



## **Science, Technology and Innovation Sector**

### **Semi-Annual Budget Monitoring Report**

**Financial Year 2018/19**

**April 2019**

Ministry of Finance, Planning and Economic Development  
P.O.Box 8147, Kampala  
[www.finance.go.ug](http://www.finance.go.ug)

## TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS .....	i
FOREWORD .....	iii
EXECUTIVE SUMMARY .....	iv
<b>CHAPTER 1: BACKGROUND.....</b>	<b>8</b>
1.1 Introduction .....	8
1.2 STI Sector Mandate.....	8
1.3 Sector Objectives.....	9
<b>CHAPTER 2: METHODOLOGY .....</b>	<b>10</b>
2.1 Scope .....	10
2.2 Methodology .....	10
2.3 Limitations of the report.....	12
<b>CHAPTER 3: SECTOR PERFORMANCE .....</b>	<b>13</b>
3.2 The Ministry of Science, Technology and Innovation (MoSTI).....	14
3.2.1 Science, Technology, and Innovation (STI) Regulation Programme .....	14
3.2.2 Science, Research and Development Programme.....	17
3.2.3 Uganda National Council for Science and Technology .....	23
3.2.4 Kiira Motors Corporation (KMC) .....	27
3.2.5 Presidential Initiative on Banana Industrial Development.....	29
3.2.6 Science Techno-prenuership Programme.....	30
3.2.7 Finance, Administration and Support Services Programme .....	33
3.3 Uganda Industrial Research Institute (UIRI) .....	37
3.3.1 Industrial Research Programme .....	38
<b>CHAPTER 4: CONCLUSION AND RECOMMENDATIONS.....</b>	<b>44</b>
4.1 CONCLUSION.....	44
4.2 RECOMMENDATIONS .....	44
REFERENCES .....	45
ANNEX.....	46

## ABBREVIATIONS AND ACRONYMS

BIRDC	Banana Industrial Research & Development Centre
CFI	Certificate of Financial Implication
CNC	Computer Numerical Control
EARSO	East African Research Organization
FAO	Food and Agricultural Organization
FY	Financial Year
GoU	Government of Uganda
HQCF	High Quality Cassava Flour
ICT	Information and Communication Technology
IFMS	Integrated Financial Management System
ISO	International Standards Organization
KIBP	Kampala Industrial and Business Park
KMC	Kiira Motors Corporation
MMSC	Machining and Skilling Centre
MIT	Massachusetts Institute of Technology
MDAs	Ministries, Departments and Agencies
M&E	Monitoring and Evaluation
MEMD	Ministry of Energy and Mineral Development
MFPEd	Ministry of Finance, Planning and Economic Development
MoSTI	Ministry of Science, Technology and Innovation
MoU	Memorandum of Understanding
NARO	National Agricultural Research Organization
NDP	National Development Plan
NTEISP	National Science, Technology Engineering and Innovation Skills Enhancement Project
PIBID	Presidential Initiative on Banana Industrial Development
PPDA	Public Procurement and Disposal of Public Assets Authority
R&D	Research and Development
ST&I	Science, Technology and Innovation
SMEs	Small and Medium Enterprises
UDC	Uganda Development Corporation
UEDCL	Uganda Electricity Distribution Company
UK	United Kingdom
Ug shs	Uganda shillings
UIRI	Uganda Industrial Research Institute
UNBS	Uganda National Bureau of Standards
UNCST	Uganda National Council for Science and Technology
UPDF	Uganda People's Defense Forces
UVQF	Uganda Vocational Qualification Framework
ZARDI	Zonal Agricultural Research Development Institutes

## FOREWORD

Over the years, the Government has implemented a number of interventions that have led to substantial progress in economic growth and national development which is now projected at 6.3% this Financial Year 2018/19 up from 6.1% attained last Financial Year 2017/18. As Government continues to pursue strategies for sustained growth and development, we should step up efforts in monitoring government programs and projects, to ensure that they are implemented in time and cost and any obstacles identified and addressed.

This report from the Budget Monitoring and Accountability Unit points to fair performance among the sectors monitored. It shows that most sectors achieved between 60%-79% of their planned semi-annual output targets. The fair performance points to the need for proper planning and commencement of procurement processes in time. This has resulted in slow absorption of funds and ultimately inadequate service delivery.

The sectors now have a quarter of the financial year to make good the promises made in terms of output and outcome targets. This is to urge all sectors to review the report and take necessary corrective actions to ensure effectiveness by end of the financial year.

Patrick Ocailap

  
**For Permanent Secretary/ Secretary to the Treasury**

## EXECUTIVE SUMMARY

This report presents findings of a review conducted on selected key Votes within the Science Technology and Innovation (STI) Sector based on approved plans and significance of budget allocations to the votes. Emphasis was placed on programmes with large development expenditures, although some recurrent expenditure was also tracked.

Projects selected for monitoring were based on regional representation, level of capital investment, planned annual outputs, and value of releases by 31<sup>st</sup> December 2018. The methodology adopted for monitoring included literature review of annual progress and performance reports; interviews with the respective responsible officers or representatives, and observations or physical verification of reported outputs. Physical performance was rated using weighted achievement of the set output targets by 31<sup>st</sup> December, 2018.

### FINDINGS

The sector coordinates all activities and programmes relating to research, science, technology and innovation. In FY2018/19, the sector budget was Ug shs 189.6 billion, of which Ug shs 35.22 billion (19%) was released and Ug shs 29.94 billion (85%) expended by 31<sup>st</sup> December 2018. Overall sector release was poor, while expenditure was good. The Ministry of Science, Technology and Innovations (MoSTI), Kiira Motors Corporation (KMC), Uganda Industrial Research Institute (UIRI), and Presidential Initiative on Banana Industrial Development (PIBID) had good release performance, whereas Uganda National Council for Science and Technology (UNCST) performed poorly at 2.8%.

### Overall performance

The half year performance was fair (65.6%). Most of the recurrent sub-programmes especially those under Finance and Administration Programme (MoSTI) exhibited good performance, while the development components performed poorly. This is attributed to the fact that some programmes did not realize the development budgets, late release of funds and delayed initiation of procurements. At programme level, the best performing was Finance, Administration and Support Services (86.23%) under MoSTI, while Science, Research and Development performed poorly (35.28%) across the sector. The other programmes ranged between fair to good (53% and 78%).

### Highlights of Sector Performance

**The Ministry of Science, Technology and Innovation:** The MoSTI is charged with the implementation of four programmes and they are: Science, Technology, and Innovation (STI) Regulation; Science, Research and Development; Technopreneurship; and Finance, Administration and Support Services.

**STI Regulation Programme:** Overall performance was good at 74.51%. Sensitization and awareness campaigns on STI regulation in the sub-regions of Rwenzori, Acholi, Bunyoro, and West Nile were conducted. Collaboration with bio-scientists and bio-innovators in Iran was initiated, and engagements with National Agricultural Research Organization (NARO) in Namulonge and Zonal Agricultural Research Institutes (ZARDIs) in the North and Bunyoro were undertaken.

**Science, Research and Development Programme:** The performance was poor at 35.28%. During the Parliamentary Week from 13<sup>th</sup>-19<sup>th</sup> January 2019, the MoSTI was able to profile some of the local innovations and technologies generated. Also, partnerships with European Union (EU) for funding of researchers under LEAP-AGRI arrangement; the UK Chief Advisor on Science and Technology, and other UK universities for possible collaborations were finalized. Under the Innovations and Intellectual Property Management sub-programme, awareness materials for; patents, trademarks, industrial designs, utility models, trade secrets, techno-vations and traditional knowledge were developed.

**Uganda National Council for Science and Technology:** This subvention registered some successes despite its development budget for FY 2018/19 not being approved by Parliament. A total of 17 scientists that benefited from the Innovations Fund during FY 2017/18 had started execution of their projects and were at varying levels of implementation. For example, Forest Fruit Foods in Bushenyi, Bugarama Super Wine in Sheema, and Maritus Wine in Bweyogerere, purchased holding tanks and assorted wine and juice making equipment, and were in the process of obtaining product certification from UNBS.

In addition, the Seri-Culture Project in Sheema District had established a 30-acre plantation of mulberry for feeding the silk larvae. However, it was noted that the plantation was not well maintained as zero resources were released during the period under review. The study on development of indigenous microbial mosquito larval pathogens for malaria vector control had progressed as scheduled. However, lack of additional resources was making the initial investment in the research wasteful.

Among the successes registered by the **Kiira Motor's Corporation (KMC)** subvention was the extension of water and electricity to the proposed site for construction of the automotive assembly plant at the Jinja Industrial Park. The MoU between KMC and the Uganda Peoples' Defence Forces Engineering Brigade was signed and mobilization and deployment of equipment was ongoing. By 31<sup>st</sup> January 2019, opening of the site (land) had started. Additionally, procurement of electric bus kits and charging stations was ongoing, and the feasibility study for Vehicle Assembly and Technology Transfer Partnership for the Kiira Vehicle Plant in Uganda was completed, and training of eight staff in various technical fields was ongoing. Despite the achievements, the project was behind schedule.

