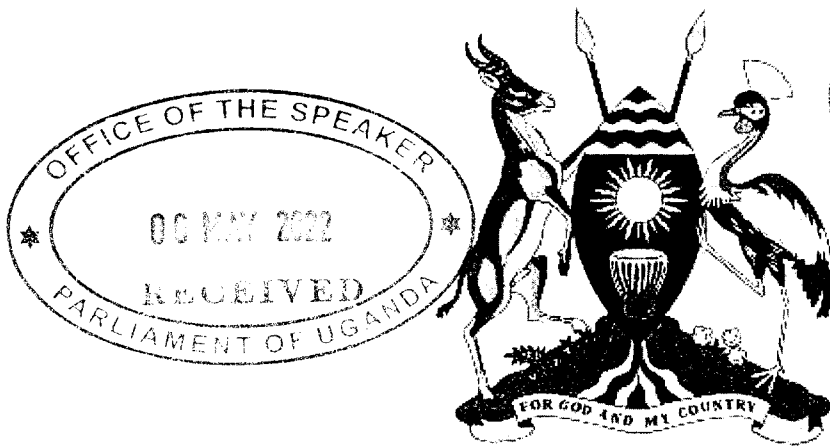


PARLIAMENT OF UGANDA



THE REPUBLIC OF UGANDA

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REPORT OF THE SELECT COMMITTEE ON SCIENCE, TECHNOLOGY AND
INNOVATION ON COVID-19 RELATED RESEARCH FOR FY 2019/20 TO FY
2021/22

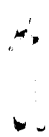
OFFICE OF THE CLERK TO PARLIAMENT

MAY 2022

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LIST OF ABBREVIATIONS AND ACRONYMS

CEDAT	College of Engineering, Design, Art and Technology
CHS	College of Health Sciences
COVAB	College of Veterinary Medicine, Animal Resources and Bio-Security
COVID-19	Corona Virus Disease- 2019
CPHL	Central Public Health Laboratories
FY	Financial Year
GoU	Government of Uganda
IFMS	Integrated Financial Management System
JCRC	Joint Clinical Research Center
MAK-SPH	Makerere University School of Public Health
MDA(s)	Ministries, Departments and Agencies
MoFPED	Ministry of Finance Planning and Economic Development
MoH	Ministry of Health
MoSTI	Ministry of Science, Technology and Innovation
MoU	Memorandum of Understanding
NDA	National Drug Authority
NRIP	National Research Innovation Programme
OP	Office of the President
PCR	Polymerase Chain Reaction
PFMA	Public Finance Management Act
PPE	Personal Protective Equipment



1 INTRODUCTION

1.1 MANDATE OF THE SELECT COMMITTEE

Rt. Hon. Speaker and Hon. Members,

In accordance with Rule 190, of the Rules of Procedure of Parliament, the Rt. Hon. Speaker of Parliament, Anita Annet Among (MP) on 10th November 2021 constituted a Select Committee on Science, Technology and Innovation to investigate allegations of irregularities reported on the receipt and utilization of funds for COVID-19 vaccine development by the Presidential Scientific Initiative on Epidemics (PRESIDE) under the supervision of Hon. Dr. Monica Musenero Masanza (then Senior Presidential Advisor on Epidemics).

Parliament mandated the Committee to carry out investigations with the following Terms of Reference:

1. To establish the progress in development of a locally manufactured COVID-19 vaccine;
2. To establish the amount of funds so far released to the research, innovation and COVID-19 vaccine development;
3. To establish how effectively such funds had been utilized;
4. To establish the challenges faced in the development of COVID-19 vaccines and medicines;
5. To inquire into any other matters incidental to the above;
6. To recommend a way forward to Parliament; and
7. To report back to Parliament within two (2) weeks.

When the Committee began its investigation, it became apparent that funds had been released towards COVID-19 research, of which manufacturing of vaccines was only a component. This committee investigation therefore covered COVID-19 research in its entirety.

At the expiry of the two weeks, the Committee appreciated the complexity of the assignment and sought for an extension in time for reporting, which was granted.



1.2 COMPOSITION OF THE SELECT COMMITTEE

In accordance with Rule 190 (2) of the Rules of Procedure of Parliament, five members were nominated. These were:

- | | | |
|------|---------------------------|--|
| i. | Hon. Kyooma Xavier | Ibanda County North (Chairperson) |
| ii. | Hon. Awany Tony | Nwoya County |
| iii. | Hon. Aisha Kabanda Nalule | Butambala DWR |
| iv. | Hon. Omara Paul | Otuke County |
| v. | Hon. Silwany Solomon | Bukooli County |

The select Committee hereby reports.

2 METHODOLOGY

In conducting the investigation, the Committee;

- a) Held consultative meetings with key stakeholders in relation to COVID-19 research. These included:
 - i. The petitioner, Hon. Musinguzi Yona (Member of Parliament, Ntungamo Municipality)
 - ii. Minister responsible for Science, Technology and Innovation; Hon. Dr. Monica Musenero Masanza
 - iii. Selected scientists supported by PRESIDE to carry out research from:
 - Makerere University, College of Veterinary Medicine, Animal Resources and Bio-Security (COVAB)
 - Joint Clinical Research Centre (JCRC)
 - Uganda Virus Research Institute (UVRI)
 - Busitema University
 - Makerere University College of Health Sciences (CHS)
 - Makerere University, College of Engineering, Design, Art and Technology (CEDAT)
 - National Chemotherapeutics and Research Institute
 - Presidential Initiative on Banana Industrial Development
 - Makerere University Department of Biotechnical and Diagnostic Science
 - iv. Other Scientists engaged in COVID research:

- Prof. Patrick Ogwang Engeu Jena Herbals Uganda Limited
 - Scientists from Gulu University
- v. Dr. Ongol Martin, the Acting Executive Secretary, Uganda National Council for Science and Technology (UNCST)
 - vi. Former Staff of the defunct MoSTI led by the then PS MoSTI, Mr. Obong David
 - vii. Ms. Barekye Jane, the State House Comptroller
 - viii. Haji Kakande Yunus, the Secretary to the Presidency
 - ix. The Auditor General
 - x. The Permanent Secretary/ Secretary to Treasury
 - xi. The Minister of Public Service
 - xii. The PRESIDE staff
 - xiii. Hon. Elioda Tumwesigye- former Minister of Science, Technology and Innovation
 - xiv. Health professionals and consultants including Hon. Dr. Gordon Sematiko (*the former Executive Director of the National Drug Authority*), among others
- b) Reviewed documents submitted by stakeholders, relevant laws, regulations and Policy documents, and the Hansard.
 - c) Undertook field activities assessing the level of operationalization of facilities and progress of COVID- research projects. These included: Uganda Virus Research Institute; Joint Clinical Research Center; Jena Herbal Laboratory; Gulu University and Busitema University; Makerere University College of Veterinary Medicine, Animal Resources & Bio-Security; and the PRESIDE Offices.

3 BACKGROUND

3.1 BACKGROUND TO INVESTIGATION

During the plenary sitting on 4th November 2021 while responding to Hon. Dr. Jane Ruth Aceng's update on COVID- 19 vaccination in the country, Hon. Yona Musinguzi raised concerns regarding irregularities in use of public funds that had been released to produce a local vaccine for COVID-19.



In his statement, he indicated that up to UGX. 20bn had been drawn from the consolidated fund for scientists under PRESIDE to manufacture a COVID-19 vaccine and an additional UGX. 50bn was drawn in 2021 for PRESIDE, and yet supervising Ministry (Ministry of Science, Technology and Innovation) had been disbanded. He further questioned the legality of the Presidential Scientific Initiative on Epidemics (PRESIDE), queried its staffing, operations and whether its premises in Ntinda that had no laboratories would be able to produce a vaccine.

On the 9th November 2021, Hon. Musinguzi Yona supported his allegations with documentary evidence laid on table including financial and appropriation documents, as well as correspondences among Government agencies regarding financing of PRESIDE. The documents laid on table are as indicated under Appendix 1.

Consequently, the Rt. Hon. Speaker constituted a Select Committee to investigate the allegations and report back.

3.2 THE CORONAVIRUS OUTBREAK

Corona Virus Disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in Wuhan city (Hubei Province) Central China, when the World Health Organisation (WHO) office in China received a report of twenty nine (29) pneumonia cases of unknown cause on 31st December 2019. The genetic sequence of the virus was shared on 11th January 2020 and currently, there are Four hundred fifty (450) million confirmed cases of COVID-19 and at least Six (6) million deaths worldwide¹.

On 30th January 2020, the WHO declared the COVID-19 outbreak a public Health Emergency of International concern (PHEIC), the highest level of severity, at a time where it had spread to over twenty (20) countries with almost ten thousand(10,000) confirmed cases and more than two hundred (200) deaths². At

¹ Statistics as at 1st March 2022, Accessed at: <https://covid19.who.int/>

² Global Research Collaboration for Infectious Disease Preparedness, WHO (2020) COVID19 Public Health Emergency of International Concern (PHEIC) Global research and innovation forum: towards a research roadmap.



a national level, Uganda has since registered at least 163,000 confirmed cases and 3500 deaths from COVID-19³.

Following this, countries around the world put in place structures, systems and infrastructure to accelerate research and development for diagnostics, therapeutics and vaccines to address challenges in the management of the COVID-19 outbreak and to develop platforms to safeguard against future epidemics. As a result, several vaccines were produced from companies such as Sinovac (China), Pfizer (United States), BionTech SE (European Union), University of Oxford/ AstraZeneca (UK, Australia, Argentina)etc⁴.

By virtue of its location as a landlocked country and a transit route to other countries in the region, Uganda is predisposed to persistent threat of entry of infectious pathogens and faces challenges of inadequate mechanisms to detect, treat and control of such diseases, including COVID-19. Further, its tropical climate is conducive for multiplication of disease causing organisms. It is therefore upon this premise that the Presidential Scientific Initiative on Epidemics (PRESIDE) was established as a platform to fast track local research and development so as to generate products to enable the country cope with the COVID-19 pandemic and future health threats.

