	2	0	2	2	2,177,280	26,127,360
Security Officer	UIRI SC 4	1	0	1	1	1,408,000	16,896,000
Total		15	0	15	13	19,001,280	228,015,360