**Presidential Initiative on Banana Industrial Development (PIBID):** The PIBID budget for FY2018/19 was not appropriated by Parliament. However, a re-allocation of Ug shs 1.109 billion was made to maintain basic operations of the agency. The PIBID registered progress with most of the civil works; installation of a weighing bridge, furnishing of the laboratory and administration blocks, completion of external works, and installation of equipment owing to retained funds brought forward from the previous FY were completed. Research and development activities were ongoing including improvement of the sensory taste of the bakery and confectionary products.

There was no progress on the process of transitioning from a project to a Banana Industrial Research and Development Centre (BIRDC) pending issuance of a Certificate of Financial Implication (CFI). The agency was accumulating domestic arrears on wages, NSSF contributions and gratuity among others.

**Science Techno-prenuership Programme:** The performance was rated good (78.12%). Achievements were made as spinoffs, and start up technology enterprises were identified and

profiled. Sensitizations on technology enterprise development were conducted in Kyenjojo, Kyegegwa, Kamwenge, Kabarole, Kasese, Ntoroko, Bundibugyo and Bunyangabo districts. The STI partnership with Massachusetts Institute of Technology (MIT) was established. In addition, a consultation programme to identify models of enterprises and opportunities for technology enterprise development were conducted with LGs in Eastern region (Katakwi, Kaberamaido, Soroti and Amuria districts).

**Finance, Administration and Support Services Programme:** The performance was good (86.23%). Both the recurrent and development sub-programmes exhibited good performance as most of the planned activities were executed. A total of 42 technical staff and 64 common cadres were recruited and deployed to the respective departments, while the drafting of the sector development plan was ongoing. Under the retooling project of Institutional Support to MoSTI, two vehicles, assorted furniture, and ICT equipment and software were procured. Further still, salaries, wages, allowance and rent were paid. The good performance under this programme largely hinged on existing obligations such as salaries and rent that did not require strenuous procurement processes.

**Uganda Industrial Research Institute - Industrial Research Programme:** The performance was fair (53.7%). Construction of the Machining and Skilling Centre (MMSC) at the Kampala Industrial and Business Park - Namanve with a US\$30 million grant from the People's Republic of China was at 60% physical progress. The structures were substantially complete awaiting final finishes. However, non-availability of counterpart funding as per the MoU is likely to derail the recruitment, training of instructors and equipping of the facilities.

Certification of three potato products namely; salted, chilly and vinegar flavored crisps under the *Emondi* brand were initiated and the quality mark from UNBS was expected by end of the third quarter. The research on bamboo processing (toothpick making and other products) was ongoing in Kabale District.

The UIRI conducted trainings for various groups in areas of cosmetics production; soap, detergents, and toiletries production; value addition to fruits; and juice making. Trainings were also conducted in mechanical, electrical engineering and maintenance, carpentry, tailoring, and embroidery among others.

Renovation of the offices to host a DNA molecule analysis (ATCG) at UIRI campus was completed. Materials were purchased to complete the epoxy floor finish for the palm oil facility in Kanungu District, and installation of doors at the silk processing line facility in Sheema District was at 60%. Renovation of the peanut processing facility in Lira District was at 95%, while renovation and refurbishment of various facilities at the UIRI head offices was ongoing. Doses of Newcastle vaccines were produced and marketed across the country, and essential oil pilot plots were established with focus on *rose geranium* and *lemon balm*.

## **Challenges**

- i) The sector is faced with human resource and infrastructure gaps that hinder undertaking of science, technology and innovations activities.
- ii) The planned outputs/outcomes under UNCST support to scientists were differed as Parliament did not approve the development budget for the agency in FY2018/19. This also affected PIBID.

- iii) Lack of counterpart funding to leverage the support from donor funded research. Some external partners (such as South Africa) cancelled research collaboration with UNCST due to lack of financial commitment, the MMSC project at UIRI lacks counterpart funding as well.
- iv) Duplication of roles and activities by both the MoSTI and UNCST. A number of programmes and sub-programmes under the Ministry and the UNCST are similar.
- v) Intermittent and low quality power especially in Western Uganda leading to increased cost of production and loss of equipment.



## CHAPTER 1: BACKGROUND

### 1.1 Introduction

The mission of the Ministry of Finance, Planning and Economic Development (MFPED) is, “*To formulate sound economic policies, maximize revenue mobilization, ensure efficient allocation and accountability for public resources so as to achieve the most rapid and sustainable economic growth and development*”. It is in this regard that the ministry gradually enhanced resource mobilization efforts and stepped up funds disbursement to Ministries, Departments, Agencies and Local Governments in the past years to improve service delivery.

Although some improvements have been registered in citizens’ access to basic services, their quantity and quality remains unsatisfactory, particularly in the sectors of health, education, water and environment, agriculture and roads. The services being delivered are not commensurate to the resources that have been disbursed, signifying accountability and transparency problems in the user entities.

The Budget Monitoring and Accountability Unit (BMAU) was established in FY2008/09 in MFPED to provide comprehensive information for removing key implementation bottlenecks. The BMAU is charged with tracking implementation of selected government programmes or projects and observing how values of different financial and physical indicators change over time against stated goals and targets (how things are working). This is achieved through semi-annual and annual field monitoring exercises to verify receipt and application of funds by the user entities. Where applicable, beneficiaries are sampled to establish their level of satisfaction with the public service.

The BMAU prepares semi-annual and annual monitoring reports of selected government programmes and projects. The monitoring is confined to levels of inputs, outputs and outcomes in the following areas:

- Accountability
- Agriculture
- Infrastructure (Energy and Roads)
- Industrialization
- Information and Communication Technology
- Social services (Education, Health, and Water and Environment)
- Public Sector Management; and
- Science, Technology and Innovation

### 1.2 STI Sector Mandate

The Science, Technology and Innovations (STI) Sector was created in FY 2018/19 to coordinate all activities and programs relating to research, science, technology and innovation. The sector

has two votes and three subventions namely; 1) Vote 110: Uganda Industrial Research Institute (UIRI) and 2) Vote 023, Ministry of Science, Technology and Innovations (MoSTI); Kiira Motors Corporation (KMC), Uganda National Council for Science and Technology (UNCST), and the Presidential Initiative on Banana Industrial Development Project (PIBID) are the subventions under vote 023.

### **1.3 Sector Objectives**

The STI Sector is guided by four strategic objectives as provided in the second National Development Plan (NDP II):

- To enhance the integration of science, technology and innovation into the national development process.
- To increase transfer and adaptation of technologies
- To enhance research and development in Uganda and,
- To improve the science, technology and innovation legal and regulatory framework.

## **CHAPTER 2: METHODOLOGY**

### **2.1 Scope**

This report is based on selected programmes and projects in the Science, Technology and Innovation (ST&I) Sector. Selection of areas to monitor is based on a number of criteria:

- Significance of the budget allocations to the votes within the sector budgets, with focus being on large expenditure programmes. Preference is given to development expenditure although some recurrent costs are tracked.
- The programmes that had submitted Q2 progress reports for FY2018/19 were followed up for verification as they had specified output achievements.
- Multi-year programmes that were having major implementation issues were also visited.
- Potential of projects/programmes to contribute to sector and national priorities.
- For completed projects, monitoring focused on value for money, intermediate outcomes and beneficiary satisfaction.

This report reviews progress of programmes and projects implemented by the MoSTI, and UIRI by 31<sup>st</sup> December 2018. Annex 1 highlights the programmes and sub-programmes monitored during the semi-annual FY2018/19.

### **2.2 Methodology**

Physical performance of projects and outputs was assessed through monitoring a range of indicators and linking the progress to reported expenditure. Across all the projects and programmes monitored, the key variables assessed included: performance objectives and targets; inputs and outputs, and intermediate outcomes. Gender and equity commitments were also assessed.

#### **2.2.1 Sampling**

A combination of random and purposive sampling methods were used in selecting projects from the Ministerial Policy Statements and progress reports of the respective departments. Priority was given to monitoring outputs that were physically verifiable. In some instances, multi-stage sampling was undertaken at three levels: i) Sector programmes and projects ii) Local governments and iii) Project beneficiaries.

Outputs to be monitored are selected so that as much of Government of Uganda (GoU) development expenditure as possible is monitored during the field visits. Districts were selected so that as many regions of Uganda as possible are sampled throughout the year for effective representation.