4 SUMMARY OF FACTS ESTABLISHED

Upon investigating the matter at hand, the Committee established that, following the outbreak of the COVID- 19 pandemic and its effects, His Excellency the President of Uganda through a letter dated 6th May 2020, to the Prime Minister (Rt. Hon. Dr. Ruhakana Rugunda) directed that an initiative/ scientific think tank (The Presidential Scientific Initiative on Epidemics - PRESIDE) be established. He also directed that UGX. 2bn be released to the State House Comptroller to facilitate the operations of the initiative including supporting the operations of the PRESIDE Secretariat and initial research activities, as reflected in the Prime Minister's letter

³ Ministry of Health Uganda: <https://www.health.go.ug/> Accessed on 10th March 2022

⁴ <https://globalcommissionforpostpandemicpolicy.org/covid-19-vaccine-production-to-july-31st-2021/>

dated 18th May, 2020 to the Minister of Finance Planning and Economic Development (Appendix 2)

On 29th May 2020, the Prime Minister informed Dr. Musenero Monica Masanza and the State House Comptroller of H.E the President's directive and asked them to follow up the matter.

A secretariat known as PRESIDE was established under the stewardship of Dr. Monica Musenero Masanza (the Special Presidential Advisor on Epidemics) as its Chairperson (letter of this appointment is captured in Appendix 3), to coordinate the activities of the scientists in development of COVID-19 vaccines and COVID-19 related solutions. The initiative was set up as a mechanism to fast track research and development for local generation of essential response tools.

Specifically, the initiative was to provide technical and supervisory support to scientists and researchers to:

- i. Identify research and development priorities required to lead the country towards containment of the COVID-19 public health security threat;
- ii. Conduct rapid epidemiological analysis of evidence and recommend appropriate interventions against COVID-19 at national level;
- iii. Provide funding for local scientists to enable them to fast track the development and productions of biologics;
- iv. Harness the opportunities presented by the COVID-19 pandemic and the pathogen economy as a whole; and
- v. Think tank strategic research and analysis geared at strengthening policy and design socio-economic interventions as well as harnessing opportunities for post-COVID recovery periods.

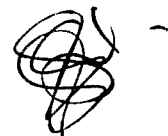
Through think tanking, hackathons and scientific reviews, Ugandan scientists came up with project proposals which were vetted and peer reviewed virtually and twenty three (23) projects were cleared for funding as a way of developing workable solutions for COVID-19 containment and vaccine development.

Parallel to this, MoSTI advertised through a newspaper for Ugandan scientists to submit research proposals related to COVID-19 in April 2020 under the National Research and Innovations Programme (NRIP). The MoSTI had earmarked UGX. 2.74bn for NRIP from the Innovation Fund. The MoSTI went ahead to vet the proposals from applicants that responded to the call and funded the successful applicants.

Since both PRESIDE and MoSTI were funding COVID-19 research, it was resolved following deliberations between the Ministry of Finance, Planning and Economic Development, MoSTI and PRESIDE that, for consistency and ease of follow up of scientists, funds for scientists under the coordination and support of PRESIDE be provided through MoSTI which would also continue supporting other scientists through the Innovation Fund.

It was further resolved that a total of UGX. 31.03bn would be provided in FY 2020/21 for scientists under PRESIDE out of which UGX. 15.787bn would be for procurement of equipment while UGX. 15.245bn was for project operational costs. The support for the PRESIDE secretariat would be budgeted for under State House and UGX. 3.35bn was allocated during the FY 2020/21 and out of which UGX. 1.5bn had been programmed in the first quarter. This is contained in a letter by the Permanent Secretary/Secretary to Treasury (PSST) to the permanent Secretary (PS) MoSTI (see Appendix 4 for this letter).

Government through the Ministry of Finance, Planning and Economic Development provided UGX. 31.03bn to kick start the COVID-19 research projects under the supervision and coordination of PRESIDE and this money was forwarded through MoSTI as the overall accounting entity. MoSTI then entered into a Memorandum of Understanding, on 7th September 2020 with PRESIDE to provide a framework of cooperation and to facilitate and strengthen collaboration between the two parties. This MOU highlights the responsibilities of the parties and some of these are as below:



4.1 RESPONSIBILITIES OF MOSTI

1. MoSTI was to hold, keep earmarked funds for purposes of funding, research, development and innovation projects relating to COVID-19 and release the funds to the projects approved for funding by PRESIDE.
2. MoSTI was also to lead final evaluation and participate in exit meetings before completion of projects.
3. MoSTI was to manage the funds and provide accountability in accordance with the Public Finance Management Act, 2015.

4.2 RESPONSIBILITIES OF PRESIDE

1. PRESIDE was to provide technical and administrative oversight at execution level of research projects, vet and approve applications for funding and verify the project specifications, technical requirements, research appropriateness and core competences of the research teams.
2. PRESIDE was to issue clearance certificates for funding at each phase and require accountability for funding at each stage.
3. PRESIDE was to appraise projects and review project performance at each stage of funding and evaluation.
4. PRESIDE was to account to MoSTI for all monies advanced by MoSTI as required by law.

The MOU was entered into for purposes of the UGX 31.03 billion shillings that had been earmarked by government for financing projects coordinated by PRESIDE and it was for a term of one year expiring on 30th June 2021 unless renewed. The MOU was never renewed although the scientists continue to operate under the initiative. While the Procurement of equipment was done by MoSTI, scientists working under PRESIDE identified the equipment gaps, suppliers and provided specifications of the machines they wanted purchased to PRESIDE for approval and further submission to MOSTI for procurement.

Overall funding for COVID- 19 research was as follows:

- UGX. 5.3bnfor PRESIDE projects in FY 2019/20



- UGX. 31.03bn for projects under PRESIDE, UGX. 3.35bn for PRESIDE secretariat operations, and UGX. 2.74bn under NRIP in FY2020/21
- UGX. 25bn for project operations, a supplementary request of UGX. 50.4bn for a manufacturing plant and UGX. 27bn for additional operational funds for PRESIDE projects in FY 2021/22.

5 LIMITATIONS FACED DURING THE INVESTIGATION.

In execution of its mandate the Committee faced the following challenges;

- i. Unwillingness of potential witnesses to appear for interactions with the Committee which affected the timeframe for reporting;
- ii. Unwillingness by some witnesses to provide documentary evidence and written responses to issues raised by the Committee. This further curtailed the Committee's investigation.
- iii. Misrepresentation and maligning the Committee investigation and its witnesses in the media especially on social media forums and online newspapers.
- iv. The Committee was not able to undertake a benchmark visit due to the outbreak of the Omicron COVID variant outbreak.
- v. Limited financial and logistical support to comprehensively conduct comparative benchmarking visits.

The above limitations notwithstanding, the Committee ably executed its mandate.

6 COMMITTEE OBSERVATIONS

The Committee makes the following observations under the Terms of Reference.

6.1 TOR 1: TO ESTABLISH THE PROGRESS OF DEVELOPMENT OF A LOCALLY MANUFACTURED COVID-19 VACCINE

This TOR highlights progress of COVID-19 research projects for the FY2020/21 and FY2021/22. The vaccine manufacture was only a component of this research and is therefore discussed as such.



6.1.1 COVID- 19 RELATED RESEARCH PROJECTS UNDER PRESIDE

6.1.1.1 Diverse Nature of Projects

The committee established that 23 projects were approved for funding under PRESIDE in FY 2020/21 as summarized in table 1 below.

Table 1: Selected Projects for Funding Under PRESIDE for the FY 2020/21 and FY 2021/22

Projects Selected for Funding in the FY 2020/21			
No	Project/Concept Title	Scientist	Institutions
A. Concepts/Projects for Diagnostics			
1	The PCR and anti-body diagnostic kits	<u>Prof. Joloba Moses</u> , Dr. Bagaya Bernard, Dr. David Kateete	COVAB, CHS
2	PCR based Diagnostic assays	<u>Dr. Cissy Kityo</u> , Dr Nankya, Dr Kyeyune, Prof Matovu	JCRC, COVAB
3	Saliva Diagnostic Kit	<u>Prof. Charles Ibingira</u> , Dr. Eddie Wampande, Moses Okee, Brian Mujuni	CHS, COVAB, CEDAT - MUK
4	NANO- Adjuvant Therapeutics, Vaccine adjuvants & materials testing	<u>Prof. Ibingira C.</u> , Prof. J B. Kirabira, Dr. Wampande, Dr. HarunaMuwonge, Brian Mujuni	MAPRONANO ACE, CEDAT, COVAB, - MUK, UVRI
5	Development of Antibody ELISA for COVID-19 surveillance	<u>Prof. Enock Matovu</u> , Prof. Kabasa,D, Prof. Vinand Nantulya,	MUK- COVAB, Brentec Investments
B. Concepts/Projects for Vaccine Development			
6	COVID-19 Subunit Vaccine	<u>Prof. Enock Matovu</u> , Prof. Joloba Moses, Prof. J.D Kabasa, Dr. Bagaya Bernard,	COVAB, Mak-CHS
7	Inactivated Covid-19 Vaccine development	Prof P. Kaleebu, <u>Dr Jennifer Serwanga</u> and Prof J.D. Kabasa	UVRI & COVAB
8	Self-Amplifying RNA	<u>Prof Pontiano Kaleebu</u> , Dr Paul Kato	UVRI
9	Novel Adenovector COVID- 19 Vaccine	Prof P. Kaleebu, Prof. Mathew Cotton, <u>Dr Balinda Shiela</u> and Prof J.D. Kabasa	MRC/UVRI & LSH TM and COVAB
C. Concepts/Projects for Therapeutics/Treatments			
10	Immune Therapy - Convalescent plasma	<u>Dr Cissy Kityo</u> , DrSsali, Dr Muyanja, Dr Kyeyune, Dr Kirega	JCRC , MUK
11	Stem Cell Research	DrSsali, <u>Dr Kityo</u> , Dr Muyanja, Dr Nankya, Dr Kyeyune	JCRC
12	Therapeutic Intervention for COVID- 19 using Antivirals, Immune modulators and antiplatelet agents	<u>Dr Cissy Kityo</u> , Dr Henry Mugerwa, Dr Abbas	JCRC

