PARLIAMENT OF UGANDA

REPORT OF THE COMMITTEE ON SCIENCE TECHNOLOGY AND INNOVATION ON FIELD VISITS TO SELECTED INDUSTRIAL VALUE CHAINS IN THE CENTRAL WESTERN AND EASTERN REGIONS.

Office of the Clerk to Parliament

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Acronyms

NSTEI	National Science, Technology, Engineering and Innovation Skills Enhancement
TIBIC	Technology Incubation Business and Innovation Centre
EDIC	Engineering Development Innovation Centre
UIRI	Uganda Industrial Research Institute
MMISDC	Machining, Manufacturing and Industrial Skills Development Centre
UNCST	Uganda National Council for Science and Technology
NSTEI-SEP	National Science Technology Engineering Innovation and Skills Enhancement Project
TDC	Technology Development Centre
UAV	Unmanned Aerial Vehicle
LPG	Liquefied Petroleum Gas
VFD	Variable Frequency Drive
NEC	National Enterprise Corporation
MOU	Memorandum of Understanding
MTEF	Medium-Term Expenditure Framework
NTR	Non Tax Revenue
PAX	Passenger
TOT	Trainers of Trains
OSHA	Organisational Safety and Health Assurance
TDM	Tool Die Mould
EM&E	Engineering Machinery and Equipment
PSC	Project Steering Committee

NEC	National Enterprise Corporation
STI-OP	Science Technology and Innovation – Office of the President
CNC	Computer Numeric Control
CMC	Coordinate Measuring Machines
KMC	Kiira Motors Corporation
bn	Billion
USD	United States Dollar
IAC	Inspire Africa Coffee
MT	Metric Tonnes

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1.0 INTRODUCTION

The Committee on Science Technology and Innovation conducted oversight field visits on selected Industrial Value Chains in the Eastern and Central regions of Uganda. There are 9 Industrial Value Chains which include; Export promotion, Productivity acceleration, import substitution, infrastructure innovations, pathogen economy, industry 4.0+, mobility, aeronautics & Space and human capital development. The essence of the visits was to inspect and assess the activities carried out by the different Value Chain projects. Among those that were selected included Industry 4.0+, Aeronautics & Space Science, Productivity Acceleration and Mobility; all under the stewardship of the Secretariat for STI-OP.

The Industrial Value Chain projects were selected owing to their large and global market potential. The projects were characterised by properties such as high potential for import substitution hinging on national strategic importance; utilisation of locally available material; potential to address Uganda's national challenges and the ability to ignite the development of other industries in the economy.

The Committee compiled a report on this activity and now presents it to the House in accordance with Rule 34 of the Rules of Procedure for consideration.

1.1 Rationale

The Standing Committee on Science Technology and Innovation derives its mandate from Article 90 of the Constitution of the Republic of Uganda and Rule 193 of the Rules of Procedure of Parliament. These provisions enjoin the Committee with the authority and power to, among others, research, investigate and carry out oversight functions with respect to the Ministries, Departments and Agencies (MDAs) under its purview.

Pursuant to Rule 193 (a) (c) and (d) of the Rules of Procedure of the Parliament of Uganda, the Committee on STI proceeded to conduct the field visits in oversight in line with the mandate as highlighted hereunder;

(a) *review, discuss and make recommendations on scientific and technological content of Bills laid before Parliament;*

(c) monitor, evaluate or assess activities of public institutions and any other bodies engaged in national science, technology and innovation development;

(d) examine, and undertake research on the performance of Science Technology and Innovation subsector.

1.2 METHODOLOGY

The Committee adopted the following methodology:

i. Conducted a desk review of data from various reports relevant to the task.

ii. Held meetings with the various stakeholders including: Undersecretary of the Ministry of Science, Technology and Innovation, representatives from UIRI, NSTEI, KMC and Busitema University.

iii. Reviewed documents submitted to the Committee during its oversight visit.

iv. Inspected the projects which included NSTEI in Namanve and Rwebitete, UIRI in Namanve, Busitema University in Tororo, Mpoma Satellite Station in Mukono and Kiira Motors Corporation in Jinja.

1.3 SCOPE

This report concerns Industrial Value Chain projects in the districts of Jinja, Mukono, Mpigi, Mbarara, Ntungamo and Tororo, located in the Central, Western and Eastern regions of Uganda. The projects visited include NSTEI – SEP, UIRI, Kiira Motors (KMC), Mpoma Satellite Station, Busitema University and Inspire Africa Coffee.

1.4 OBJECTIVES:

The Committee objectives for the field visits in oversight were;

i. To assess activities carried out and how much has been achieved of the set objectives;

ii. To examine the impact that the selected value chain projects have had on the lives of the intended beneficiaries and the Ugandan economy as a whole;

iii. To ascertain the challenges faced by the selected projects

iv. To come up with recommendations in order to enhance efficiency and effectiveness.

2.0 INDUSTRIAL VALUE CHAIN PROJECTS VISITED

2.1 National Science, Technology, Engineering and Innovation Skills Enhancement Project (NSTEI-SEP)

The Government of Uganda through Uganda National Council for Science and Technology (UNCST) and with support from the People's Republic of China (PRC) implemented the National Science Technology Engineering and Innovation Skills Enhancement Project (NSTEI-SEP). The project aim was to enhance the technological and skill base of Ugandans. This would hone the skillset of the beneficiaries in order to participate in infrastructural projects and manufacturing industries.