#### **2.2.2 Data Collection**

Data was collected from various sources through a combination of approaches:

- Review of secondary data sources including: Ministerial Policy Statements for FY2018/19; National and Sector Budget Framework Papers; Sector project documents and performance reports from the Programme Budgeting System (PBS), Sector Quarterly Progress Reports and work plans, District Performance Reports, Budget Speech, Public Investment Plans, Approved Estimates of Revenue and Expenditure, and data from the Budget Website.
- Review and analysis of data from the Integrated Financial Management System (IFMS) and legacy system; Quarterly Performance Reports (Performance Form A and B) and bank statements from some implementing agencies.
- Consultations and key informant interviews with project managers in implementing agencies both at the Central and Local Government level.
- Field visits to project areas for primary data collection, observation and photography.
- Call-backs in some cases to triangulate information

### **2.2.3 Data Analysis**

The data was analyzed using both qualitative and quantitative approaches. Comparative analysis was done using the relative importance of the outputs and the overall weighted scores.

Relative importance (weight) of an output monitored was based on the amount of budget attached to it; thus the higher the budget the higher the contribution of the output to the sector performance. This was derived from the approved annual budget of each output divided by total annual budget of all outputs of a particular programme/project. The weight of the output and percentage achievement for each output were multiplied to derive the weighted physical performance. The overall programme/project performance is a summation of all weighted scores for its outputs. On the other hand, the overall sector performance is an average of individual programme performances that make up the sector.

The performance was rated on the basis of the criterion in Table 2.1.

**Table 2.1: Assessment guide to measure performance of projects monitored in FY2018/19**

<b>SCORE</b>	<b>COMMENT</b>
90% and above	<b>Very Good</b> (Most of the set targets achieved and funds absorbed)
70%-89%	<b>Good</b> (Some core set targets achieved and funds absorbed to 70%-89%)
50%- 69%	<b>Fair</b> (Few targets achieved and funds absorption is 50%-69%)
Less than 50%	<b>Poor</b> (No targets achieved and or funds absorption is less than 50%)

### **2.3 Limitations of the report**

The preparation of this report was constrained by a number of factors namely:

- Lack of detailed quarterly workplans and targets for some programmes/projects/outputs.
- Lack of disaggregated financial information for some outputs which might have affected the overall weighted scores and performance.
- Inadequate sampling of beneficiaries due to limited field time, given the large number of programmes monitored.
- A number of beneficiaries had little information on scope of works, project costs, contract periods particularly on projects contracted and implemented by UIRI.

## CHAPTER 3: SECTOR PERFORMANCE

### 3.1 Overall Sector Performance

Overall sector performance was fair, rated at 65.6%. Most of the recurrent sub-programmes especially those under Finance and Administration exhibited good performance, while the development component performed poorly. This is attributed to the fact that some programmes did not realize the development budgets, late releases and delayed procurement.

The UNCST poor performance is attributed to the zero release to the National Science, Technology Engineering and Innovation Skills Enhancement Project (NTEISP) project. Kiira Motors Corporation was in the process of mobilizing equipment to clear the site for construction of a car assembly plant although it was behind schedule. Lack of additional resources in FY 2018/19 under the Innovation Fund affected the development of indigenous microbial mosquito larval pathogens for malaria vector control and sericulture projects among others.

Despite the challenges encountered, the sector exhibited efficiency in resource utilization as most of the resources released were expended on the planned activities.

**Table 3.1: Science, Technology and Innovation Sector Performance by 31<sup>st</sup> December 2018**

Programme	Score (%)
Science, Technology, and Innovation (ST&I) Regulation	74.51
Science, Research and Development	35.28
Techno-prenuership	78.12
Finance, Administration and support services	86.23
Industrial research	53.70
<b>Average Performance</b>	<b>65.60</b>

*Source: Author's Compilation*

### Financial performance

The STI sector budget for FY2018/19 is Ug shs 189.6 billion, of which Ug shs 35.22 billion (19%) was released and Ug shs 29.94 billion (85%) spent by 31<sup>st</sup> December 2018. Overall sector release was poor, while expenditure was good. The MoSTI, KMC, and UIRI had good release performance whereas UNCST release performed poorly at 2.8%.

**Table 3.2: Overall Financial Performance of the STI Sector by 31<sup>st</sup> December, 2018**

Institution	Budget	Release	Expenditure	% Release	% Spent
MoSTI	23,758,855,000	10,715,761,477	6,637,450,883	45.1	61.9
KMC	24,000,000,000	13,150,711,298	12,152,000,000	54.8	92.4
PIBID	1,196,003,000	1,196,003,000	1,196,003,000	100.0	100.0
UNCST	126,613,775,000	3,495,773,092	3,495,773,092	2.8	100.0
UIRI	14,015,593,000	6,660,000,000	6,460,000,000	47.5	97.0

<b>TOTAL</b>	<b>189,584,226,000</b>	<b>35,218,248,867</b>	<b>29,941,226,975</b>	<b>18.6</b>	<b>85.0</b>
--------------	------------------------	-----------------------	-----------------------	-------------	-------------

*Source: IFMS, MDAs*

## **Vote performance**

### **3.2 The Ministry of Science, Technology and Innovation (MoSTI)**

In recognition of the need by Government to explicitly prioritize issues relating to the Science, Technology and Innovations (STI) as a key driver for economic development, The Ministry of Science, Technology and Innovation (MoSTI) was created in June 2016. The MoSTI's mandate is to: Provide policy guidance and coordination on matters of Scientific Research, Development and the entire National Innovation System in the country.

The Ministry executes its mandate through the programs of; i) Science, Technology and Innovation (STI) Regulation, ii) Science, Research and Development, iii) Techno-preneurship, and iv) Finance, Administration, Planning and other support services. The following subventions are also under the ministry; The Presidential Initiative on Banana Industrial Development (PIBID), Uganda National Council for Science and Technology (UNCST), and Kiira Motors Corporation (KMC).

The approved budget FY 2018/19, for the MoSTI is Ug shs 23.7 billion of which Ug shs 10.7 billion (45%) was released, and Ug shs 6.6 billion (62%) spent by 31<sup>st</sup> December 2018. Release performance was poor while expenditure was fair.

#### **3.2.1 Science, Technology, and Innovation (STI) Regulation Programme**

The programme is responsible for: Coordination of matters pertaining to STI standards, Development of policies, plans, programs and regulations on physical, chemical and social sciences; Bio-sciences and Bio-economy. It is also responsible for strengthening collaboration and cooperation on matters of bio-economy and bio-security/safety, and Coordinate implementation of policies, plans and programs pertaining regulations in STI.

Programme planned outputs FY2018/19 are: policies and regulations for physical, chemical, Social sciences, bio sciences, and bio economy developed and monitored; Departmental plans and budgets coordinated; Collaboration and cooperation strengthened for STI standards and regulations; and Safety regulations in STI research developed and procedures revised.

#### **Performance of the STI Regulation Programme**

The programme budget for FY 2018/19 is Ug shs 4.01 billion, of which Ug shs 1.0 billion (24.9%) was released and Ug shs 0.81 billion (81%) spent by 31<sup>st</sup> December 2018. Release performance was poor, while expenditure was good. Table 3.3 shows the STI Regulation Programme performance.

**Table 3.3: Performance of the Science, Technology, and Innovation Regulation Programme by 31<sup>st</sup> December 2018**

Sub-program/project	Output	Annual Budget ( Ug shs)	Cum. Receipt ( Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	Remark
Physical, chemical and social sciences	Policies, plans, programs and regulations in research development and innovations developed;	1,105,500,000	291,800,000	13	5	29.83	Sensitization, stakeholder engagement, and awareness campaigns on STI regulation in the sub-regions of Rwenzori, Acholi, Bunyoro, and West Nile were conducted.
	Safety regulations in physical, Chemical and social sciences research developed and innovations revised;						Engagements with National Agricultural Research Organization institutes in Namulonge and ZARDIS in the North and Bunyoro were undertaken.
	Implementation of policies and regulations for physical, chemical and Social sciences developments and innovations monitored.						A fact finding mission to PIBID in Bushenyi District with the Parliamentary Commission on STI was conducted.
Biosciences & Bio economy	Policies, plans, programs and regulations in Bio Sciences and Bio economy developed.	1,116,500,000	290,373,336	5	1.1	26.50	The MoSTI initiated collaboration with Bio-scientists and Bio-innovators in Iran.
	Safety regulations in physical, Chemical and social sciences research developed and innovations revised;						Not done due to inadequate release.



Sub-program/ project	Output	Annual Budget ( Ug shs)	Cum. Receipt ( Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	Remark
	Implementation of policies and regulations on bio-sciences and bio-economy						Not done.
Bio safety & Bio security	Policies, plans, programs and regulations in Bio Biosafety & Bio Security developed;	1,018,500,000	293,320,490	3	0.5	18.19	Departmental plan and budget for FY 2019/20 were prepared.
	Safety regulations in physical, chemical and social sciences research developed and innovations revised;						Activity carried forward to subsequent quarters.
	Collaboration and cooperation strengthened for STI standards, regulations						Not done.
STI standards & regulations	Collaboration and cooperation strengthened for STI standards, regulations						Output not undertaken due to limited funding.
	<b>Programme Performance ( Outputs)</b>					<b>74.51</b>	<b>Good performance</b>

**Source: IFMS, Progress reports, and field findings**

The programme registered good performance (74.51%) against received funds, however, most of the activities were not implemented due to inadequate funding and poor release (24.9%).