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13	Identification and optimization of available drug molecules for clinical treatment of COVID- 19	<u>Dr. Jackson Mukonzo</u> , Dr Edward Wampande , Dr. Fred Kyeyune, Dr. Lydia Bunalema, Dr Patrick Ogwang Dr. Nankya Immaculate	CHS, COVAB-MUK and MUST
14	The Production and Clinical Evaluation of Herbal Medicinal Drugs for effective Management of COVID-19 and other Diseases in Preparation for Future Epidemics in Uganda	<u>Dr Nambatya Kyeyune</u> , Tumusiime Henry, Dr. Francis Omujal, Dr Balikuddenbe Robert, Moses Agwaya	Natural Chemotherapeutics& Research Institute(NCRI) - Wandegaya & MUST
15	Assessment of Vit D plasma levels in high risk groups (Diabetics, Hypertensives, Cancer COPD, HIV, Health workers)	<u>Dr. Noah Kiwanuka</u> ,Prof. Lubega John &DrMuranga F	WINDSOR
16	Therapeutic Interventions with Colostrum, Immunoglobulins and Vit D	<u>Prof. Lubega John</u>	WINDSOR
17	Matooke Starch as a Pharmaceutical Excipient in Selected Medicinal Formulations for use in the treatment of COVID- 19	<u>Rev. Florence IsabiryeMuranga</u> , Pamela Purity E, John B. Kawongolo, George Kulaba	PIBID/BIRDC
18	Evaluation of the anti-SARS-COV-2 Activity of Tephrosialinear, Zanthoxylumchalybeum and Albic-acoriaria and formulation of a herbal product for management of COVID-19	<u>Dr. Samuel Baker Obakiro</u> , Paul Wako, Yahaya Gavamukulya	Busitema University
D. Material/Central support for development of Vaccines, Diagnostics & Therapeutics			
19	Lab Animal house	<u>Prof. Kabasa</u> , Dr Wampande Eddie	Makerere University COVAB
20	Equipment for biomarker research facility	<u>Dr Kato C. Drago</u> , Dr. Niyonzima N, Prof. Matovu E, Assoc. Prof. Othieno E, Dr. Ssebugere	MUK-Department of Biotechnical and Diagnostic Sciences, Cancer Institute, COVAB, Soroti University
21	Establishment of a high-quality biobank of samples from COVID-19 patients to facilitate research in diagnostics, treatment and vaccines	<u>Prof Moses Joloba</u> , Dr. Barnard Bagaya, Dr Kateete David, Gerald Mboowa, Rose Magala, Sande Obondo and Emmanuel Nasinge	Mak-CH S & COVAB
22	Support towards operational costs of the vaccine/test kits manufacturing facility	<u>Prof. Vinand Nantulya</u>	ZYGEN Biotech (U) Ltd
23	Equipment for testing facemasks and other personal protective ware	Dr. Ben Manyindo, Denis Mubangizi	Uganda National Bureau of Standards
Projects Selected for Funding in the FY 2021/22			
24	Equipment for Testing PPE like masks	Dr. David Ebiru	UNBS
25	In-vitro studies for herbal research	JackeKyosimire	UVRI
26	Anti-microbial surveillance, modelling and PCR tests development	Prof. Joel Bazira, Prof Livingstone Luboobi, Dr Jacob Iramoit	MUST

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27	Investigation of local material for the development of Medical Masks	Denis Dokoria	UIRI
28	Development of regulatory supplies (swabs, gloves, cryo Vials, Falcon tubes, sample collection materials)	Prof JB Kirabira	Makerere University CEDAT
29	Bio-base polyphenol project	Solomon Ongora	MUK College of Natural Sciences
30	COVID-19 Natural Therapeutics Trial (CONAT)	Dr. Bruce Kirenga, Prof. Pauline Byakika	MUK College of Health sciences
31	Ivermectin & Low-dose Aspirin Study (IVCOM Project)		
32	Bee products and Warbugia ugandensis		
33	Vitamin D study		
34	Herbal Products for Management of COVID-19		
35	Pathogen Epidemiological studies		
36	Nutri meal project from finger project		
37	Development of customized ICT pathogen economy		

Source: Petitioner's documents, Presentations made to the Committee and the Budget committee report on supplementary 2020/21

These projects were diverse in nature and covered aspects of diagnostics, vaccine development, treatment and material support for COVID-19. Their breakdown is as follows:

- i. Diagnostics (Projects 1 to 5)
- ii. Vaccine development (Projects 6 to 9)
- iii. Therapeutics/ treatment (Projects 10 to 18)
- iv. Material/Central support for development of Vaccines, Diagnostics & Therapeutics (Projects 19 to 23)

The projects were motivated by the need for the country to develop its capacity in managing the emergent COVID-19 pandemic and also address vaccine hoarding by the developed countries.

Observation:

The Committee observed that the diversity in selection of projects was necessary and timely to ensure that the country developed local solutions to address challenges in diagnosis, treatment and vaccine development for COVID-19.



6.1.2 Progress of Research Projects

6.1.2.1 Projects on Diagnostics (Projects 1 to 5)

The committee noted that four (1, 2, 3 and 5) out of the five projects had progressed but at a slow rate. Project 4 was largely affected by technical challenges which to date affects its implementation.

In respect to Project 1 on PCR and anti- body diagnostic kits, it was noted that plans for establishing a production facility were on course with requisite funding provided for in FY2021/22.

It was established that the Central Public Health Laboratories (CPHL) under the Ministry of Health is the technical focal point for laboratory services, a role it plays in conjunction with National Drug Authority, the Allied Health Professionals Council and Uganda National Health Research Organization. The approval of devices used for viral diagnostics are approved by NDA on recommendation by Uganda Virus Research Institute while those used in bacteria diagnostics are approved upon recommendation by CPHL. However there is a lacuna in the NDA Act, which is silent on approval of laboratory services. It is for this reason that the National Health Laboratories Bill was introduced in Parliament but was withdrawn due to the policy on rationalization of institutions of Government.

On the other hand, although project 4 in table 1 was considered as having progressed, it was lagging behind, pending completion of the lab animal house project. It was anticipated that this project was to rely on the mice from the lab animal house for its preclinical trials.

Observations:

The Committee observed that in as much as project 1 had plans to set up a production facility, there was no evidence that they had been cleared by CPHL to commercially produce diagnostic kits.

Failure to approve the National Health Laboratories Services Bill leaves a lacuna in licensing products from medical research.

Committee Recommendations

13



The Committee recommends that;

- i. Construction of a production facility for anti-body diagnostic tools should be preceded with acquisition of the necessary approvals from NDA.**
- ii. Parliament should re-table and pass the National Health Services Bill as a means of strengthening the regulation of health laboratory services. Alternatively, the National Drug Authority Act may be amended to include provisions on regulating laboratory services and products.**

6.1.2.2 Vaccine development (Projects 6 to 9)

Four projects were selected under vaccine development. Three of these were reported to have progressed, while one stalled, as described below. It is important to note that production of vaccines is based on four main approaches of vaccine development i.e. inactivated vaccine, live-attenuated vaccine, viral vector vaccine and subunit approach.

It is also important to note that all vaccines go through three the major stages for their development.

Exploratory stage: This involves carrying out of laboratory research to isolate possible vaccine formulations/ candidate vaccines that could trigger immune responses.

Pre- clinical Stage: This is the use of laboratory and animal studies to identify the safety concerns before testing vaccines in humans and to also identify the safest dose for administration.

Clinical stage: This involves testing of vaccines in humans. This stage is further subdivided into three phases

Phase 1: a small number of volunteers is used to test whether a vaccine causes an immune response.

Phase 2: This involves use of larger groups of people including those at risk of disease to test immune response and safety at different doses.



Phase 3: This involves use of large groups of people to compare those who received that vaccine and those that did not.

According to the World Health Organization, approximately 7% vaccines proceed to clinical stage⁵ and of these, only 20% have a chance of success. Having many of them under trial increases chances of success⁶. Further WHO estimates that the whole process, from preclinical trial to manufacture, may take up to a decade to complete.

In the search for a COVID-19 vaccine, researchers and developers embarked on the several different phases in parallel, to speed up results. Additionally, the scale of the financial and political commitments to the development of a vaccine and international collaboration through outfits like COVAX also allowed this accelerated development to take place,⁷ thus achieving a vaccine in less than two years. For instance, the United States and Germany invested approximately \$2 billion and \$1.5 billion respectively in COVID-19 vaccine Research & Development by March 2021, of which 98.12% was public funding⁸.

6.1.2.2.1 Progress of the COVID-19 Subunit Vaccine project

A subunit vaccine is one that only uses specific parts (the subunits) of a virus or bacterium to trigger an immune response⁹. It was indicated to the Committee that a vaccine had been developed and had completed preclinical studies in ordinary mice, with data analysis being in the final stages. It was further reported that the vaccine was found to be safe and elicited a strong immune response. The

⁵WHO (2020) The different types of COVID-19 vaccines. Accessed at <https://www.who.int/news-room/feature-stories/detail/the-race-for-a-covid-19-vaccine-explained>

⁶ ibid

⁷ WHO (2020), Manufacturing, safety and quality control of vaccines. Accessed at <https://www.who.int/news-room/feature-stories/detail/manufacturing-safety-and-quality-control>

⁸ Niall McCarthy (2021) Which Companies Received The Most Covid-19 Vaccine R&D Funding? [Infographic] Accessed at: <https://www.forbes.com/sites/niallmccarthy/2021/05/06/which-companies-received-the-most-covid-19-vaccine-rd-funding-infographic/?sh=37565a434333>

⁹WHO (2020) The different types of COVID-19 vaccines. Accessed at <https://www.who.int/news-room/feature-stories/detail/the-race-for-a-covid-19-vaccine-explained>

preclinical trials were to be followed by proof of efficacy in the special mice, “Mousenero”. (See Appendix 5 for Dr. Musenero’s presentation of 3rd March 2022)

Observations:

The Committee observes that although a candidate vaccine was identified, there is no indication that it has been patented or that patenting is in the pipeline which casts doubt on its identification.