The project components were being implemented in two sites namely:

1. The National Science, Technology and Engineering Innovation Centre (NSTEIC) at Rwebitete - Kiruhura District
2. The Technology Innovation and Business Incubation Centre (TIBIC) at Kampala Industrial Business Park, Namanve - Mukono District

The specific objectives of the projects are to:

i. To enhance the technological and skill base of Ugandan graduates, craftsmen, technicians and engineers as well as instructors through the Flexible Factory Learning & Infrastructure Model using Research and Development.

ii. To re-tool graduates, craftsmen, technicians and engineers in order to equip them with skills to undertake various infrastructural works.

iii. To establish technology, innovation and business incubation facilities, including work spaces and common-user facilities for scientists and innovators to help them further develop their technologies and business models.

The committee was informed that two companies; Lwera Electronics semi-conductors and Innovex located at Nakawa and Ntinda respectively, are yet to relocate to TIBIC premises in Namanve. LWERA Electronics deals in local electronics design and hardware generation, and is already carrying out its operations, while Innovex deals in manufacturing of electronics and engineering services, but yet to relocate into the premises.

2.1.1 Project Cost and Financing Arrangements

The Committee was informed that the NSTEI Enhancement Project was meant to be implemented over a four-year period from 2018. The project was financed with a loan from EXIM Bank of China amounting to USD 84.73 million, representing 85% of the contract sum of USD 99.69 Million. The Government of Uganda was to contribute up to 15% of the contract sum; equivalent to USD 14.95 million. For continuity of the project, Government was also to invest USD 15 million spread over a period of five years to support the recruitment and maintenance of human resources to implement the project; routine operations, project sustainability, as well as monitoring and evaluation.

2.1.2 Strategic Plan

The Committee was informed that ***crafting of the strategic plans for ENSTEI & ENSTESEC projects was work in progress,*** and that they were to be presented to the Minister, in charge of the Secretariat for STI-OP to Table before Cabinet.

2.1.3 Financial Performance of NSTEI

The Committee was provided with a spreadsheet showcasing funds utilisation from FY2019/2020-FY2023/2024 with total commercial contract; equipment supplies and civil works taking the biggest share of the expenditure as shown in the table below;

Table 1: Financial Performance of NSTEI-SEP from FY 2019/20-FY 2023/2024

S/N	Description	Planned Project Cost	FY2019/20	FY2020/21	FY2021/22	FY2022/23	FY2023/24	Total Amount
1	Equipment Supply		24.683	1.666	9.493	3.23	0.486	39.558
1.1	Engineering Machinery	33.893				2.045	6.521	8.566
1.2	Equipment for labs and maintenance centre	9.854				0.206		0.206
1.3	Spare parts for all equipment	2.187					1.183	1.183
1.4	Installation, commissioning and after sale service	4.363						
1.5	Training on equipment in China	4.585						
2	Civil works							
2.1	Civil works	30.161	9.761		7.994	8.382	4.026	30.163
3	Design & Management							
3.1	Engineering design, planning & site surveys	8.21		3.941	3.303			7.244
3.2	Project management and administration	1.688	0.724		0.724			1.448
4	Contingency							
4.1	5% of Sect1+2+3	4.747		0.26				0.26
5	Total Commercial Contract	99.69	9.723	5.607	20.789	13.863	5.209	55.191
6	Total Loan Amount	84.736						
7	Total Cumulative Expenditure		35.168	5.867	21.514	13.863	5.209	81.621

Source: *National Science, Technology, Engineering and Innovation Skills Enhancement Project (NSTEI-SEP)*

Table 2: Project funding roadmap

S/No	Description	FY2019/20	FY2020/21	FY2021/22	FY2022/23	FY2023/24	Cumulative Total
1	Proposed project funding road map	12.4	47.5	27.6	14.9	11.6	114
2	Approved Budget	12.4	12.4	19.4	19.4	19.4	83.0
3	Actual releases	10.3	12.4	19.4	16.2	12.38	70.68

Source: *National Science, Technology, Engineering and Innovation Skills Enhancement Project (NSTEI-SEP)*

2.1.4 Challenges faced;

The Committee was informed that the major challenge faced was shortage of funds. The projects were underfunded which in turn hindered recruitment of staff and therefore, resulted into delayed operationalisation.

2.1.5 Achievements of ENSTEI and ENSTESEC

The Committee was informed that;

- 96% completion of civil works for EDIC in Rwebitete, Kiruhura District,
- 100% civil works for TIBIC in Namanve, Mukono District,
- 98% for supply, delivery, installation and commissioning of engineering machinery and spare parts,
- 100% supply, delivery installation and commissioning of the maintenance workshop equipment at TIBIC,
- 90% supply, delivery, installation, commissioning of laboratory equipment and 50% training and after sales services.