Under the programme, the MoSTI conducted sensitization and awareness campaigns on STI regulation in the sub-regions of Rwenzori, Acholi, Bunyoro, and West Nile. It undertook engagements with National Agricultural Research Organization (NARO) institutes in Namulonge and Zonal Agricultural Research Institutes (ZARDIs) in the North and Bunyoro. Collaboration with Bio-scientists and Bio-innovators in Iran were also initiated. The MoSTI also supported the development of the Sector Development Plan (SDP), budget estimates and departmental work plans.

### 3.2.2 Science, Research and Development Programme

The programme is responsible for: Coordination of multi-sectoral research and innovation activities, overseeing the development and implementation of research and innovation technology clusters, platforms, and programs. It also facilitates technology generation, assessment, transfer and adaptation, intellectual property acquisition and management and demonstration and piloting of new innovations and emerging technologies.

The programme planned outputs for FY2018/19 are: Research and development supported and jointly undertaken; Indigenous Innovations and technologies documented and promoted; Emerging technologies rationalized; Partnerships among artisans and other scientific knowledge interlocutors; Knowledge generators (researchers), knowledge transformers (industrialists and entrepreneurs) and end users (consumers) developed; Methodologies for exploitation of IPRs developed; STI Regional Centres of Excellence established: and Infrastructure development projects undertaken and coordinated.

#### Performance of the Science, Research and Development Programme

The programme budget for FY2018/19 is Ug shs 143.85billion, of which Ug shs 6.09 billion (4.2%) was released and Ug shs 5.74 billion (94.3%) spent by 31<sup>st</sup> December 2018. Release was poor and expenditure was very good. Overall programme performance was 35%. Table 3.4 shows the performance of the program outputs.

**Table 3.4: Performance of the Science, Research and Development Programme by 31<sup>st</sup> December 2018**

Program/ Project	Output	Annual Budget ( Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performan ce Score (%)	Remark
Research Promotion and Development	Research and development policies, plans, programs, standards and guidelines developed, reviewed and implemented;	1,195,000,000	373,809,596	8	5.6	0.77	Undertook SDP consultative meetings and policy review.
	Research and Development supported						Activity not done due to inadequate funds.
	Indigenous Innovations and technologies documented and promoted						Local innovations and technologies profiled during the Parliamentary Week (13 <sup>th</sup> -19 <sup>th</sup> January 2019).
	Research and practices regulated						Nine (9) research concepts were registered and

Program/ Project	Output	Annual Budget ( Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performan ce Score (%)	Remark
							approved.
	Prioritization and registration of research and development, progress and trends coordinated and monitored						Nine research concepts were registered and approved.
	Partnerships in knowledge generators (researchers), knowledge transformers (industrialists and entrepreneurs) and end users (consumers) coordinated						The MoSTI finalized partnerships with EU for funding of researchers under LEAP-AGRI. Meetings with the UK Chief Advisor on science and technology and other UK universities for possible collaborations were carried out.
	Departmental plans and budgets coordinated						Departmental plan and budget for financial year 2019/20 were finalised.
Technology Development	Policies, plans and guidelines on technology development and acquisition developed	1,112,500,000	302,039,616	9	4	0.71	Technical support was provided in the development of the STI Sector Development Plan.
	Emerging technologies rationalized						Not done due to insufficient funds.
	Technological community outreach undertaken						The MoSTI participated in 2 outreach activities covering Eastern Uganda and the Rwenzori sub-region.
	Partnerships among artisans and other scientific knowledge interlocutors; knowledge						Two (2) stakeholder conferences for connecting STI knowledge generators, interlocutors and users

Program/ Project	Output	Annual Budget ( Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performan ce Score (%)	Remark
	generators (researchers) knowledge transformers (industrialists and entrepreneurs) and end users (consumers) developed						were conducted.
	Transfer, negotiation & adaptation of appropriate technologies coordinated						Activity for Q3.
	Departmental plans and budgets coordinated						Two (2) departmental work plans and 2 departmental budgets were submitted to the Department of Policy & Planning.
Innovations and Intellectual Property Management	Departmental plans and Budgets coordinated	1,107,000,000	295,250,000	35.00	11.60	0.71	Departmental preliminary budget estimate and draft work plan for FY2019/20 were developed.
	Methodologies for exploitation of IPRs developed						Awareness materials for patents, trademarks, industrial designs, utility models, trade secrets, technovations and traditional knowledge were developed. Two (2) outreach workshops were conducted in (Kyenjojo, Kyegegwa, Kamwengye districts), (Kabarole, Kasese, Ntoroko, Bundibugyo and Bunyangabo districts).
	Research and development projects						Stakeholder engagements were

Program/ Project	Output	Annual Budget ( Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performan ce Score (%)	Remark
	jointly undertaken						undertaken on conducting joint R&D projects.
	Acquisition and registration of IPRs supported						Innovators and Scientists at the STI exhibition in Parliament were trained on intellectual property rights and management. A total of 80 innovators were profiled for future support.
STI Infrastructure Development	Frameworks and standards for science, technology and Innovation infrastructure developed.	1,085,350,000	290,065,000	15	6	0.7	No activity done.
	STI Regional Centers of Excellence established						Project proposal were developed.
	Departmental plans and Budgets coordinated						Departmental plan and budget for FY 2019/20 were prepared.
	Infrastructure development projects undertaken						Five (5) infrastructure project proposals were developed.
	Programs and projects for science, technology and innovation infrastructure coordinated						Consultative meetings were conducted in three Universities (Lira, Gulu and Muni), and Local Governments in Rwenzori, Lango, Bunyoro, Acholi and West Nile sub-regions.
	Science technology and innovation infrastructure developed and maintained						Five project proposals for infrastructure were developed. Other activities not done due to inadequate funding.

Program/ Project	Output	Annual Budget ( Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performan ce Score (%)	Remark
Kiira Motors Corporation	Vehicle Assembly Shop Superstructure (Slab, Support Columns and Roof Covering 6,200 SQM) and Kiira Vehicle Plant Offices (1,000 SQM) at the Jinja Industrial and Business Park Constructed	14,740,000,000	10,000,000,000	2	0	0	Kiira Vehicle Plant Start-Up Facilities Architectural, Structural, Engineering Drawings, Servicing Plan and Bill of Quantities (BoQs) were completed and approved by Jinja District.
	Electric Buses and Charging Stations Assembled and Deployed	4,540,000,000	781,739,373	1	0	0	Procurement process for the Electric Bus Kits and Charging Stations was ongoing.
	Automotive Local Content Participation Strategy Developed	40,000,000		1	0	0	The Situation Analysis of Automotive Local Content Participation in Uganda was completed. Some companies such as Uganda Batteries were identified.
	Sign the Principal Vehicle Assembly and Technology Transfer Partnerships	267,480,640	136,650,444	1	0.8	0.17	The Feasibility Study for Vehicle Assembly and Technology Transfer Partnership for the Kiira Vehicle Plant in Uganda were completed. A Non-Disclosure Agreement to explore a Contact Assembly partnership was signed.
	Undertake Staff Training	393,216,862	211,750,310	18	9	0.23	Eight (8) staff completed the Uganda Vocational Qualification Framework (UVQF) Competency Based Advanced Training Course in Welding and

Program/ Project	Output	Annual Budget ( Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performan ce Score (%)	Remark
							Metal Fabrication. Training Fees for CMMP, ACCA, Self-Driving Car Nano Degree, Car Design Course, Six Sigma Black Belt, and Bus KD Assembly (Bus Chassis, Web Frame, Body Construction) were paid to the training institutions.
	Local Content Strategy Dissemination Seminar, Key Stakeholders Tour of Site Development Projects, e-Bus Launch Event & Media Publications	228,822,250	128,822,250	3	2	0.15	Procurement process for media and publicity services was ongoing.
	General Office Administration	3,611,944,248	1,879,134,920	100	52	2.31	Renewal of Rental/Tenancy Agreement was delayed by the demise of the landlord.
	Concept Vehicle Development	30,000,000	12,614,000	100	50	0.02	ICE power train, exterior and interior trim integration were completed. The Kiira EV was serviced.
Uganda National Council for Science and Technology (UNCST)	Research Supervision & Monitoring undertaken, Annual National Research Ethics Conference Held Intellectual Property (IP clinics) conducted. 4 vehicles procured Furniture, equipment and ICT Equipment	126,613,775,000	3,495,773,000	100	1	29.37	Four vehicles, furniture, and ICT equipment were procured. Salaries and wages were paid. The development budget was not realized. This affected the beneficiaries of the Innovation Fund.
Presidential Initiative on Banana	Payment of salaries.	1,196,003,000	1,196,003,00	100	20	0.15	The PIBID expenditures were on salaries and wages as

Program/ Project	Output	Annual Budget ( Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performan ce Score (%)	Remark
Industrial Development (PIBID)			0				the development budget was not realized.
	<b>Programme Performance ( Outputs)</b>					<b>35.28</b>	<b>Poor performance</b>

*Source: MoSTI, PIBID, KMC*

A total of nine (9) research concepts were registered and approved. Under the Innovations and Intellectual Property Management, awareness materials for patents, trademarks, industrial designs, utility models, trade secrets, *techno-vations* and traditional knowledge were developed.