Further, although Dr. Musenero indicated that preclinical trials in ordinary mice had been completed and in the final stages of data analysis, her conclusion that the vaccine was safe and had elicited a strong immune response was premature, since data analysis was still on-going.

The Committee further observes that the transgenic mice are used in the preclinical trials relating to COVID-19. This is because ordinary laboratory mice do not have the ACE2 receptor which is infected by SARS-CoV2 in humans and therefore have to be genetically modified to express the desired characteristics. The K18-hACE2 mice, is one of the transgenic mice¹⁰ that expresses the human ACE2.

Committee Recommendations

The Committee recommends that;

- i. Candidate vaccines should expeditiously be patented.***
- ii. Preclinical studies should be concluded so as to ascertain the efficacy of candidate vaccines.***

6.1.2.2.2 Progress of the Inactivated COVID-19 Vaccine development project:

The inactivated vaccine development technique involves killing disease- carrying virus using chemicals, heat and radiation and the resultant vaccine used to trigger an immune response¹¹.

¹⁰ Muñoz-Fontela, c., Dowling, W.E., Funnel, S.G.P et al. Animal Models for COVID-19. Nature 586, 509-515 (2010). <https://doi.org/10.1038/s41586-020-2787-6>

¹¹<https://www.who.int/news-room/feature-stories/detail/the-race-for-a-covid-19-vaccine-explained>



The Committee was informed that as of March 2022, samples for this vaccine had been collected, isolated and expanded to prepare bulk stocks. The stocks were then inactivated and were in pre-clinical trials. This was confirmed in the scientists' presentation that reported to have isolated a number of candidate vaccines.

Further still, the scientists' presentations reported that preclinical studies were on course, and were expected to continue up to the end of 2022.

It was further reported that efforts were underway to set up a Good Manufacturing Practice Facility to support human clinical trials for the vaccine and the WHO mission was expected in the country to provide technical support.

According to WHO, once a vaccine has reached pre- approval stage following clinical trials, it is assessed by the relevant regulatory body for compliance with quality, safety and efficacy criteria. Following regulatory approval, manufacturers can then submit a vaccine to WHO for prequalification; an assessment process that ensures quality, safety and efficacy which helps the UN and other international procurement organizations determine the programmatic suitability of a vaccine¹². Once a vaccine is authorized, manufacturing begins to scale up.

Observations:

The Committee observed that although a candidate vaccine was identified, there was no indication that it had been patented or that patenting was in the pipeline.

Further, results of the preclinical trials had not been finalised to ascertain its safety, nor was the appropriate dosage determined. It was therefore not advisable for a GMP facility to be set up before positive conclusive results were obtained from the preclinical stage, especially given the success rate of preclinical trials being only (7%) seven per cent.

The Committee further observed that the category of vaccine had not completed clinical trials and consequently not been approved by NDA. This implied that it

¹² WHO (2020), Manufacturing, safety and quality control of vaccines. Accessed at <https://www.who.int/news-room/feature-stories/detail/manufacturing-safety-and-quality-control>

K. P. Kumar
N. Parameswar
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had consequently not been submitted to WHO for prequalification. The construction of a GMP facility was thus premature since the candidate vaccine had not progressed to warrant production.

Committee Recommendations

The Committee recommends that;

- i. Preclinical and clinical studies for this vaccine should be expeditiously concluded.***
- ii. At the conclusion of the preclinical studies, approvals from NDA should be acquired and then pre-qualification exercise with WHO be fast tracked.***
- iii. Funding of the GMP facility should be stayed until Quality Assurance clearance is obtained from the NDA and WHO.***

6.1.2.2.3 Progress of Self- Amplifying RNA Vaccine

The Self- Amplifying RNA project was reported to have stalled. Several reasons were advanced for the stalling of this project. According to the Auditor General, the stalling was because UVRI was in partnership with a UK partner who was ahead at the clinical trial stage and could not give UVRI Intellectual Property (IP) ownership of the project's final products.

In a meeting with the Director of the UVRI, the delay in the project was attributed to the inability of the Principal Investigator to travel back to Uganda due to the COVID-19 travel restrictions in the United Kingdom (March to September 2020) where he was undertaking specialized education, and the delays in delivery of equipment.

It was however noted that funds for the self- amplifying RNA vaccine were approved in a letter dated 11th November 2020 subject to fulfillment of conditions therein. On 20th November 2020, a request to re- allocate these funds towards in-vitro studies was filed by the Director, UVRI and approved by Hon. Dr. Musenero as per letter of approval of reallocation of funds dated 27th January 2021 (Attached as appendix 6).



Observations:

The Committee observed that the nine day duration between which funds were released and a request for reallocation sought, was not only too short but also suspicious for one to have predicted stalling of the project. It is therefore the Committee's submission that this project stalled because of poor planning, inadequate due diligence coupled with lax vetting criteria.

The above observation was in line with the Auditor General's report on COVID-19¹³ funds who advised management to review its vetting process to ensure that thorough due diligence be always undertaken, before funds are allocated to projects to avoid stalling challenges, especially at the commencement stage.

Committee Recommendations

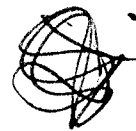
The Committee recommends that;

- i. ***Ministry of Health, UNHRO in collaboration with Uganda National Council for Science and Technology, MoSTI should develop a research plan to guide medical research in the country, according to the Uganda National Health Research Organisation Act.***
- ii. ***A transparent vetting process should be put in place to ensure that only projects with technical capabilities are funded. Further still, Project proposals should be vetted and selected in line with the national research agenda/plan.***

6.1.2.2.4 Progress of the Novel Adenovector COVID-19 Vaccine

This vaccine is based on the human adenovirus 5 (Ad5) as developed by Frank Graham in 1969 and is the same platform used for developing AstraZeneca and Johnson & Johnson vaccines. It involves modifying viral vectors which when

¹³Office of the Auditor General (January 2022); Special Audit Report On Expenditure Relating To Covid -19 For The Financial Year 2020/2021



introduced in the body generate immune response¹⁴ (see Appendix 7 for infogram)

The Minister indicated that a vaccine had been developed, entered the patenting pipeline and was undergoing preclinical animal studies in mice. The presentation of the scientists on this project indicated that they had collected samples from the wild and further gave a cloning strategy and progress (See Appendix 8)

Observations:

The committee observed that Uganda is predisposed by virtue of its geography to contain a plethora of pathogens, which favour identification of viruses that can be modified to foster vaccine development.

The Committee could not ascertain from the information given whether indeed a candidate vaccine had indeed been developed. Although, the Minister indicated that a vaccine had been identified, the scientist's presentation was non-committal on that issue and only showed the cloning strategy (how they plan to manipulate the viral vector) involved in the process. Further, there was mention of a patenting process, but this had also not been concluded or verified.

Committee Recommendations

The Committee recommends that;

- i. The Auditor General or an independent body should assess whether the candidate vaccine has indeed been isolated.***
- ii. If ascertained, further funding support be given to UVRI to enable the process progress to preclinical and clinical trials or otherwise the project is exited.***

6.1.2.3 Therapeutics (Projects 10 to 18)

Of the 9 projects on therapeutics, four were reported to have made considerable progress with no major technical challenges. Two of the projects were classified

¹⁴Glaudie, J (2021) How the puzzle of viral vector vaccines of viral vaccines was solved, leading to today's COVID-19 shots. <https://theconversation.com/how-the-puzzle-of-viral-vector-vaccines-was-solved-leading-to-todays-covid-19-shots-167341>



as having stalled and their funds reallocated due to technical hiccups. Another one stalled but funds were not reallocated, one was not allocated funds so it did not commence and one's status of progress was unclear because they did not present progress reports or make a presentation on their activities to the Committee.

Projects which progressed with no major technical challenges are:

- i. Identification and optimization of available drug molecules for clinical treatment of COVID-19 (Project 13)
- ii. The Production and Clinical Evaluation of Herbal Medicinal Drugs for effective Management of COVID-19 and other Diseases in Preparation for Future Epidemics in Uganda (Project 14). This project had progressed to preclinical stage.
- iii. Evaluation of the anti-SARS-COV-2 Activity of Tephrosialinear, Zanthoxylum chalybeum and Albie-iacoriaria and formulation of a herbal product for management of COVID-19 (Project 18). This project was reported to be at preclinical trial stage with formulation of herbal product completed.
- iv. Immune Therapy - Convalescent plasma (project 10)

The stalled projects whose funds were reallocated to other projects were:

- i. Stem Cell Research (project 11)
- ii. Therapeutic Intervention for COVID-19 using Antivirals, Immune modulators and antiplatelet agents (project 12). Funds received for these projects were reallocated to other projects as discussed under TOR 3.
- iii. Assessment of Vitamin D plasma levels in high risk groups (Diabetics, Hypertensives, Cancer COPD, HIV, Health workers) (Project 15).