2.1.6 Committee Observations

The Committee observed that;

i. There were permanent structures in a state of completion.
ii. The structures are not yet occupied in spite of them being launched in 2022 – same status quo as in the previous field oversight in FY 2022/2023 (Non-operational state)
iii. There was equipment procured but lay redundant in the store.
iv. Most of the machinery and spare parts were still under the control of the contractors, who were in charge of the keys for accessibility.
v. The Committee was concerned about the manufacturing date of the equipment that was being procured into the Country and the level of participation of NSTEI technical staff in the design and procurement process.
vi. NSTEI did not avail a functional strategic plan which raised questions in regard to how the entity was operating.
vii. The committee observed that the facility had not yet been operationalized. This prompted the visiting team of MPs to query why there wasn't further progress in relation to the last visit in FY 2022/23.

viii. The Committee observed that work was close to completion save for the external works (compound)

ix. The committee was informed that 25 people had gone for specialized training in China, out of which 2 were female, which prompted Members to inquire about the selection criteria.

x. The committee observed a low staffing level and this prompted the visiting team of MPs to inquire whether the local population was to be considered in the employment strategy.

xi. The Committee observed a similar operational function between UIRI and NSTEI (UNCST).

xii. The committee observed that visibility and packaging is still a challenge (NSTEI-SEP Rwebitete lacks a sign post along the main road) and therefore, required the entity to consider handling the issue better.

xiii. The committee observed that most of the equipment purchased was scattered and not profiled.

xiv. The Committee observed that the equipment as outlined hereunder was not functional and therefore not utilised.

xv. The Committee further observed that the equipment was parked at Court Yard Hotel which is a private premise, yet it should be under the stewardship of NSTEI and therefore, on their premises.

Profile of Equipment at Court Yard Hotel (Lyantonde Town Council)

S/N	Description	No.
1	Mobile Generators	6
2	Fork Lifts	2
3	55T Cranes	3
4	Motor graders	4
5	Excavator SY215	2
6	Bulldozer SD22	2
7	Bulldozer SD16	6
8	Recovery truck	1

9	Platform trucks	8
10	Cargo trucks	12
11	Low bed complete with Tractor head	4
12	Fuel Bowsers	5
13	Cargo trucks with crane	7
14	Concrete mixer trucks	4
15	Big bus	2
16	Small bus	2
17	Liquid asphalt tank	1
18	Asphalt distributor	1
19	Water drilling rigs	2
20	Tractor 45HP	4
21	Tractor 80HP	4
22	Backhoe loader	2
23	Paving machine	1
24	Self-propelled chip spreader	1
25	Double drum roller	1
26	Sheepsfoot roller	2
27	Pneumatic tyre roller	2
28	Wheel Loader	1
29	Crawler Loaders	6
30	Mobile workshop	1
31	Mobile greasing truck	1
TOTAL		**100**

Source: *Written memoranda from NSTEI-SEP*

2.1.7 Challenges faced

The Committee was informed of the challenges faced by the Centre that delayed its operationalisation;

i. The COVID-19 pandemic affected the framework for civil works designs and the planned timelines for commencement of civil works (construction of buildings and structures) component of the Project.

ii. Disruptions caused by the prevailing structural changes that took place within the then Ministry of Science, Technology and Innovation (MoSTI) negatively impacted on the progress on project implementation.

iii. Delays in disbursement of funds by EXIM Bank to the Project Contractor AVIC-INTL Project Engineering Company (AIPEC) caused serious cash flow problems which somewhat affected the implementation of civil works under the project.

2.2 UGANDA INDUSTRIAL RESEARCH INSTITUTE

Commissioned On 15th Jan. 2020 by H.E Yoweri Kaguta Museveni, the Machining Manufacturing Industrial Skills Development Centre (MMISDC), was built and equipped with the support of USD 30 Million grant from the Government of the People's Republic of China.

The centre which is situated on 15 acres of land in the heart of Kampala Industrial Park-Namanve, is one of Uganda's promising interventions for industrial growth.

The MMISDC boasts of modern infrastructure that is premised to serve the dual function of churning out technology-based products while at the same time developing industry-relevant technical skills.

It has the following enlisted objectives;

i. To carry out applied research for the development of products and provide platforms for innovation, application of science and technology.

ii. To develop/acquire appropriate technologies in order to create a strong, effective and competitive industrial sector.

iii. To promote value addition activities so as to transform local raw materials into competitive marketable products.

iv. To bridge the gap between academia, Government, and the private sector to enhance commercialization of Research and Development.

2.2.1 Strategic Plan of MMISDC

Machining Manufacturing Industrial Skills Development Centre (MMISDC) operations are guided by UIRI's Strategic Plan 2020/21-2024/25 under the

theme "Leapfrogging the 3 Industrial Revolutions and preparing for the 4th". It also highlights the salient focal areas of the NDP III in which UIRI is a key player.

2.2.2 Achievements of Machining Manufacturing Industrial Skills Development Centre (MMISDC)

The Committee was informed by the management of UIRI about the achievements as follows;

(a) Development of a real-time safety smart system for Oil rig operations

The project featured the development of a real-time safety smart system for rapid detection of hazardous gases such as hydrogen sulphide (HS) and carbon monoxide (CO) as well as ambient and body temperature for oil rig operators.

(b) Development of a Vehicle Tracking Device

The project supported a group of young innovators from Luweero industries with generation of a prototype device through research on improvement of existing firmware, hardware and software as well as power consumption, and other key performance features of which the next phase will include integration of a camera system for real time location via a smartphone.

(c) Drone technology development

The instrumentation unit of the TDC undertook this project that aims to locally develop and utilize UAVs for various purposes like aerial photography, surveillance, agricultural mapping, road construction and surveying.

(d) Development of a digital weighing scale

Work carried out so far included sensor selection, user interface design and precision calibration. The target was to produce a robust and high precision digital weighing scale that finds application in various sectors like agriculture, healthcare, industry and transportation.

(e) Development of an LPG Gas Detector

The engineering unit was in the process of developing a prototype LPG detector so as to generate early warning signals in the event of a gas leak.

(f) Design, Development and Pilot Production of FM Radios

Both the circuitry and wood frame of the radio were designed and fitted by the instrumentation unit which has produced 50 units as prototypes, so far.