### 3.2.3 Uganda National Council for Science and Technology

The FY 2018/19 budget for Uganda National Council for Science and Technology (UNCST) is Ug shs 126.61 billion, of which Ug shs 3.49 billion was released and all spent by 31<sup>st</sup> December 2018. Appropriation of the development budget for UNCST for FY 2018/19 was differed.

#### Performance of UNCST

A total of 17 scientists who benefited from the Innovations Fund during FY 2017/18 had started execution of the projects and were at varying levels of implementation. The FY2018/19 half year monitoring sampled six beneficiaries and findings are presented hereafter.

**A) Forest Fruit Foods** in Bushenyi District was supported to commercialize local banana juice (*eshandy*). The allocated budget to this enterprise was Ug shs 339 million, of which 338.77 million was disbursed by January 2019. The funds were meant to facilitate acquisition of product certification (Quality mark) from the Uganda National Bureau of Standards (UNBS), develop a water source, equip the pilot plant with; haulage truck with 3,000litre stainless steel tank, water purification unit, and banana juice work stations. The fund was also to help the project acquire a 25KVA 3 phase generator, commercial gas sterilizer unit, and safety production wear.

By January 2019, a water source had been drilled and juice extraction equipment delivered. The procurement and delivery of 40 juice extraction troughs, installation of water filtration and purification system and obtaining of a UNBS Q mark were ongoing.

The procurement of the haulage truck delayed because suppliers did not have the trucks that meet the specifications of the project.





**Incomplete works on water abstraction well and factory premises for Forest Fruit foods in Bushenyi District**

**B) Bugarama Super Wine** in Sheema District received support for scaling up production and distribution of wine. The project was allocated Ug shs 68 million, of which Ug shs 64.77 million was disbursed and all spent by January 2019. The project acquired wine production equipment including a bottle filler, sterilizer, bottle washer, hot air gun, fermentation tanks, super jet machine, filtering pads and assorted lab equipment. It also procured packaging materials (bottles, boxes, product labels, stoppers, seals, normal sugar and other ingredients). Obtaining of a UNBS Quality Mark and Intellectual Property (IP) were pending. The project reported increase in wine production from 20,000 litres to 40,000 litres per month, reduced filtering time from 30-40 minutes to 5 minutes per 20 litres, and increased market for the wine.

**C) Production of Tropical fruits wines** for improved rural household incomes and reduced post-harvest losses under **M/s Maritus Wine** in Bweyogerere-Wakiso had an allocation of Ug shs 170 million, which was all disbursed and expended by end of January 2019.



**Some of the bottled wines, and factory constructed with the Innovation funds at Bweyogerere**

Funds were used to refurbish the production facility, purchase packaging materials, acquire processing equipment; storage tanks, filtration machine, wine testing equipment and juice making equipment.

The company registered with the Uganda Registration Services Bureau (URSB) for Intellectual Property (IP). Acquisition of a UNBS Quality mark was ongoing. After the intervention, production more than doubled from 500 liters per month to 1,200 liters.

**D)The Sericulture Project** in Sheema District aims at increasing the production of silk in Uganda. The grantee was allocated a budget of Ug shs 1.526 billion, of which Ug shs 1.495 billion was disbursed by January 2019. The project supported two outgrowers to refurbish rearing houses, procured 2,000 cocoon beds, 50 rearing beds with 150 shelves, procured a double cabin pickup, constructed a 100,000 cubic metre dam, and trained 400 farmers. The project set up a furrow irrigation system, procured a project vehicle, water pump, and established a 30 acres plantation of mulberry for feeding the silk larvae however, the plantation was not well maintained as zero resources were released during the period under review (FY 2018/19).



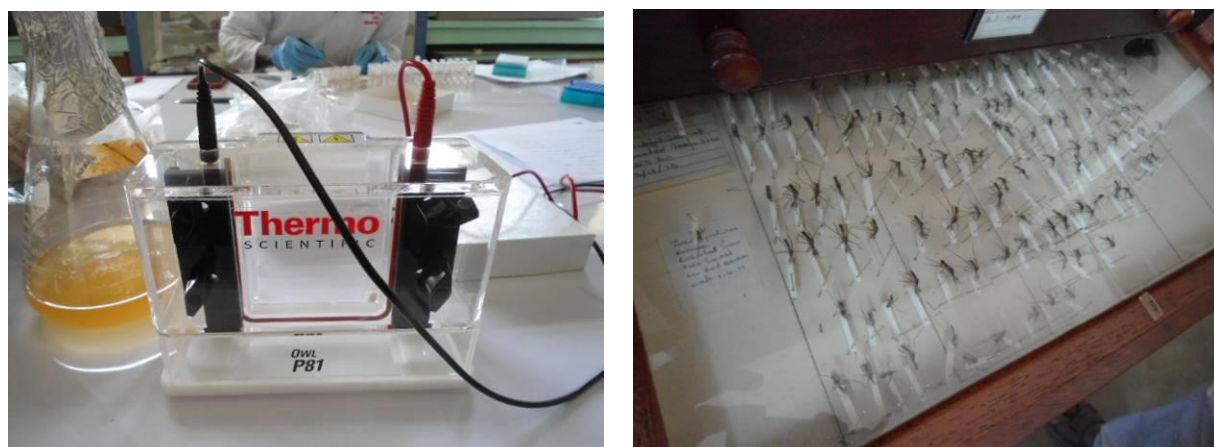
**Project vehicle, dam for irrigation, and part of the mother garden for mulberry in Sheema Sericulture Project**

The pending activities included completion of the construction of; silkworm rearing houses, incubation house with an office, and rehabilitation of office space and equipment.





**Silk worms feeding on mulberry, silk cocoons and ongoing construction of the rearing houses in Sheema District**



**Laboratory equipment and reagents procured for the study, and pinned mosquito samples at UVRI-Entebbe**

**E) The study on development of indigenous microbial mosquito larval pathogens for malaria vector control** housed at Uganda Virus Research Institute was allocated a budget of Ug shs 113 million, of which Ug shs 94.24 million was disbursed. By January 2019, project implementation was ongoing at a rather low pace. The study had achieved isolation of entomopathogenic bacteria to purification of the larvicidal toxin produced by the bacteria. Three isolates; *Bacillus cereus*, *Bacillus anthracis* and *Bacillus thuringiensis*) were selected basing on their high larvicidal activity out of the total twenty-one isolates. However, the lack of additional resources in FY 2018/19 affected the cloning and identification of toxins that kill the mosquito larvae, and the study of efficacy, safety and selectivity between target and non-target organisms of the purified toxins. This was making the initial investment wasteful.

**F) Improving livelihoods of rural communities through cassava processing and value addition project** in Lira and Kole districts received a budget allocation of Ug shs 85 million, which was all disbursed and expended by January 2019. The outputs implemented included leasing of 100 acres of land for cassava seed multiplication and production gardens,

procurement of packaging materials, purchase of weeding machine, and advertising in print and electronic media.

The demonstration and seed multiplication gardens (40 acres and 30 acres) were established in Kole district. The enterprise was manufacturing High Quality Cassava Flour (HQCF) and marketing it in the region. The pending activities by January 2019 included: delivery of a hydraulic press and product certification.

Overall performance of the development budget for the UNCST was poor, with the National Science, Technology Engineering and Innovation Skills Enhancement Project (NTEISP) which constituted 66% of the overall approved estimates to Vote 023 at zero (0%) release.



**Part of the NAROCAS 19 cassava seed multiplication garden and packaged HQCF in Kole and Lira respectively supported by the Innovations Fund**

### 3.2.4 Kiira Motors Corporation (KMC)

Established in 2014, Kiira Motors Corporation (KMC) intends to set up the first automotive manufacturing plant in Uganda. The KMC investment is thus poised to catalyze innovations and industrialization leading to savings in foreign exchange; economic diversification; attraction of foreign direct investment and development of skills relevant for developing a sustainable automotive value chain in Uganda. Cabinet approved a disbursement plan for the commercialization of the Kiira Electric Vehicle project over a period of four years as follows: Ug shs 24 billion for FY 2018/19, Ug shs 44 billion for FY2019/20; Ug shs 43 billion for FY2020/21, and Ug shs 32.7 billion for FY 2021/22.