Projects which were not allocated funds and therefore did not progress;

- i. Therapeutic Interventions with Colostrum, Immunoglobulins and Vitamin D (project 16)



Projects whose progress is unclear;

- i. Matooke Starch as a Pharmaceutical Excipient in Selected Medicinal Formulations for use in the treatment of COVID- 19 (Project 17)

Committee Recommendations

The committee recommends that;

- i. The projects that have progressed to pre-clinical trials should be expedited to clinical trials as they are a stop-gap measure in treatment of COVID-19 in the event of other strains/ waves.***
- ii. The stalled projects should be reassessed and if not technically sound, exited and funds returned to the consolidated fund.***

6.1.2.4 Central support for development of Vaccines, Diagnostics & Therapeutics (Projects 19 to 23)

This category had five projects, with three having progressed and two not progressing because funds had not been allocated to them.

Projects that progressed are as follows:

- i. The lab animal house (project 19), is still undergoing renovation and remodeling to suit the needs of the animals bred for research purposes. At the committee's visit, the premises were reported at about 60% complete.
- ii. Equipment for biomarker research facility (project 20)
- iii. The establishment of a high quality Biobank of samples from COVID-19 patients to facilitate research in diagnostics, treatment and vaccines (project 21).

Projects 22 and 23 did not receive funds and therefore did not progress.

Additionally equipment received for project 19 (lab animal house) was generic in nature to support storage and separation of genetic material and were not specific to extraction, introduction and manipulation of genetic material that is characteristic of transgenic mouse technology. For instance, the equipment procured included autoclaves, freezer, biosafety cabinets, centrifuges, icemaker, pipettes and accessories, test tubes, R- Cell culture centrifuge package.

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In consultation with a subject expert, such a facility, should have had microinjection equipment, such as: Inverted Microscope with OLY-150 video camera, TMC Micro-g Vibration Isolation Table, Transfer Man NK micromanipulators, Water Jacketed carbon dioxide Incubators with Hepa Filters; Surgical equipment such as stereo microscope with video colour monitor; MDS Matrix isofluraneanesthesia machine with a Matrix VIP 3000 precision vaporizer and specialised Cryopreservation equipment.

Observations:

The Committee observed that the lab animal house project had advanced although there was no specialized equipment to enable continuous isolation and manipulation of genes that is characteristic to transgenic animal technology. The equipment that was procured was generic in nature to support performance of routine laboratory analyses.

The committee further observed that the failure to locally clone, map and sequence DNA would imply that there would be a continuous need to procure transgenic mice which is not only expensive but also not reliable since there was no local capacity to breed them. The transgenic mouse was reportedly valued at UGX. 8 million per pair as opposed to the Swiss mice at UGX. 20,000 presently used at the Makerere University animal lab house.

Committee Recommendations

The committee recommends that;

- i. The completion of the animal lab project should be expedited as it is a support project for development of vaccines and therapeutics.***
- ii. The project should be adequately equipped to ensure that Uganda has the capacity to follow projects through up to completion.***

6.1.2.5 Unapproved projects

The In-vitro studies for herbal research project received funding although it was unapproved. Funds to this project were from the stalled RNA- Vaccine project. Despite the fact that this project was required to test cytotoxicity and antiviral properties of herbal formulations for project 18, there was no evidence that the project was vetted for feasibility and viability. The time lag between the release of



money for self-amplifying RNA project and application for reallocation to in-vitro studies was short for proper vetting to have been done. Further, this project was started after the inception of the 23 projects.

Observation:

The Committee observed that failure to subject the project on in-vitro studies to requisite vetting at inception demonstrated inadequacies in planning and coordination between research institutions.

Committee Recommendations

The committee recommends that;

- i. Transparent vetting processes should be put in place to ensure that only projects with technical capabilities are funded.***
- ii. Ministry of Health, UNHRO in collaboration with Uganda National Council for Science and Technology, MoSTI should develop a research plan to guide medical research in the country, according to the Uganda National Health Research Organisation Act.***
- iii. Project proposals should be vetted and selected in line with the national research agenda/plan.***
- iv. No funds should be allocated to projects that have not been vetted.***

6.1.2.6 Overall number of projects.

Overall, twenty-three (23) projects were approved to receive funding for the FY2020/21. Of these 15 are considered progressed, 5 stalled, 3 not progressed because they did not receive funding and one whose progress was unclear. It is noted that these projects were initiated for one year as emergency solutions to combat the COVID-19 pandemic and therefore outputs were time-bound. The extended period of research was not supported by a revision in project proposals, and the MoU.

Additional 13 projects were included for approval in the FY 2021/22 i.e. projects 25 to 37 in table 1. Notable is that project 23 is similar to project 24 so hasn't been recounted. The committee however was not able to obtain clarification on how the additional projects were vetted and selected.



Overall, information on progress of projects was scanty as the Committee did not receive progress reports, clearance certificates for completed phases and project proposals, which would be the basis for comparative analysis.

Observations:

The Committee observed that although this research was to initially generate emergency solutions and should have been completed within a limited timeframe, it is still ongoing. Failure to provide results within agreed timelines and budgets defeated the purpose for emergency interventions.

The committee noted that the current research funding framework under PRESIDE has no governance mechanism since the MOU expired. This implies that the on-going research is not governed by the requisite legal framework.

Without the requisite reporting documentation, it was an arduous task to establish the progress of the projects; nonetheless a quantitative analysis was done.

Committee Recommendations

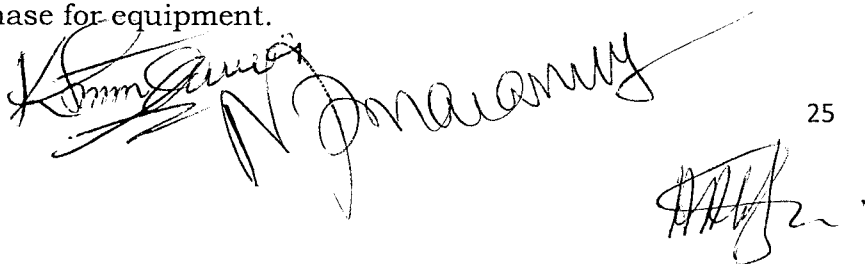
The committee recommends that;

- i. PRESIDE should task projects that were to be completed within FY 2020/21 to provide results in order to exit them.***
- ii. The responsible Government entities should ensure that an MoU is entered to govern ongoing research.***
- iii. PRESIDE/ Office of the President should ensure that all projects are routinely supervised and clearance certificates produced to track the achieved milestones to enable projects adhere to established budgets and timelines.***

6.1.2.7 COVID-19 Research under NRIP

A total of eight (8) projects were funded under the National Research and Innovation Programme (NRIP) under MoSTI.

The projects received a total of 2.74bn as operational funds, however no funds were availed for purchase for equipment.



It should however be noted that with the exception of Project 7 whose products were undergoing preclinical studies, the progress of the rest was unclear as is indicated in Table 2 below. It therefore wasn't reported on.

Table 2: : List of Projects Funded by MoSTI under NRIP in Relation to COVID-19 Research

S/N	PROJECT NAME	P. I / INSTITUTION	GRANT AMOUNT
1	Development of an open design low cost ventilator in response to COVID-19 and need in critical care system	Dr Roy William Mayega Resilient Africa Network	479,580,000
2	Development and validation of an antigen agglutination test for rapid screening of COVID-19 in low laboratory capacity and field settings	Dr Bernard Bagaya Makerere University Biomedical Research Centre Makerere University	160,588,000
3	Development, testing and deployment of an affordable, easy to use, and rapid point of care diagnostic test platform for COVID-19 suiting remote settings of sub-Saharan Africa	Dr Misaki Wayengera Makerere University Biomedical Research Centre Makerere University,	221,020,000
4	Expanding the manufacturing of the next generation tent to provide treatment and isolation units for COVID-19 patients	Dr. Nathan Tumuhameye Resilient Africa Network Upper Kololo Terrace	617,797,000
5	Increasing COVID-19 testing safety and optimizing cost effective use of Personal Protective Equipment (PPEs). A CAMTech Uganda proposal to sustainably respond and decrease the impact of COVID-19 on Uganda's economy	Dr Data Santorino CAMTech Uganda Ltd Mbarara	559,974,800
6	Production of bio-ethanol and related products from banana	Mr. Syrous Arinaitwe Young Innovators, Scientists and Technicians (YIST) Kabwohe, Sheema	315,000,000
7	Pre-clinical evaluation of 5 herbal drug products in Uganda for effects against coronavirus infection	Prof. Ogwang Patrick E. Mbarara University of Science and Technology	283,312,000
8	Advancing epidemiology of COVID-19 through Digital Health enhanced clinical information network surveillance system in Uganda	Prof Peter Olupot-Olupot Mbale Clinical Research Institute (MCRI) Mbale, Uganda	103,645,917
TOTAL			2,740,917,717

Source: Presentation by the PS, MoSTI



Committee Recommendations

The committee recommends that;

- i. MoSTI/ Office of the President should assess the progress of projects under NRIP and the status of the preclinical studies of five (5) herbal products should consequently be ascertained.*
- ii. Projects with the potential to progress should be budgeted for in the FY 2022/23.*
- iii. Funds should only be released after verification of clearance certificates. The verification process should be well planned to avoid undue delays.*

6.2 TOR 2: TO ESTABLISH THE AMOUNT OF FUNDS SO FAR RELEASED FOR THE RESEARCH, INNOVATION AND COVID-19 VACCINE DEVELOPMENT

6.2.1 Overall allocation and Releases to COVID-19 Related Research

The Ministry of Finance Planning and Economic Development reported that a total of UGX. 142.16bn was approved for COVID-19 related research in the financial years: FY 2019/20, FY2020/21 and FY 2021/22 as summarized in table 3. In total UGX. 67.43bn had been released representing a 47.4% performance.