(g) Designed and developed a Variable Frequency Drive (VFD)

The Instrumentation unit designed a VFD device that converts single phase fixed frequency distribution power to 3-phase power. Development and prototyping were to follow so as to use the device to power machinery in rural communities that lack 3-phase power for basic agricultural post-harvest operations, like grinding.

(h) Development of Honey Processing Equipment

The engineering unit developed a working prototype honey processing device that features the capability for extraction and packaging of the product.

(i) Development of Cheese Presses

The engineering unit developed working prototypes of both manual and pneumatically operated (air-powered) cheese presses.

(j) Fabrication of Assorted Agro-Processing Machinery

Prototypes for agro-processing machinery that included a grain huller; mill and grain cleaner were designed and fabricated for post-harvest agricultural processing of grains and seeds.

(k) Design and Development of a Sugarcane Juice Processing Line

Design and development of a prototype sugar cane juice processing machine.

(l) Industrial Skilling and Apprenticeship

Hands on competency-based skilling of which 254 Ugandans have been brought on board at different intervals and given skills on how to interact with machines as well as to add value to metals and their related products.

2.2.3 Challenges faced by UIRI

The Committee was informed of the challenges the entity was facing which included the following;

i. Inadequate budgetary allocation, coupled by release shortfalls which resulted in a failure to fully operationalize the MMISDC.
ii. High staff attrition rate occasioned by uncompetitive staff benefits and UIRI remuneration, compared to competing entities.
iii. Institutional "grid locks" characterised by some institutions overstepping their mandates, thus causing rampant duplication of efforts and consequently affecting allocation of resources.
iv. Limited awareness among stakeholders and the general public on the most appropriate entity to engage for technical services.
v. The Committee was informed the agency was understaffed and faced the challenge of retainability of high-end engineers. Some of the software could only be operated by Chinese since the institution lacked the technical expertise to operate them.

2.2.4 Committee Observations

The Committee observations included the following;

i. UIRI has diversified projects which include production of: Cheese press machines; feed pallet mill machines; maize milling machines; radio prototypes; tailoring and knitting component; a furniture facility; a soap slicing machine; a shoes manufacturing machine and a wooling project. However, most of them are dysfunctional. As such, there is no value for money.
ii. A few interns and graduates were at the UIRI premises for industrial training.
iii. Some of the equipment at UIRI was none functional due to lack of personnel to operate it, besides the language (instructions) was still customised by the manufacturers.
iv. There seems to be no clear indications of how UIRI has embarked on out-reach; the entity services are not reaching the public, later on the beneficiaries

v. The Committee further observed that the branding and visibility is wanting

2.2.5 Recommendations

The Committee recommends that;

i. Government should ensure that the equipment procured is relevant and addresses the need as identified by the project.

ii. Government should ensure continued human capital development to increase competency levels and reduce dependence on foreigners to operate the machines.

iii. Government should implore UIRI to improve on branding and visibility, so that the services are known and brought closer to the public and targeted beneficiaries.

2.3 MPOMA SATELLITE STATION

2.3.1 Current State of Mpoma Satellite Station

A rehabilitation process was done by National Enterprise Corporation (NEC). Phase 1 of the process included the renovation of the mission command centre, aerospace design lab, geospatial lab, aerospace exploration lab, meeting room, kitchen, dining and store. The Committee was informed that other facilities would subsequently be handled.

2.3.2 The work plan for the Earth Station

The Earth Station had no work plan at the time of the Committee visit so could not do a proper assessment of the future operations of the earth station. Rather, it had a Strategy that involved; products and services; vibrant competitive industry; indigenous capabilities; private sector participation and international cooperation. It also had a policy that involved; improvement of quality of life of a Ugandan; sustainable space activities; innovative expertise; regulation framework and attraction of local & international investment.

2.3.3 Achievements of Mpoma satellite Station

i. The Committee was informed about the completed projects which included; PearlAfricaSat-1, AfDevSat and Clim Cam as a capacity building project in which seven experts were trained in satellite engineering.

ii. The Committee was further informed about projects in progress which included Uganda's second satellite that follows PearlAfricaSat -1 though deorbited in 2023,

iii. Rocket technology development and an upgrade to Ground Station equipment.

2.3.4 Plans for another Satellite

The Committee was informed that preliminary plans regarding the launch of the second satellite were underway and these included training of engineers under the "Satellite technology domestication project in Kenya, South Sudan and Egypt and are yet to collaborate with countries like South Africa where a draft MoU on technology transfer was drafted. This would enable sharing of information and experiences from South Africa and Egypt that have capacity to build Satellite equipment.

2.3.5 Breakdown of funds utilization

The Committee was informed of the expenditure items which included Uganda's first satellite, specialized training, infrastructure development, equipment acquisition, regulatory framework, outreach and student projects in which infrastructure took the largest share of the expenditure.

The table below highlights the expenditure of the project from its date of inception.

Table 4: Mpoma Satellite Station funds breakdown

FY	Activity	Amount (Ugx)
2021/2022	Training of Engineers at Kyutech	440,286,828
	GS license Fees	44,270,500
	Mpoma renovation (Civil, Electrical, Telecommunications)	2,184,724,052

	Satellite manufacture and launch	-
2022/23	R&D (products from satellite data)	2,000,000,000
	Training for Engineers in Egypt	444,000,000
	Operational Costs	70,798,923
Total		5,184,080,303

Source; Ministerial Policy Statement 2024/2025, Pg 33

The Committee was also informed of the expenditure cost for different financial years which included UGX 7.23 bn shillings for FY2021/22, UGX 2.55 bn shillings for FY2022/23 and UGX 14.5 bn shillings for FY 2023/24.