During FY2018/19, the approved budget for Kiira Motor's Corporation is Ug shs 24 billion, of which Ug shs 13 billion (54.8%) was released and Ug shs 12 billion (92.4%) expended by 31<sup>st</sup> December 2018. Both release and expenditure performances were very good.

During FY2017/18, water and electricity were extended to the proposed site for construction of the automotive assembly plant at the Jinja Industrial Park.

## Physical Performance

In September 2018, the Memorandum of Understanding between KMC and the National Enterprise Corporation (NEC) for the construction of the Kiira Vehicle Plant start-up facilities at the Jinja Industrial and Business Park was cleared and signed by the Office of the Solicitor General.



**Kiira EVS vehicle at Shell Ambercourt Jinja, and a power transmission line at the project site**



**Mounted transformer and ongoing site opening at KMC-Jinja**

This paved way for construction of the initial Kiira Vehicle Plant start-up facilities. By January 2019, the Uganda People's Defence Forces (UPDF) Engineering Brigade was finalizing mobilization and deployment of equipment as well as undertaking initial site opening works.

The procurement process for the electric bus kits and charging stations was ongoing and the contract was forwarded to the supplier for signing. The Public Procurement and Disposal of Public Assets Authority (PPDA) approved the accreditation of an Alternative Procurement System for Suppliers of Automotive Parts for the Kiira Vehicle Plant and a situation analysis of Automotive Local Content Participation in Uganda was completed.



The feasibility study for Vehicle Assembly and Technology Transfer Partnership for the Kiira Vehicle Plant in Uganda was completed and a Non-Disclosure Agreement to explore a Contact Assembly partnership was signed.

In terms of capacity building, eight (8) staff completed the Uganda Vocational Qualification Framework (UVQF) Competency Based Advanced Training Course in Welding and Metal Fabrication, while training fees for Bus Knock Down (KD) Assembly (Bus Chassis, Web Frame, Body Construction), CMMP, ACCA, Self-Driving Car Nano Degree, Car Design Course, and Six Sigma Black Belt were paid. Overall project performance was fair. The project was behind schedule.

### **Challenges**

- The prolonged response time by key actors in the stakeholder community led to late start of the project and implementation of key activities.
- The delayed transfer of KMC stock from the UDC to the Ministry of Science Technology and Innovation affected the full constitution of the KMC Board of Directors.

### **Recommendations**

- The KMC and MoSTI should enhance stakeholder engagement to appreciate the roadmap and the associated timelines for the commercialization of the Kiira Electric Vehicle project and vehicle assembling plans.
- The UDC and MoSTI should fast-track the transfer of KMCs stock to MoSTI to ensure timely implementation of planned activities.

### **3.2.5 Presidential Initiative on Banana Industrial Development**

The Presidential Initiative on Banana Industrial Development (PIBID) started in 2005 as a pilot project of the Government of Uganda whose underlying theory is that rural farmers with access to science led processing and value addition enterprises will be able to rapidly access profitable market chains, that supply local, regional and international markets; resulting into increased household incomes. It was anticipated that the project would be a catalyst for socio-economic transformation through research based crop value addition. Over Ugshs 140 billion has so far been injected in the project since inception.

The project is in tandem with the Governments' priority economic strategies in the second National Development Plan (NDP II), which among others include; value addition to agricultural products and agro-processing through Research and Development (R&D).

By the end of the FY 2017/18, the pilot plant was 100% complete and processing of *Tooke* flour and other products were ongoing whilst on low scale. The four demonstration sites (community processing units) for Tooke production were established. Civil works for external works, hostels and laboratory block were at 85% physical progressing while installation of key equipment was at 80%.

### Performance of the PIBID

During FY 2018/19, the project was expected to transition into a Banana Industrial Research and Development Centre (BIRDC), acquire the International Standards Organisation (ISO) certification, install additional equipment, undertake test runs, and commercialize *Tooke* products among others.

The budget for the PIBID for FY2018/19 was not appropriated by Parliament. However a re-allocation of Ug shs 1.109 billion was made to maintain basic operations of the agency.



**L-R: Installed weighing bridge, furnished laboratories and bakery items presented for sensory tasting at PIBID**

In spite of running a zero development budget for the FY 2018/19, PIBID progressed with most of the civil works, installation of a weighing bridge, furnishing of the laboratory and administration blocks, completion of external works and installation of equipment owing to retained funds brought forward from the previous financial year. There was no progress on the process of transitioning from a project to a Banana Industrial Research and Development Centre pending issuance of a Certificate of Financial Implication (CFI). Under the re-current component, research and development activities were ongoing including improvement of the sensory taste of the bakery and confectionaries products.

It was observed that the agency was accumulating domestic arrears on civil works certificates, wages, NSSF and gratuity. The activities related to product certification and compliance to the environmental impact assessment requirements were halted due to lack of funds.

### 3.2.6 Science Techno-prenuership Programme

The programme facilitates Science, Technology and Innovation skills development for artisans, innovators and researchers. It is responsible for creating a critical mass of highly trained and skilled science, technology and engineering (STE) professionals to drive industrialization and economic growth. It facilitates establishment of product development facilities and innovation hubs, liaison with financial intermediaries for technology acquisition and access to credit for STI based SMEs, and fostering linkages and partnerships between STI institutions (universities,

technical and vocational) and industrialists as well as public Ministries, Departments and Agencies (MDAs).

The planned outputs for FY2018/19 include: Guidelines for Technology Enterprise Developed; Spinoffs and start-up technology enterprise supported; STI business mentorship undertaken; STI skilling and incubation centers established; Operationalization of Innovation and Technology Transfer Centers initiated; Plans for establishment of National STEYI and National STI Institutes developed; Products of research and development of small and medium enterprises supported; and Skilling in STI initiated and promoted.

### **Performance of the Science Techno-prenuership Programme**

The programme approved budget for FY 2018/19 is Ug shs 4.56 billion, of which Ug shs 0.93 (20.4%) billion was released and Ug shs 0.75 (80.4%) billion spent by 31<sup>st</sup> December 2018. Release was poor, while expenditure was good.

Table 3.5 shows the programme performance.

**Table 3.5: Performance of the Techno-prenuership Programme by 31<sup>st</sup> December 2018**

	Output	Annual Budget (Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	Remark
Technology Uptake Commercialization and Enterprise Development	Spinoffs and start up technology enterprise supported	1,344,000,000	290,499,908	10	4	34.72	Spinoff and start up technology enterprises Identified, profiled and still ongoing.
	Comparative analysis and adoption of appropriate models of Enterprise Development undertaken						Consultation program with LGs in Eastern region (Katakwi, Kaberamaido, Soroti and Amuria districts) to identify models of enterprises conducted.
	Guidelines for Technology Enterprise Developed						Consultation program with LGs in Eastern region (Katakwi, Kaberamaido, Soroti and Amuria districts) to identify models of enterprises conducted.



	Output	Annual Budget (Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	Remark
	Mass sensitization undertaken with Local Governments on Technology Enterprise Development						Sensitizations conducted in Kyenjojo, Kyegegwa, Kamwenge, Kabarole, Kasese, Ntoroko, Bundibugyo and Bunyangabo districts)
STI skills development	Skilling in STI initiated and promoted	1,268,000,000	297,000,000	9	0.7	10.88	STI skills needs assessment was conducted in Eastern Uganda (Soroti, Amuria, Kaberamaido and Katakwi districts.
	STI skilling and incubation Centers established						Proposal on the establishment of incubation centers was developed.
	STI skilling Partnerships with training institutions established and supported						STI partnership with Massachusetts Institute of Technology (MIT) established. Engagement with Academia undertaken in Entebbe.
	Operationalization of Innovation & Technology Transfer centers initiated						Insufficient funds.
	Plans for establishment of National STEYI and National STI Institutes developed						Insufficient funds.

	Output	Annual Budget (Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	Remark
STI Advancement & Outreach	Policies for promotion of Research and Development for Community Outreach & Industrialization	1,258,500,000	290,560,000	3	1.5	32.52	Draft guidelines formulated and ready for submission to top Management.
	STI Community outreaches undertaken in selected locations across the Country						STI community outreaches undertaken in 8 districts (Kyenjojo, Kamwenge, Kabarole, Bundibugyo, Bunyanga, Kasese and Kyegegwa).
	Products of Research and Development of small and medium enterprises supported						Profiled innovations during Parliamentary STI Exhibition Week
	<b>Programme Performance (Outputs)</b>					<b>78.12</b>	<b>Good performance</b>

*Source: IFMS, progress report and field findings*

The programme performance was good, rated at 78.12%. Several trainings, outreaches and consultations were undertaken in different parts of the country.

### **3.2.7 Finance, Administration and Support Services Programme**

The programme oversees operations of the Ministry activities including coordination, recruitment, management, and accountability. It is also responsible for the subventions of UNCST, KMC, and PIBID.