Table 3: Summary of Total Project Funds for COVID-19 research for FY2019/20, FY2020/21 and FY2021/22

TOTAL PROJECT COST (UGX Billion)									
	2019/20		2020/21		2021/22		TOTAL		
	Approv ed	Releas ed	Approv ed	Releas ed	Approv ed	Releas ed	Approv ed	Releas ed	% Relea se
PRESIDE Secretariat	-	-	3.35	3.35	2.63	-	5.98	3.35	56.0 %
Procurement of Specialized equipment	5.30	5.30	15.79	15.79	-	-	21.09	21.09	100. %
Operational Costs	-	-	15.25	15.25	52.00	25.00	67.25	40.25	59.9 %
NRIP Projects under MoSTI	-	-	2.74	2.74	-	-	2.74	2.74	100.0 %
Vaccine manufacturing plant	-	-	-	-	50.40	-	50.40	-	0.0%
TOTAL FOR FY	-	5.30	37.13	37.13	105.03	25.00	147.46	67.43	45.7 %

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Source: PBO Computations and PSST MoFPED

In FY 2019/2020, UGX. 10bn was approved under the NRIP for science and technology research, however part of it, equivalent to UGX. 5.3bn was released to fund purchase of specialized equipment of projects under PRESIDE (Beneficiary projects/scientists indicated in table 4)

In FY 2020/21, UGX. 37.13bn was released as follows:

- i. UGX. 3.35bn released to State House (Vote 002) to meet the operational expenses of the PRESIDE secretariat
- ii. UGX. 15.79bn released towards the purchase of additional equipment to facilitate COVID-19 research.
- iii. UGX. 15.2bn released to cater for operational costs of the selected projects under PRESIDE
- iv. UGX. 2.74bn to cater for operational costs of the selected projects under MoSTI-NRIP
- v. Furthermore, In FY 2021/22, a total of UGX. 25bn was released as additional operational costs for the scientists. The UGX. 50.4bn approved by Parliament for the establishment of the COVID-19 Manufacturing Plant and UGX. 27bn for operational costs is yet to be released.

6.2.2 COVID-19 Research and Innovation Related Funds for the FY 2019/20

All the funds received in FY 2019/20 were towards purchase of equipment. Funds amounting to UGX. 5.3bn from the Innovation fund under MoSTI were used to purchase equipment related to COVID-19 research. These equipment were purchased by MoSTI and distributed to the following 5 projects as given in table 4 below. Details of equipment are given in Appendix 9.

Table 4: Equipment cost per project During the FY 2019/20

No	PROJECT	P.I / INSTITUTION	EQUIPMENT COST
1	The PCR and anti-body diagnostic kits	Prof. Joloba Moses, Makerere University Biomedical Research Centre	3,626,552,136
2	Inactivated Covid-19 Vaccine development	Dr. Serwanga Jennifer, Uganda Virus Research Institute	951,465,500
3	Novel Adenovector Covid-19 vaccine	Dr. Sheila Balinda, Uganda Virus Research Institute	245,077,303

4	COVID-19 Subunit Vaccine	Prof. Enock Matovu, College of Veterinary Medicine and Biosecurity Makerere University	315,207,116
5	Production and Clinical trial of therapeutic herbal drugs against COVID-19	Dr. Nambatya Grace Kyeyune, Natural Chemotherapeutics Research Institute	119,661,501
TOTAL			5,257,963,556

Source: MoSTI

The difference in the equipment cost released and the actual cost of UGX. 42,036,444 is attributed to freight and insurance costs.

The PCR and anti-body diagnostic kits received the bulk of these equipment at UGX. 3.63bn.

Observation:

The committee noted that the projects received these equipment in FY 2019/20, well before the project proposals were approved in 2020/21. All the five (5) projects were later approved for funding under PRESIDE and also received additional equipment in FY 2020/21. The Committee further noted that the purchase of equipment before approval of projects was irregular.

Committee Recommendation

The Committee recommends that going forward, work plans and budgets have to be presented for approvals before procurements are undertaken.

6.2.3 COVID- 19 Research and Innovation Related Funds for FY 2020/21

In FY 2020/21, a total of UGX. 37.13bn was availed by government towards COVID-19 related research and innovation activities. This money is disaggregated into operational expenses of the PRESIDE Secretariat (UGX. 3.35bn), Equipment purchases for COVID projects (UGX. 15.822.5bn), and operational funds (UGX. 15.245.5bn) for scientists carrying out research under PRESIDE and UGX. 2.74bn for MoSTI (NRIP).

6.2.3.1 Operational Expenses of the PRESIDE Secretariat

UGX. 3.35bn was released to State House for PRESIDE's operational expenses and was utilized as follows:

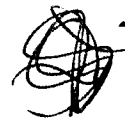


Table 5: Operational Expenses for PRESIDE Secretariat

No	Item	Amount (Ugx)
1	Administration (Rent, Tonner, Stationery, Utilities & Fuel)	191,890,000
2	Salaries	1,411,200,400
3	Security Guard allowances	7,200,000
4	Capital Purchases (Furniture, Computers, Printers, CCTV, Generator, Television, Water dispenser)	85,065,000
5	Payment and Facilitation for Students in Japan	86,403,375
6	Vehicles (O2)	441,650,000
7	Taxes on vehicles	51,000,000
8	Imprest	120,000,000
9	Field Activities	24,000,000
10	Hackathons facilitation	48,000,000
11	Development of the M&E framework	22,645,000
12	Project Evaluation	70,000,000
13	UBV 10N Clinical trials	245,588,805
14	Mulago Lung Institute	279,792,195
15	Mulago Biomedical Research Centre	174,619,000
16	Natural Chemotherapeutics Research Institute	100,000,000
		3,359,053,775

Source: State House

Observations:

The Committee noted the following;

- i. Operational funds included development items as per IFMS classification (577.7 million): The Committee noted that much as the UGX. 3.35bn was meant to cater for operational expenses (recurrent expenditure), most of these funds were used for development expenses. These items included purchase of vehicles, taxes on vehicles, capital purchases like furniture etc.
- ii. Double Funding of items already covered under selected projects (274.6 million): The PCR and anti-body diagnostic kits project (Mulago Biomedical Research Centre) and the Production and Clinical Evaluation of Herbal Medicine project (Natural Chemotherapeutics Research Institute) are among the projects fully funded under PRESIDE. However, they received further funding from the operational funds of PRESIDE.
- iii. Other Irregular payments (611.8 million): There were also other payments that were not classified as operational but were irregularly spent as such

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i.e. UBV 10N clinical trials, Mulago lung institute, Facilitation of students in Japan.

- iv. Salaries: Although the State House Comptroller indicated that UGX. 1.4bn was spent on salaries of the seven (7) staff of PRESIDE, the Committee could not verify this expenditure because it was unable to obtain the payroll despite several requests for the same from the State House Comptroller, the PRESIDE Chairperson and the PRESIDE Secretariat. Basing on the analysis of the consolidated salaries contained in the appointment letters received, the Committee established that salaries for PRESIDE staff totaled to UGX. 444 million and not the reported UGX. 1.4bn. The Committee therefore noted a discrepancy of UGX. 956 million and observed that given the discrepancy above;
- a. There could have been either more people on the payroll than disclosed;
 - b. Staff were paid more money than indicated on the appointment letters; or
 - c. Money could have been out rightly swindled.

Committee Recommendations

The Committee recommends that;

- i. State House should ensure that funds appropriated as operational funds should not be used for development expenses.***
- ii. The Auditor General should include the aspect of the operational funds to PRESIDE secretariat in the forensic audit scope.***
- iii. Monies spent as salaries should be commensurate with the terms of employment of staff to avoid wastage.***
- iv. Projects that are funded should only receive funds as appropriated by Parliament.***

6.2.4 The UGX. 31.03bn Supplementary Appropriation Funds

As earlier noted, the supplementary budget passed by Parliament in October 2020 for MoSTI had 2 components namely; UGX. 15.822.5bn for the purchase of specialized equipment for COVID-19 research and UGX. 15.245.5bn to cater for operational funds for the 23 selected projects.

The breakdown of the individual allocation and disbursement per project for both equipment and operational costs is as indicated in the table 6 below



Table 6: : Summary of Allocations per Project for Both Equipment and Operational Costs for FY 2020/21(UGX million)

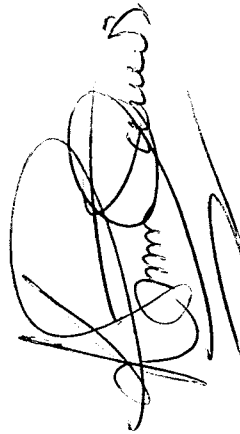
			Equipment Costs			Operational Costs			Total		
No	Project/Concept Title	Principal Investigator	Approved	Released	% Release	Approved	Released	% Release	Total	Disbursed	% Release
A. Concepts/Projects for Diagnostics											
1	The PCR and anti-body diagnostic kits	<u>Prof. Joloba Moses</u> , MUK-CHS	0	692.81	-	1,576.20	2426.24	154%	1,576.20	3,119.05	198%
2	PCR based Diagnostic assays	<u>Dr. Cissy Kiyo</u> , JCRC	780.98	1341.05	172%	617.59	308.8	50%	1,398.57	1,649.85	118%
3	Saliva Diagnostic Kit	<u>Prof. Charles Ibingira</u> , MUK-CHS	712.03	935.03	131%	319.91	319.91	100%	1,031.94	1,254.94	122%
4	NANO- Adjuvant Therapeutics, Vaccine adjuvants & materials testing	<u>Prof. Ibingira C</u> , MUK-CHS	2,590.00	2,450.50	95%	222.8	222.8	100%	2,812.80	2,673.30	95%
5	Development of Antibody ELISA for COVID- 19 surveillance	<u>Prof. Enock Matovu</u> , MUK-COVAB	161.2	157.04	97%	462.6	201.3	44%	623.8	358.34	57%
	Sub-total for Diagnostics		4,244.2	5,576.4	131%	3,199.1	3,479.1	109%	7,443.3	9,055.5	122%
B. Concepts/Projects for Vaccine Development											
6	COVID-19 Subunit Vaccine	<u>Prof. Enock Matovu</u> , MUK-COVAB	561.07	968.65	173%	867.2	754.3	87%	1,428.27	1,722.95	121%
7	Inactivated Covid-19 Vaccine development	<u>Dr. Jennifer Serwanga</u> , UVRI	974.45	1,452.02	149%	2,152.15	1,805.36	84%	3,126.60	3,257.38	104%