2.3.6 Committee Observations

The Committee established that;

i. Most of the dishes appeared to be dysfunctional at the time of the visit.
ii. Existence of a mission command centre which currently is being used to detect weather changes and patterns.
iii. The PearlAfrica-Sat1 satellite lasted only 8 months instead of 20-30 months due to bureaucracy in procurement approvals that led to a late launch, at a time when the solar cycle was at its peak. As such, this led to its early deorbiting.
iv. The approval of the aerospace regulatory framework and work plan is still work in progress.

2.3.7 Recommendations

The Committee recommends that;

i. An assessment is done to know whether the dishes can be repaired or replaced and what the subsequent costs may be.
ii. The approval of the aerospace regulatory framework and work plan should be expedited in order to govern the operations of the work station and industry.
iii. Visibility through outreach and proper branding should be enhanced to enable the public get acquainted with the services rendered.

2.4 BUSITEMA UNIVERSITY

Busitema University was established by an Act of Parliament in 2007 as a multi-campus public university located in Eastern Uganda. The University's niche is practical sciences, relevant technology, productive education and innovation for sustainable development. Its strategic objectives as stipulated in the Strategic Plan 2020/2021 - 2024/2025 include the following:

- Strengthen Excellence in Education and Student Life
- Increase High Impact Research, Innovation, and Entrepreneurship
- Strengthen Partnerships and Engagement for Growth
- Increase productivity through Effective Leadership, Governance, and Management.

The University has spearheaded Uganda's Space Science Program; demonstrating a strong commitment to scientific exploration.

2.4.1 Achievements

The Committee was informed of the achievements hereunder;

i. The University has produced highly skilled researchers and educators with specialized knowledge and skills in space science disciplines.
ii. The University provided land for a Space Science Institute though the staffing levels need to be boosted in order to enhance research capacity.
iii. Active engagements with national and international partners to enhance capacity-building and collaboration in space science initiatives has been achieved.
iv. The University is pursuing partners to invest in state-of-the-art laboratories, observatories, and research facilities to support space science research and innovation.

2.4.2 Committee Observations

The Committee observed that;

i. There is a special science coordination office which offers access to real time information in regard to weather which guides farmer to plan for their seasons.

ii. There is an operational base model used to predict weather elements on wind patterns, providing vital information for planning in the agricultural sector.

iii. Busitema University has a solar power plant which generates 4MW supply for the University community and the different purposes of use.

iv. The aerospace project is understaffed and the current staff are part-time lecturers, thus making it difficult for the project to thrive since it requires full-time supervision.

2.4.3 Committee Recommendations

The Committee recommends that;

i. Government should prioritise best performing Universities while allocating research funding. For instance, Busitema University has been voted 5 years in a row as the most innovative university.

ii. Government should create a fund for post graduate studies; to train in space science and address the shortage of expertise and staffing levels.

iii. Government should find the Ugx 25 bn required to establish the Space Science Institute at Busitema University.

iv. Advocate for reinstating the budget cut of Ugx1.73 bn for Busitema University as guided by the corrigenda for budget 2024/25.

v. Support postgraduate training to boost human capital development in critical areas for instance practical educational material and laboratory equipment, teaching and research staff across the six campuses to raise staff-in post from the current 10% to 15% of the establishment.

vi. Government endeavours to motivate scientists with better enumeration and protection.

2.5 KIIRA MOTORS

Kiira Motors Corporation is a Mobility Enterprise Established by the Government of Uganda (GOU) to Champion Value Addition in the Nascent Mobility Industry in Uganda through Technology Transfer, Contract Manufacturing and Supply Chain Localization.

The economic transformation of Uganda is underpinned by strategic investment in the Production of *High Value Products* for import substitution, increased domestic value addition and export to regional markets. In view of this, Government has prioritized the Mobility Industrial Value Chain as one of the prime drivers of economic transformation through industrialization.

Government of the Republic of Uganda as the Principal Shareholder with 96% stake has thus invested USD 100 Million as Capitalization of Kiira Motors Corporation, a State Enterprise supervised by the Minister for Science, Technology and Innovation-Office of the President. The Capitalization so far has enabled Construction, tooling and furnishing of 80% of the Kiira Vehicle Plant Start-Up Facilities in Jinja and the development of two Bus Product Lines which are ready for the Market. The Kayoola EVS (an Electric City Bus), with Models ranging from 6M (15 PAX) - 18M (120 PAX); and The Kayoola Coach which is, an Electric or Diesel Intercity Bus with Models ranging from 10M (39 PAX) - 13M (63 PAX). The Electric Buses, when fully charged can cover up to 500KM.

The Kiira Motors Investment represents Uganda's strategic endeavor to spur technological growth, environmental stewardship, job creation, and international competitiveness.

The core business of the corporation is to develop, make and sell mobility solutions in Africa. However, the Committee was informed that the plant does not operate devoid of challenges. These include;

i. Imposition of import duty and VAT on Electric Vehicle production machinery and equipment.
ii. Lack of an e-Mobility Tariff for commercial and charging stations for public use to catalyse the deployment of e-Mobility solutions.
iii. Absence of an e-Mobility Industry Human Capital Development program to develop the Human capital required for the Industry to take off.