The planned outputs for FY2018/19 are: Administrative and other auxiliary services coordinated; Policy guidance provided; Comparative analysis of Scientific Research and technologies undertaken; Staff Payroll managed; Records Management services provided; STI Programs disseminated; Procurement and disposal Plans Prepared and Executed; Vehicles and other transport equipment procured; Assorted Furniture and equipment procured; Assorted ICT

equipment and software procured: Basic and applied scientific research supported; and Sector Planning and Budgeting obligations executed.

### **Performance of the Finance, Administration and Support Services Programme**

The programme budget for FY 2018/19 is Ug shs 17.88 billion. Owing to a supplementary budget in Q2, the release was Ug shs 26.89 billion and Ug shs 17.82billion was expended by 31<sup>st</sup> December 2019. Release and expenditure were good.

During FY 2017/18, the MoSTI initiated the recruitment of key staff starting with administrative staff. By 31<sup>st</sup> December 2018, 42 technical staff and 64 common cadres were recruited and deployed to the respective departments. The drafting of the sector development plan was ongoing.

Two vehicles, assorted furniture, assorted ICT equipment and software were procured and supplied to the Ministry under the retooling project of Institutional Support to MoSTI. Table 3.6 shows the programme performance.

**Table 3.6: Performance of the Finance, Administration and Support Services Programme by 31<sup>st</sup> December 2018**

<b>Program/ project</b>	<b>Output</b>	<b>Annual Budget (Ug shs)</b>	<b>Cum. Receipt (Ug shs)</b>	<b>Annual Target</b>	<b>Cum. Achieved Quantity</b>	<b>Physical performance Score (%)</b>	<b>Remark</b>
Finance & Administration	Ministry Support Services (Finance and Administration) coordinated	7,162,375,000	3,935,487,602	100	50	83.65	Administrative and other auxiliary services were coordinated.  24 hour security services for office premises were provided and the rental obligations for office premises were met.
	Ministerial and Top Management Services						Six (6) Top management meetings were undertaken
	Human Resource Management						Recruitment process was fast tracked, Staff payroll was managed, IPPS was installed and

Program/ project	Output	Annual Budget (Ug shs)	Cum. Receipt (Ug shs)	Annua l Target	Cum. Achieve d Quantity	Physical performanc e Score (%)	Remark
							<p>maintained</p> <p>Human Resource Plans were developed and implemented.</p> <p>Training, induction and orientation of new staff was undertaken on crosscutting issues and performance management.</p> <p>Ministry capacity building activities were also coordinated.</p>
	Records Management						Records management services were provided and safe custody of documents ensured.
	Information Management Services						STI awareness for appreciation was undertaken.
	Procurement and Disposal Services						Procurement and disposal plans were developed and executed.
	Accounts Services						Statutory and periodic reports prepared and the IFMS maintained.

Program/ project	Output	Annual Budget (Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	Remark
Internal Audit	Statutory and periodic Internal Audit Reports Prepared and submitted to management	178,650,000	36,550,000	100 0	0.1 0	0.01 0	Statutory and periodic Internal Audit Reports prepared and submitted to management.
	Monitoring and Evaluation audit reports prepared						M&E reports prepared.
Project 1459 Institutional Support to MoSTI	Vehicles and other transport equipment procured	450,055,100	304,363,536	100	30	2.56	2 vehicles and other transport equipment were procured.
	Assorted Furniture and equipment procured and supplied to the Ministry						Assorted furniture and equipment was procured and supplied to the Ministry.
	Assorted ICT equipment and software procured and supplied to the Ministry						Assorted ICT equipment and software were procured and supplied to the Ministry.
	<b>Programme Performance (Outputs)</b>					<b>86.23</b>	<b>Good performance</b>

*Source: IFMS, progress report and field findings*

The overall programme performance was good (86.23%). The recurrent and development components were all good and most of the planned activities were executed.

### **Challenges**

- Inadequate development budget where only Ug shs 0.45 billion was released against the required Ug shs 6.2 billion.
- Lack of counterpart funding to operationalize the NTEISP-Project.

### **Recommendations**

- The MFPED and Parliament should allocate and appropriate funds respectively for development activities for the NTEISP under UNCST, UIRI and MoSTI to facilitate counterpart funding for research collaboration and infrastructure.

## **3.3 Uganda Industrial Research Institute (UIRI)**

### **Background**

The Uganda Industrial Research Institute (UIRI) is the lead agency for the promotion of Industrialization in Uganda. The institute is an agency under the Science, Technology and Innovations Sector. UIRI traces its roots to the East African Federation of the 1970s, as a precursor of the then East African Research Organization (EARSO) which was headquartered in Nairobi and served as a regional Research and Development (R&D) institution for Kenya, Tanzania and Uganda. Upon the collapse of the East African Federation, the EARSO was disbanded in 1997, and later transformed into the Kenya Industrial Research and Development Institute. The establishment of UIRI was at the behest of GoU negotiations with the Chinese Government which offered a grant to build and equip the institute.

### **Objectives**

UIRI's primary objectives are:

- To carry out applied research for the development of products and provide platform for innovations, application of science and technology.
- To develop and acquire appropriate technologies in order to create strong, effective and competitive private sector.
- To promote value addition activities so as to transform local raw materials into competitive marketable products.
- To bridge the gap between academia, government and the private sector and to enhance commercialization of R&D.

The approved budget for UIRI, FY 2018/19 is Ug shs14.01billion, of which Ug shs 6.6 (48.5%) billion was released and Ug shs 6.4 (96.9%) billion spent by 31<sup>st</sup> December 2018. Both release and expenditure performance were very good.

### **Planned outputs for FY 2018/19**

The planned deliverables for UIRI during FY2018/19 include: Recruitment of new staff, commercialize essential oils, establish model value addition centres, renovate the peanut centre,

undertake skills development of industrialist, design hardware and analyse prototypes, purchase office equipment and specialized machinery, produce and market Newcastle vaccines, support incubation activities at headquarters and satellite facilities, and construction and equipping of the Machining and Skilling Centre (MMSK) in Namanve.

### 3.3.1 Industrial Research Programme

The construction of the **Machining and Skilling Centre (MMSK) at the Kampala Industrial and Business Park - Namanve** with a US\$30 million grant from the People's Republic of China was at 60% physical progress. The hostels, training rooms, Computer Aided Design, Computer Numerical Control (CNC) machining workshops and administrative blocks were substantially complete awaiting final finishes. The centre is expected to be completed and handed over in December 2019. It is expected to provide practical training to a total of 200 students (technicians) in standard machining, robotics, and programmable logic control among others. It was observed that no counterpart funding was allocated to this project as per the MoU and this was likely to affect the recruitment and training of staff/instructors, and equipping of the centre before it is handed over to UIRI.

**Potato, mushrooms and bamboo processing in Kabale District:** The potato processing plant in Kabale District initiated the certification of three potato products namely salted, chilly and vinegar flavored crisps under the *Emondi* brand. The agency was expecting to get the quality mark from UNBS by end of the third quarter.

The component on skilling SMEs in potato value addition to produce crisps using appropriate technologies in Kabale, Kisoro and Rubanda districts, supported by the Food and Agricultural Organisation (FAO) was concluded in October 2018. A total of 20 farmers selected to undertake cottage production and starter kits that include packaging bags, manual slicers, and appropriate stoves were identified.

**Mushroom processing and training:** Farmers were skilled in mushroom drying, post-harvest handling, processing technology, food safety, product quality and given starter kits.

The research on **bamboo processing** (toothpick making) was ongoing in Kabale District. The incubatee was trained in selection of appropriate raw materials, production, hygiene, market trials and basic machinery operations. The incubatee had identified an outlet in Kampala for marketing and sales of toothpicks. The key constraint to bamboo processing is the lack of raw materials and working capital from the incubatee to transit from prototyping to commercial production.

**Rukarara United Youth Project (RUYP)** is located in Kanyantoro sub-country, Kanungu District near the border with Democratic Republic of Congo. It is involved in extraction of crude oil from palm fruits for production of vegetable oil, soap, shoe polish and other bi-products. The group procured and planted 15 acres of palm trees of which 7 acres are currently producing fruits. Between 2016-2018, UIRI supported the project with construction and equipping of a processing plant. Civil works were completed in July 2018 and a snag list

generated. By January 2019, the snags identified had not been corrected including floor cracks, doors that do not properly open, among others. It was observed that the plantations of the members were inadequate for consistent supply of raw materials and the group was experiencing cash flow challenges to commercialize the seemingly viable enterprise.

**Headquarters:** A number of facilities were undergoing renovation; doses of Newcastle vaccines were produced and marketed across the country. Overall performance was rated as fair (53.7%). Table 3.7 shows the programme performance.