No	Project/Concept Title	Principal Investigator	Equipment Costs			Operational Costs			Total		
			Approved	Released	% Release	Approved	Released	% Release	Total	Disbursed	% Release
8	Self-Amplifying RNA	<u>Prof Pontiano Kaleebu</u> UVRI	617.1	1,198.93	194%	791.21	544.51	69%	1,408.31	1,743.44	124%
9	Novel Adenovector COVID-19 Vaccine	<u>Dr Balinda Shiela</u> , UVRI	832.33	263.08	32%	986.06	827.03	84%	1,818.38	1,090.11	60%
	Sub-total for Vaccines		2,985.0	3,882.7	130%	4,796.6	3,931.2	82%	7,781.6	7,813.9	100%
C. Concepts/Projects for Therapeutics/Treatments											
10	Immune Therapy - Convalescent plasma	<u>Dr Cissy Kinyo</u> , JCRC	1,196.64	633.02	53%	746.45	746.45	100%	1,943.09	1,379.47	71%
11	Stem Cell Research	<u>Dr Ssali, Dr Kinyo</u> , JCRC	413	0	0%	442.97	171.49	39%	855.98	171.49	20%
12	Therapeutic Intervention for COVID-19 using Antivirals, Immune modulators and antiplatelet agents	<u>Dr Cissy Kinyo</u> , JCRC	-	-	-	500	200	-	500	200	40%
13	Identification and optimization of available drug molecules for clinical treatment of COVID-19	<u>Dr Jackson Mukonzo</u> MUK-CHS	1,328.25	956.30	72%	504.13	202.7	40%	1,832.38	1,159.00	63%
14	The Production and Clinical Evaluation of Herbal Medicinal Drugs for effective Management of COVID-19 and other Diseases in Preparation for Future Epidemics in Uganda	<u>Dr Nambabya Kyeyune</u> , NCRI	780	861.91	111%	1,260.00	1260	100%	2,040.00	2,121.91	104%
15	Assessment of Vit D plasma levels in high risk groups (Diabetics, Hypertensives, Cancer COPD, HIV, Health workers)	<u>Dr. Noah Kiwanuka</u> , WINDSOR	556	0	0%	360	360	100%	916	360	39%

No	Project/Concept Title	Principal Investigator	Equipment Costs			Operational Costs			Total		
			Approved	Released	% Release	Approved	Released	% Release	Total	Disbursed	% Release
16	Therapeutic Interventions with Colostrum, Immunoglobulins and Vit D	<u>Prof. Lubega John</u> WINDSOR	-	-	-	190	0	0%	190	0	0%
17	Matooke Starch as a Pharmaceutical Excipient in Selected Medicinal Formulations for use in the treatment of Covid- 19	<u>Rev. Florence Isabirye</u> <u>Muranga</u> BIRDC	377.2	460.29	122%	527.8	343.9	65%	905	804.19	89%
18	Evaluation of the anti-SARS-COV-2 Activity of Tephrosia linearis, Zanthoxylum chalybeum and Albicoraria and formulation of a herbal product for management of COVID-19	<u>Dr. Samuel Baker</u> Busitema University	130	340.63	262%	320	280	88%	450	620.63	138%
Sub-total Therapeutics			4,781.1	3,252.2	68%	4,851.4	3,564.5	73%	9,632.5	6,816.7	71%
D. Material/Central support for development of Vaccines, Diagnostics & Therapeutics											
19	Lab Animal house	<u>Prof. Kabasa</u> MUK-COVAB	1,066.01	1,202.40	113%	1,347.07	1,401.01	104%	2,413.07	2,603.41	108%
20	Equipment for biomarker research facility	<u>Dr. Kato C.</u> <u>Drago</u> MUK-COVAB	1,502.05	1,326.97	88%	160.15	160.15	100%	1,662.20	1,487.12	89%
21	Establishment of a high-quality biobank of samples from COVID-19 patients to facilitate research in diagnostics, treatment and vaccines	<u>Prof. Moses Joloba</u> MUK-CHS	182.5	0	0%	891.14	650.07	73%	1,073.64	650.07	61%
22	Support towards operational costs of the vaccine/test kits manufacturing facility	<u>Prof. Vinand</u> <u>Nantulva</u> ZYGEN Biotech	561.26	581.91	104%	-	0	-	561.26	581.91	104%

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No	Project/Concept Title	Principal Investigator	Equipment Costs			Operational Costs			Total		
			Approved	Released	% Release	Approved	Released	% Release	Total	Disbursed	% Release
23	Equipment for testing facemasks and other personal protective ware	Dr. Ben Manyindo UNBS	465.01	0	0%	-	0	-	465.01	0	0%
Sub-total for material support			3,776.83	3,111.3	82%	2,398.36	2,211.23	92%	6,175.18	5,322.51	86%
Grand Total			15,787.1	15,822.5	100%	15,245.4	13,186.0	86%	31,032.5	29,008.6	93%








According to MoSTI, UGX. 29.008bn equivalent to 93% of the approved funds were released to the respective projects. The Operational funds releases stood at 86% of the approved budget while all the equipment funds were released. The performance of the operational funds is contrary to the Permanent Secretary/Secretary to Treasury (PSST's) submission, where all the funds are said to have been released. This creates a shortfall of UGX. 2.024bn unaccounted for.

To further disaggregate the data, the Committee noted that diagnostics sub-category received the highest funds, followed by vaccine development, therapeutics and lastly central support, as below:

Category	Equipment and Operational Funds(UGX million)		
	Total	Disbursed	% Release
Diagnostics	7,443.3	9,055.5	122%
Vaccines Development	7,781.6	7,813.9	100%
Therapeutics/Treatments	9,632.5	6,816.7	71%
Central support	6,175.18	5,322.51	86%

Observations:

The Committee noted that;

- i. 10 projects received more funds than they had budgeted for, as approved by Parliament. For instance, project 1 (The PCR and anti-body diagnostic kits) received 198% of its budget. The approved project budget was UGX. 1.58bn as operational funds only. However, it received UGX. 3.12bn including UGX 693 million in equipment that had not been budgeted for. The over-performance of some projects in terms of received resources implies that some projects' budget were suppressed in favour of other projects, since there were no additional funds provided by government.
- ii. Five (5) projects received less than 50% of the budget, including two (2) that received no funds at all, namely: Equipment for testing facemasks



- and other personal protective ware and Therapeutic Interventions with Colostrum, Immunoglobulins and Vitamin D
- iii. One project received money without approval of Parliament despite these funds being supplementary i.e. the Auditor General reports that UGX. 544.51 million was moved from the account of Self-Amplifying RNA (Project 8) to a project named In-vitro studies for herbal research, which was not among the projects approved by Parliament.
 - iv. Further, there were virements across projects without requisite approvals. For example, UGX. 371.49 million was moved from project 11 (Stem Cell Research) and 12 (Therapeutic Intervention for COVID-19 using Antivirals, Immune modulators and antiplatelet agents) to project 2 (PCR based Diagnostic assays). These virements are contrary to section 22 of the Public Finance Management Act 2015 as amended. The Committee further observes that there was suppression of other projects that had been approved by Parliament.

Committee Recommendations

The Committee recommends that;

- i. The Auditor General should pick interest in the shortfall of UGX. 2.024bn unaccounted for.***
- ii. Management should strengthen internal controls to monitor and follow up on utilization and accountability of funds disbursed as per section 22 of the PFMA 2015 as amended.***

6.2.5 COVID-19 Research and Innovation Related Funds for the FY 2021/22

During the consideration of the Ministerial Policy Statement for FY 2021/22, the MoSTI and PRESIDE presented a list of 17 projects that would benefit from the UGX. 25bn budget for that financial year. This budget was later appropriated by Parliament. There was an additional UGX. 27bn approved under Supplementary Schedule 1 of 2021/22, making a total of UGX. 52bn. The initial UGX. 25bn was released and disbursed to the projects according to table 7 below.

Table 7: List of Projects that received funds for FY 2021/22 (UGX Million)

No	Project	Principal Investigator	Approved	Implemented	Released	% released
1	Saliva Diagnostic Kit	Prof. Ibgingira Charles	1,030.00	1,030.00	800.00	77.7%
2	NANO-Adjuvant Therapeutics , Vaccine adjuvants & materials testing	Prof. JB. Kirabira	1,485.00	1,485.00	1,000.00	67.3%
3	Development of Antibody ELISA for COVID-19 surveillance	Assoc. Prof. Matovu Enock	845.00	845.00	700.00	82.8%
4	Sub-unit vaccine	Assoc. Prof Matovu Enock	975.00	975.00	800.00	82.1%
5	Novel Adeno-vector COVID-19 Vaccine	Dr. Balinda Sheila	2,500.00	2,500.00	2,000.00	80.0%
6	Immune Therapy - Convalescent plasma	Dr Cissy Kityo	600	-	-	
7	Matooke Starch as a pharmaceutical excipient in selected medicinal formulation for treatment of COVID	Prof. Muranga Florence	797.44	797.44	700.00	87.8%
8	Lab Animal House	Prof. Kabasa John	1,440.00	1,440.00	1,000.00	69.4%
9	Equipment for biomarker research facility	Dr. Kato C. Drago	1,450.00	2,950.00	2,800.00	94.9%
10	Establishment of a high- quality bio bank of samples from COVID-19 patients to facilitate research in diagnostics, treatment and vaccines	Prof. Joloba Moses	891.00	2,354.85	1,500.00	63.7%
11	Ivermectin & Low-dose Aspirin study (IVCOM)	Dr. Mukonzo Jackson	1,000.00	1,000.00	-	-
12	Bee products and Warbugia Ugandensis	Dr. Nambatya Grace	2,000.00	2,000.00	1,000.00	50.0%
13	Vitamin-D study	Prof. John Lubega & Prof. Noah Kiwanuka	1,600.00	1,600.00	1,000.00	62.5%
14	Herbal Products for Management of COVID-19		2,375	-	-	
15	Pathogen Epidemiological studies (Antimicrobial Resistance Modelling and PCR development)	Assoc Prof. Joel Bazira	2,620.77	2,620.77	-	-
16	Nutri-meal project from finger millet	Dr. Barbara Kirunda Brenda Ayugi	2,390.23	2,390.23	-	-
17	Development of customized ICT Pathogen Economy	Emmanuel Tabula	1,000.00	1,000.00	-	-
18	PCR and Antibody diagnostic kits	Prof Moses Joloba		4,576.20	2,620.00	57.3%