2.5.1 Committee Observations

The Committee observed that;

i. The structural integrity of the enterprise in terms of building structures and machine installation is above 70% completion rate, case in point the production facility which is at 83%.

ii. The plant produces 1.5mw from solar on 2 acres of roof space which aids to reduce the electricity bill incurred by the plant.

iii. The waste water treatment plant was operational and that it can treat up to 1,000,000 litres of water at full capacity.

iv. The manufacturing of the frame and seats are locally made save for the brake systems, steering systems, suspension systems and parts of the engine components. The plant has not yet developed capacity to produce them locally.

v. There is a quality inspection and testing facility which conducts several tests among which are the rain test to check for leakages, steering and wheel alignment, speedometer calibration as well as speed test which all aid in ensuring production of quality and safe buses.

vi. The plant creates a diversity of buses with different models, shapes and sizes, some being diesel while others electric. This highlighted why the production process is still low as the vehicles produced so far are concept vehicles, not yet commercial on a large scale.

vii. The manufacturing process is not yet fully automated due to the different designs that the plant operates.

2.5.2 Recommendations

The Committee recommends that;

i. Government adheres to the requests of the plant so as to enable it hit its growth target which should be in line with NDP IV that looks at import substitution as well as promoting export.

ii. Government should exempt import duty and VAT on Electric Vehicle production machinery and equipment.

iii. Government should put in place an e-Mobility Tariff for commercial and charging stations for public use to catalyse the deployment of e-Mobility solutions.

iv. Government should establish an e-Mobility Industry Human Capital Development program in order to develop the Human capital required for the industry to take off.

2.6 INSPIRE AFRICA COFFEE CONSORTIUM

Inspire Africa Coffee (IAC) is a business entity trading as Inspire Africa Establishments Ltd, a private limited company established and incorporated in Uganda in 2016 under Inspire Africa Group (IAG). Since its inception, the company has been operating at the extreme bottom line and at the top of the coffee value chain with operations including coffee primary production (coffee growing) and coffee roasting.

The company majorly deals in coffee value addition and manages the entire coffee value chain, from sourcing raw coffee beans to processing, roasting, packaging, retail distribution and export. The company has also established coffee shops and organic coffee blocks in the Western, Eastern, Northern and Central parts of Uganda.

IAC manages the state-of-the-art Africa Coffee Park, a Coffee Value Addition Hub situated in Rwashamaire town council, Ntungamo district, south western Uganda that is fast-tracking coffee value addition initiatives to locally produce the refined coffee products for the local market and export. The company is spearheading the transformation of coffee processing and branding, making it a recognized leader in premium sustainably sourced coffee products. With expertise in strategic leadership, supply chain optimization, and global market expansion of its proprietor Dr Nelson Tugume, IAC remains committed to elevating coffee quality, fostering direct partnerships with farmers, and driving sustainable growth. The key products produced by the company at the Africa Coffee Park are; Roasted coffee beans, grounded coffee, Haraka Instant coffee, cold brew (Iced coffee & Malt), Espresso coffee capsules, and a line of cosmetics (body scrubs, creams, lotions, and lip balms).

The company has also invested in promotion of coffee tourism through the establishment of a coffee tourism centre to promote experiential and coffee tourism. The tourism centre is comprised of; exhibition, convention, business and sports facilities. This will not only increase government revenue through earning from tourists but will also promote the culture of coffee consumption in the country as well as promote our premium coffee products to the international world. IAC is also investing in a coffee academy where coffee barristers and other personnel will be trained, farmers too will be trained and offered technical support through extension services.

2.6.1 Goals and Objectives

The overall strategic goal is to increase the value of Uganda's coffee export earnings from the current US$ 1.02 billion to US$ 5 billion in the next 5 years. This will be achieved through spearheading coffee value addition and processing innovations.

Our objectives are to;

i. Fast-track coffee tourism innovations to earn the country US$ 1 billion.

ii. Increase domestic coffee consumption from 8% to 30% through coffee promotions and making coffee affordable and available.

iii. Provide a platform for mobilisation of comprehensive investment for the coffee sector.

iv. Strengthen farmer engagement & linkages to profitable & inclusive markets that provide premium coffee prices for increased household income of the small holder farmers.

v. Create 1 million jobs along the coffee value chain through sustainable investment, value addition and skills development.

Increase production and productivity of coffee by supporting 1.8 million coffee growing households to improve quality, adopt sustainable climate smart technologies to enable the country move from 6.2 million bags to 30 million bags production annually in 10 years.

2.6.2 Medium and Long Term Strategy

Their medium-term strategy is to leverage investment in four key areas: Working with coffee cooperative societies through lead farmers and extension workers to enhance productivity and quality of coffee; investing in coffee processing & value addition; completion of the Africa Coffee Park in Ntungamo; spearhead coffee tourism and establishment of coffee marketing hubs in key target markets.

Their long-term strategy is to scale up efforts and resources towards international market penetration and expansion. This includes structured demand by establishing strong presence in key market, establishment of marketing hubs to ensure that Ugandan coffee is visible and present in major markets of Europe, USA and ASIA. This will be achieved through;

i. Enhancing Uganda's presence in key targeted markets by establishing coffee marketing hubs;

ii. Increasing processing, value addition and product diversification to produce quality products that meet the market demands by further enhancing the processing capacity;

iii. Coordinating and supporting farmers to enhance productivity using "each tree matters initiative" by targeting cooperative societies in each of the coffee growing districts.

iv. Improving quality to meet local and international standards as a driver for increasing market share.