**Table 3.7: Performance of the Industrial Research Programme by 31<sup>st</sup>December, 2018**

Subprogram/ project	Output	Annual Budget ( Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	Remark
Head-quarters	Administration and Support Services	5,730,000,000	2,930,000,000	6	2.2	29.97	UIRI recruited 10 new employees, paid all insurance dues for UIRI assets, equipment, vehicles and ICT equipment, and paid staff salaries and general operations.
Support to Uganda Industrial Research Institute (UIRI)	Research and Development	3,480,000,000	1,930,000,000	2,013	130	2.96	UIRI analyzed 120 laboratory samples for chemical composition & certificates issued. BRENTec/Vaccination Production Unit produced 3,000,000 doses of Newcastle vaccine with total sales of 2,116,000 doses.
	Industrial and technological Incubation	750,000,000	380,000,000	37	22	5.47	Semi commercial essential oil pilot plots were established with emphasis on <i>Rose geranium</i> and <i>lemon balm</i> , and also produced book covers from wastepaper.
	Model Value Addition Centre established	310,000,000	130,000,000	13	4.5	1.87	100% completion of the ATCG offices at formerly occupied UNBS premises at UIRI campus. purchased materials to complete Epoxy floor finish for the palm oil facility in Kanungu, and 60% completion and doors at the silk processing line facility in Sheema District were



Subprogram/ project	Output	Annual Budget (Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	Remark
							installed.
	Facility repair and maintenance	400,000,000	70,000,000	26	7	2.92	Renovation of peanut processing facility in Lira District was at 95%. UIRI also undertook renovation and refurbishment of various facilities at the UIRI head offices.  The sausage filler, bowl cutter, small meat mincer, three cold rooms and other equipment were repaired.
	Industrial Skills Development and Capacity Building	180,000,000	80,000,000	1,610	512	0.94	The UIRI trained 111 people (15 in cosmetics production and 96 in soap, detergents, & toiletries production) majorly from central and western regions.  Trained Rugiga Youth Development Initiative in value addition to fruits to make products like juice, jam, wine and electric dried fruits. UIRI also trained several groups and universities in mechanical and electrical engineering and maintenance, carpentry, tailoring, embroidery, fruit juice making, and probiotic yoghurt among others.
	Technology, Innovation, Transfer and Development	510,000,000	230,000,000	8	2	2.06	UIRI started clinical and medical equipment assessment in 3 regions of Uganda with meetings and conferences.  Hardware design and analysis, simulation and prototyping were ongoing.
	Popularization of research and technologies	150,000,000	60,000,000	9	3	0.91	17 guided tours aimed at exposure to entrepreneurship opportunities at UIRI in the areas of processes, innovations, and to boost practical skills

Subprogram/ project	Output	Annual Budget ( Ug shs)	Cum. Receipt (Ug shs)	Annual Target	Cum. Achieved Quantity	Physical performance Score (%)	Remark
							learning in schools were conducted. A number of publications in the print and electronic media were produced.
	Government Buildings and Administrative Infrastructure	1,110,000,000	140,000,000	12	1	5.35	The ATCG offices formerly occupied by UNBS at UIRI campus were under defects liability period.
	Purchase of Office and ICT Equipment, including software	70,000,000	70,000,000	5	2.00	0.20	The ICT department activated Microsoft windows 10 and Microsoft office 2016 professional on 35 computers.
	Purchase of Specialized Machinery & Equipment	1,020,000,000	640,000,000	45	4.00	1.05	Procurement of reflow oven, the logic analyzer and digital ic tester were procured and delivered for the instrumentation division.
	<b>Programme Performance ( Outputs)</b>					<b>53.70</b>	<b>Fair performance</b>

*Source: IFMS, progress report and field findings*



**Top: Ongoing construction of the Machining Training Centre in Namanve. Below: Toothpicks making equipment in Kabale District, and Palm Oil Processing Facility in Kanungu District**

### Challenges

- Lack of counterpart funding for the construction of the Machining and Skilling Centre (MMSC) in Namanve.
- Intermittent and poor quality power supply in most of the offsite facilities.
- Seasonal and insufficient raw materials such as potato and bamboo respectively.
- Lack of professional extension services for some of the value chain enterprises.
- Lack of entrepreneurship skills: Most of entrepreneurs working with UIRI do not have the set of traits such as creativity, and resilience to soldier on in the face of hardships. There is a lot of dependence on public sector support which is not sustainable.
- The defects identified in Kanungu palm oil project were not addressed.
- Low rates of graduation from incubation to commercialization.
- Expensive credit curtails commercialization of prototypes.

## **Recommendations**

- The UIRI and the MFPED should prioritize and provide counterpart funding to cater for the training of instructors and equipping of the machining centre in Namanve.
- The UIRI should enforce the contract for construction of the palm oil processing plant and ensure that the defects identified are addressed by the contractor.
- The UIRI should engage the Kanungu DLG to promote the growing of palm trees to ensure sustainable supply of raw materials to the factory.
- The guidelines for incubation should be reviewed to clearly spell out the duration, extent of support from UIRI, and development of exit strategy.

## **3.4 Gender and Equity Compliance**

Out of the 17 Innovation Fund beneficiaries at UNCST, only two (2) were female. Ten of the innovators were located in central region (Kampala, Wakiso and Mukono districts), and five (5) in the western region (Sheema, Mbarara and Bushenyi districts). The eastern region did not benefit from the fund. This creates a regional imbalance in beneficiary selection. Out of the 10 staff recruited at UIRI, 5 were male and another 5 were female. The various trainings conducted by UIRI for groups and tertiary institutions across the country were sensitive to gender.

## **CHAPTER 4: CONCLUSION AND RECOMMENDATIONS**

### **4.1 Conclusion**

The half year sector performance was fair (65.6%). Most of the recurrent sub-programmes especially those under Finance and Administration exhibited good performance, while the development programmes performed poorly. The STI mission of providing leadership, an enabling environment and resources for scientific research and knowledge-based development for industrialization, competitiveness and employment creation, leading to a sustainable economy is in tandem with the country's Vision 2040 and NDP II.

If facilitated, the STI sector is capable of contributing to the industrialization agenda of Uganda. However, a number of interventions supported under the innovation fund were at the verge of failure due to unexpected funding cuts. This is likely to impede the achievement of its intended objectives and sector outcomes. The GoU therefore should consider stable and appropriate funding to the sector to achieve the objectives.

### **4.2 Recommendations**

- i) The MoSTI should finalize the development of guidelines for the Innovation Fund.
- ii) The MoSTI and KMC should enhance stakeholder engagement to appreciate the road map and associated timelines for the commercialization of the Kiira EV project.
- iii) The GoU should review the legal framework establishing the UNCST and MoSTI to avoid duplication of roles.
- iv) The approved vacant posts in the MoSTI, UIRI and KMC should be filled to address the human resource gaps.
- v) The MEMD through her agencies should improve the quality of power and provide stable supply to the grid to minimize loss of equipment resulting from voltage surges.
- vi) The MFPED and Parliament should allocate and appropriate funds respectively for development activities for UNCST, UIRI and MoSTI to facilitate counterpart funding for research collaboration and infrastructure.
- vii) The Parliament should review the decision that suspended development funding to the sector through the Innovation Fund to enable the scientists with “work in progress” to complete prototypes and possibly transit to commercialization.

## REFERENCES

- Government of Uganda (2015) *Second National Development Plan (NDP II) 2015/16-2019/20*, National Planning Authority, Kampala
- Integrated Financial Management System - Semi Annual Data FY 2018/19
- MFPED (2018); *Draft National Investment Policy (NIP)* Ministry of Finance, Planning and Economic Development
- MFPED (2018); *Public Investment Plan (PIP)* FY2018/19- 2020/21; Ministry of Finance, Planning and Economic Development.
- MFPED, 2016. Public Investment Plan (PIP) FY 2016/2017 – 2018/2019. Ministry of Finance, Planning and Economic Development.
- MFPED, 2018 Budget Speech FY 2018/19. Ministry of Finance, Planning and Economic Development, Kampala.
- MFPED, 2018. *Approved Estimates of Revenue and Expenditure (Recurrent and Development) FY 2018/19*. Volume I: Central Government Votes for the year ending 30th June 2019.
- Ministry of Science, Technology and Innovation (2018), *Ministerial policy statement* FY2018/19
- Ministry of Science, Technology and Innovation (2018); *Quarter two Performance reports* FY 2018/19
- National Planning Authority (2010), *Uganda Vision 2040*
- Uganda Industrial Research Institute (2018); *Quarter two Performance report* FY 2018/19

## Annex

### Annex 1: Scope of Semi-Annual Monitoring Exercise for FY 2018/19

Vote	Program/Sub program
Vote 023, Ministry of Science, Technology and Innovations (MoSTI)	Research and Innovation Programme Kiiira Motors Corporation (KMC) Uganda National Council for Science and Technology (UNCST) Presidential Initiative of Banana Industrial Development project (PIBID)
Vote 110 Uganda Industrial; Research Institute (UIRI)	Industrial research Programme Support to UIRI

*Source: Author's Compilation*