2.6.3 Achievements of Inspire Africa Coffee

The Committee was informed of the achievements of IAC that included;

i. Inspire Africa Coffee launched a coffee farmer training and capacity building program on 1st February 2025 while meeting leaders of coffee cooperatives and farmer groups. The training program will focus on capacity building of farmers in coffee agronomy (GAPs), Climate Smart Agriculture practices (CSA) post-harvest handling management,

marketing among others. This will contribute to enhanced productivity and quality production.

ii. Through working with partner financial institutions like Equity Bank, the company is launching a digital and inclusive financial literacy program that will promote financial inclusion of rural coffee farmers across the country. This will increase access to loans for agricultural development.

iii. The company offers competitive prices to coffee farmers across the country using the contract farming approach. Farmers from distant places like Mbale, Zombo, and Kapchorwa will be offered opportunities to sell coffee to Inspire Africa.

iv. Through working with partners, the company in the long-term plans to establish coffee processing facilities like wash stations across the coffee growing districts to support farmers in quality management.

2.6.4 Committee findings and observations

The Committee observed that;

i. Inspire Africa Coffee has been allocated a total of 105 billion through Government's Innovation Fund.

ii. Inspire Africa targets both Robusta and Arabica coffee varieties, in which they envisage to process 10,000MT (10,000,000 kgs) of green coffee beans into high value-added products in the first one year of operation in the ratio of 4:1 respectively.

iii. Inspire Africa Coffee owns 90 acres of both Robusta and Arabica coffee varieties situated in Kajara county, Ntungamo district.

iv. Inspire Africa aspires to work with individual farmers, coffee cooperatives and farmer groups from across the country under the arrangement of "Contract farming". Under this initiative, farmers and farmer organisations will be offered long term supply contracts to supply coffee to the Africa Coffee Park at competitive prices. Further, under this initiative, farmers will be assured of market availability, supported access to farm inputs, as well as agricultural credit facilities from partner financial institutions, like Equity Bank.

v. Inspire Africa is aspiring to support farmers to produce quality coffee, access post-harvest handling equipment and technologies that will enable them supply coffee at prior agreed competitive prices and timelines of delivery. The contract farming approach will protect the interest of the farmer and Inspire Africa the main buyer. Additionally, farmers will be protected from unscrupulous and often exploitative middlemen and price fluctuations.

vi. Furthermore, the company has established a comprehensive supply chain management plan to fast-track aggregation and sourcing of green beans across all coffee growing regions in Uganda. The strategy of working with coffee cooperatives and farmer groups will ensure quality coffee is sourced. Collaboration efforts with all coffee cooperatives and farmer groups are ongoing. These efforts commenced on 1st February 2025 during a meeting held at the factory in Ntungamo involving leaders of cooperative leaders and farmer groups from across the country. It is through this meeting that mechanisms of coffee aggregation were established. By start of May, all regions will be visited to formalise engagements. We plan to establish an efficient fleet of vehicles that will aid the transportation of green beans from across the country.

vii. The Committee was informed that the production / absorption capacity of the Africa Coffee Park will be 10,000MT in year one; 30,000MT in year 3 and 50,000MT in year 5. The company has instituted an effective supply chain management framework to guarantee optimal processing capacity utilisation

viii. The Committee was further informed that Inspire Africa started the coffee value addition innovations back in 2016 and the establishment of the Africa Coffee Park commenced in 2021 as an initiative to scale up the coffee value addition business. The Committee was equally informed that due the strategic importance of the intervention, Government of Uganda picked interest due to the project's alignment with the National objectives of promoting industrialisation and value addition as a pathway to socio-economic transformation.

ix. The Committee was informed that Inspire Africa possesses MoU with the Government of Uganda through Ministry of Science and Technology, Office of the President-STI-OP. (The MoU documents were not availed to the visiting team of MPs)

x. The Committee was informed by IAC that Environmental Impact assessment (EIA) was conducted by NOVA ENVIRO CONSULT (U) LTD back in April 2020. The identified potential environmental harms and proposed respective mitigation measures for ensuring sustainable development and complying with environmental regulations was done.

xi. Further, the Committee was informed by IAC that, a number of measures were put in place to control vegetation, environment, air and noise pollution which is highlighted in the table below;

Identified Impact	**Mitigation measure**
Loss of vegetation cover	-The disturbed areas around the site have been replanted with indigenous vegetation that include; grass, coffee trees, quick maturing indigenous trees. -Each contractor at the site is required to prepare and implement Erosion and Sedimentation Control Plans
Changes in surface and sub-surface hydrology	-During construction, the drainage system was designed in such a way that ensures that surface flow is drained suitably into the public drains provided to control flooding within the site. -Drainage channels have been installed in all areas that generate or receive surface water such as car parking, driveways and along the building block-edges of the roofs. -The drainage channels have been covered with gratings and other suitable materials to prevent occurrence of accidents and entry of dirt that would compromise flow of run-off.
Changes in soil characteristics	-Sprinkling water on the soil to prevent dust from rising is regularly done.

	- Specific sites for collection, sorting and transport of wastes have been allocated to prevent pollution from construction wastes. - Configuration of drainage structures and Proper installation has been considered to ensure their efficiency. -Cascades have been Installed to break the impact of water flowing into the drains. - Areas with loose soil are compacted regularly. - Controlling the earthworks and management of excavation activities has been ensured. - Proper landscaping after construction of the buildings has been ensured.
Emissions of air pollutants	Sprinkling water on soil before excavation and periodically when operations are under way to prevent raising of dust has been ensured. - Use of dust screens have been explored to minimize the accumulation of dust and dirt in and around the project site. - Workers at the site are provided with protective clothing to avoid negative health effects. - Structures under construction are enclosed with dust proof nets -Efficient machines with low emission technologies are prioritised at the site than those that burn fossil fuels. - Regular maintenance and servicing of machines and engines is periodically undertaken. -The speed and operation of construction vehicles is controlled - The site uses clean fuels for example, unleaded and de-sulphurised fuels.

	-Construction workers are regularly educated and sensitised on emission reduction techniques.
Noise from construction activities	-Construction workforce especially machine operators are provided with appropriate Personal Protective Equipment (PPE) in form of earplugs, earmuffs. - Noisy construction machinery is directed away from the direction of sensitive receptor(s) and its use normally restricted to mitigate noise pollution. - The generators at the factory are fitted with silencers to keep noise levels below international permitted noise standards.
Construction debris and waste	-The company implements a comprehensive waste management plan that is anchored on pollution prevention and waste minimisation. Waste management facilities like waste containers are used at the site during construction that take into account waste segregation. -Appropriate waste management practices like: Separation of wastes according to their respective hazardous and non-hazardous nature and their proper treatment and disposal is ensured with special attention paid to any hazardous wastes. -A sewage treatment plant has been established to ensure treatment of waste before being released to the environment.
Impaired air quality	-To avoid the generation of unnecessary dust, material drop height is kept to a minimum - Dust at the site is kept to a minimum through occasional wetting. The same is applied on banked soil stockpiles. Wetting is usually increased during high wind days and during dry spells or seasons

***Source:** Inspire Africa Coffee written memoranda to the STI Committee*

2.6.5 Committee Recommendations

The Committee made the following recommendations;

i. Government should ensure that Inspire Africa Coffee is well facilitated installation of constant water flow and power supply is constant for smooth and efficient operations.

ii. The local people need to be entrenched into the project through community out-reach; mobilisation and sensitisation. They need to get privy to the fact that coffee drinking is not an alien practice

iii. Inspire Africa Coffee should adhere to the recommendations Environment Impact Assessment report since the project is surrounded by local communities in the neighbourhood

iv. Inspire Africa Coffee should endeavour to utilise more of local labour in order to create bigger employment base for the local population.

3.0 GENERAL RECOMMENDATIONS

The Committee recommends that;

i. Government should review the STI policy and ecosystem as a whole in order to support science research, development and related programs.

ii. Government should provide more funding to spur the growth of these centres and ensure value addition to the raw materials that we have in plenty.

iii. Government should streamline the fund allocation for research and development in Science Technology and Innovation considering the output realised for the benefit of the targeted beneficiaries

iv. Government should ensure that more scrutiny of the projects and their supervision is intensified, to ensure that the implementing bodies deliver as according to the stipulated objectives and timeframes.

v. Government should review and amend the existing legal regime to address the emerging technological trends in the global changing patterns and in the STI ecosystem, as a whole.

vi. Government should ensure that projects which benefit from Government funding have strategic plans in place. This ensures guided operation and streamline course of action.

vii. Government should ensure that the mandates of UNCST and UIRI are streamlined to address the existing conflict of interest and the resultant likely sinecures.

viii. Government should ensure that all procured equipment is profiled and kept under the proper custody of the entity implementing the respective running Government project

4.0 Conclusion

The Committee recommends that this report be adopted.

I beg to submit

REPORT OF THE COMMITTEE ON SCIENCE TECHNOLOGY AND INNOVATION ON FIELD VISITS TO SELECTED INDUSTRIAL VALUE CHAINS IN THE CENTRAL AND EASTERN REGIONS.

No.	Names	Signature
1	Hon. Niyonsaba Alex, **Chairperson**	
2	Hon. Asiimwe Florence Akiiki, **Deputy C/P**	
3	Hon. Kyobe Luke Inyensiko	
4	Hon. Wambedde Seth Massa	
5	Hon. Mbayo Esther	
6	Hon. Awany Tony	
7	Hon. Ojok Andrew Oulanyah	
8	Hon. Kubeketerya James	
9	Hon. Okiror Bosco	
10	Hon. Adome Francis Lorika	
11	Hon. Okot Boniface Henry	
12	Hon. Werikhe Peter Christopher	
13	Hon. Okori-moe Janet Grace	
14	Hon. Ezama Siraj Brahan	
15	Hon. Feta Geofrey	
16	Hon. Nafuna Muloni Irene	
17	Hon. Musinguzi Yona	
18	Hon. Dr Ninkusiima John Paul	
19	Hon. Nsamba Patrick Oshabe	
20	Hon. Aol Betty Ocan	
21	Hon. Auma Kenny	

18	Hon. Dr Ninkusiima John Paul	
19	Hon. Nsamba Patrick Oshabe	
20	Hon. Aol Betty Ocan	
21	Hon. Auma Kenny	
22	Hon. Kinobere Herbert Tom	
23	Hon. Dr Okullu Aabuka J. Anthony	
24	Hon. Najjuma Sarah	
25	Hon. Dr. Rutahigwa Elisa	
26	Hon. Akugizibwe Aled Ronald	
27	Hon. Adidwa Abdu	
28	Hon. Mboizi Arthur Waako	
29	Hon. Ameede Agnes	
30	Hon. Walyomu M. Moses	
31	Hon. Kayondo Fred	
32	Hon. ~~Awany Tonny~~ Lekuj Joel	