No	Project	Principal Investigator	Approved	Implemented	Released	% released
19	PCR-based diagnostic assays	Dr. Cissy Kityo		2,967.66	2,000.00	67.4%
20	Inactivated COVID-19 vaccine development	Dr. Jennifer Senrwanga		7,003.00	3,880.00	55.4%
21	Evaluation of the anti- SARS-COV-2 Activity of Tephrosia linearis, Zanthoxylum chalybeum and Albizia coriaria and formulation of a herbal product for management of COVID-19	Dr.Obakiro Samuel Baker		2,375.41	1,800.00	75.8%
22	In-vitro studies for Herbal research	Dr Jackie Kyosimire		1,463.70	800.00	54.7%
23	Equipment for testing PPEs like masks	Dr David Ebiru		731.41	-	-
24	Investigation of local materials for development of medicinal masks	Den is Dokoria		800.00	-	-
25	Development of regulatory supplies e.g. swabs, gloves, falcon tubes etc....	Prof. JB Kirabira		500.00	-	-
26	Bio-base Polyphenol project (Liquid smoke)	Solomon Ongoro		250.00	-	-
27	COVID-19 Natural Therapeutics trials (CONAT)	Dr. Bruce Kirenga		3,160.64	-	-
	PRESIDE Secretariat			2,627.68	-	-
	Total Funds		25,000	52,044	25,000	48.0%

Observations:

The Committee noted the following observations:

- A total of (seventeen) 17 projects (Project 1-17) was presented before Parliament with a total budget of UGX. 25bn, for implementation in FY 2021/22. When additional funds of UGX. 27bn became available through a supplementary budget, the total number of projects raised to 27, where 10 new projects (Projects 18-27) were introduced and two of the already approved projects i.e. (projects 6 (Immune Therapy - Convalescent plasma). and 14 (Herbal Products for Management of COVID-19) were dropped. The Committee found that the two projects should have been given funds for implementation whether there was a supplementary or not

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since their budgets had already been approved by Parliament in the Ministerial Policy Statement. No reasons were given for their exclusion.

- ii. Projects 9 and 10 had their budgets increased by 103% and 164% in the same financial year from what was approved by parliament. The committee was not privy to the revised proposals that necessitated this increment.
- iii. Sixteen (16) of the projects funded in 2020/21 were again on the list of projects funded in 2021/22. The remaining seven (7) projects from FY 2020/21 were not receiving additional funding in FY 2021/22. These are projects in table 7 above.
- iv. COVID-19 research funded under NRIP did not receive funding in the FY 2021/22. The Committee noted that there was no indication as to whether these projects had reached their conclusion since no reports on final outcomes were received. In the event that this research is still on-going, there is a danger of the country losing out on the initially accomplished milestones, since the projects now hang in balance.
- v. The biggest overall beneficiaries of the COVID-19 research funding measured by the total amount of funds received this far for the past three (3) years are as follows:

Table 8: Covid-19 funds received for the various projects for the last three years (Million)

No	Project/Concept Title	2019/20	2020/21	2021/22	Total
1	The PCR and anti-body diagnostic kits	3,626.55	3,293.67	2,620	9,540.22
2	Inactivated Covid-19 Vaccine development	951.47	3,257.38	3,880	8,088.85
3	Equipment for biomarker research facility		1,487.12	2,800	4,287.12
4	PCR based Diagnostic assays		2,021.34	2,000	4,021.34
5	NANO- Adjuvant Therapeutics, Vaccine adjuvants & materials testing		2,673.30	1,000	3,673.30
6	Lab Animal house		2,603.41	1,000	3,603.41
7	Novel Adenovector COVID- 19 Vaccine	245.08	1,090.11	2,000	3,335.19
8	COVID-19 Subunit Vaccine	315.21	1,722.95	800	2,838.16
9	Evaluation of the anti-SARS-COV-2 Activity of Tephrosia linearis, Zanthoxylum chalybeum and Albic-ia coriaria and formulation of a herbal product for management of COVID-19		620.63	1,800	2,420.63

Source: PBO compilation

Committee Recommendations



The Committee recommends that;

- i. Periodical progress of projects should be tracked and reported on in order to inform budgeting, release of funds and exit of projects.***
- ii. Research proposals and funding should not be revised without due process as this goes against the principles of good financial management.***
- iii. Project proposals should clearly indicate financing and timeline details.***
- iv. Clear guidelines should be put in place to guide exit of projects.***
- v. Letters of no objection and clearance certificates should be provided before further funding for each phase.***

6.3 TOR 3: TO ESTABLISH HOW EFFECTIVELY SUCH FUNDS HAVE BEEN UTILISED

For this TOR, the Committee sought to interrogate if funds were appropriately allocated, whether sufficient accountabilities were provided, any reallocations, approvals, accountability for equipment and operational funds and the monitoring and evaluation mechanism.

6.3.1 Delays in Disbursement of Operational Funds

The supplementary expenditure schedule 1, 2 and addendum to schedule 2 for the FY 2020/21 budget was passed by Parliament in October 2020 and contained allocation for an emergency intervention in COVID-19 research and Innovation. It should however be noted that several of the projects received their first release of operational funds in December 2020, with six of the selected projects receiving the first release of operational funds on 2nd December 2020. This was attributed to the delay in meeting requirements before disbursement of funds to projects, including; registration on the IFMS as suppliers, providing names of signatories for accounts, and signing of grantees agreements.

The delays were further exacerbated by the abolition of the Ministry of Science, Technology and innovation and transfer to the Office of President, which resulted into the failure to release funding for the first six months of the FY 2021/2022.

Observation:

The Committee observed that delays in the release of funds affected the timely implementation of the intended activities under the various projects.

Committee Recommendation

The Committee recommends that release of funds for emergency projects should be timely and where possible front-loaded so as to enable quick acquisition of research results/ products.

6.3.2 Scientists participating in Multiple Projects

The Committee established that some scientists were committed to multiple projects, with some participating in as many as 5 projects while others are principal investigators of more than one project. A summary is given in the table below.

Table 9: List of Scientists with Multiple Projects

Scientist	Total number of projects participated in
Prof. Kabasa D	5
Dr. Cissy Kityo	4
Dr Kyeyune	4
Prof Matovu	4
Dr. Eddie Wampande	4
Prof. Joloba Moses	3
Dr. Bagaya Bernard	3
Dr Nankya	3
Prof P. Kaleebu	3

Source: Committee Computation

The Committee was informed that in some cases the Head of the Research Institution was listed as the Principal Investigator for overall supervision of the project.

Observations:

The Committee observed that;

- i. Since this research was to obtain emergency solutions, it was not necessary to overload the scientists with several projects.



- ii. The scientists were too ambitious taking on several projects which scattered human and financial resources.
- iii. The vetting mechanism was not transparent and could have led to dissatisfaction of the unsuccessful scientists yet others had multiple projects.

Committee Recommendations

The Committee recommends that;

- i. Scientists should not participate in more than one study to enable efficiency.***
- ii. In accordance with the Uganda National Health Research Organisation Act, in collaboration with Uganda National Council for Science and Technology, MoSTI, Ministry of Health, and UNHRO should develop a research plan to guide medical research in the country.***
- iii. Project proposals should be vetted and selected in line with the national research agenda/plan.***

6.3.3 Lack of Accountabilities by PRESIDE

The MOU was categorical that PRESIDE would aggregate accountabilities from the projects and provide overall accountability to MoSTI which was the legally accountable entity for the funds (A copy of the MOU between PRESIDE and MoSTI is attached as Appendix 10)

In this case, PRESIDE did not account to the Ministry despite several reminders thereto, instead, the projects directly accounted to MoSTI, although it was not done in time.

Hon. Monica Musenero Masanza, in her submission to the Committee stated that PRESIDE never handled any money and therefore was not responsible for accountability.

The Committees opinion however is that, the MOU between MoSTI and PRESIDE in section 5.7 guided that PRESIDE was supposed to issue a clearance certificate

for each phase of the project indicating approval of disbursement before release of subsequent funds, this was not done.

Observations:

- i. The Committee observed that PRESIDE did not fulfill its obligation of facilitating proper accountability for funding provided for research projects as stipulated in its role under section 5.7 of the MOU. Lack of guidelines on reporting resulted into non-uniform and late reporting on projects.
- ii. The Committee also observed that there was flouting of provisions in respect to release of funds.

Committee Recommendations

The Committee recommends that;

- i. ***Accountabilities of projects should be given in the prescribed format containing such details so as facilitate decision-making.***
- ii. ***Funds should not be provided to projects without verification of clearance certificates.***

6.3.4 Accountability for Project Operational Funds

The Auditor General's report on COVID- 19 funds for the FY 2020/21 noted that Article X (d) of the Research Grant Agreement between the Projects, PRESIDE, and the MoSTI required the grant recipient to maintain acceptable financial management systems during the grant term. Such systems were to be provided among other accounting records supported by source documentation. Further, in the interaction with the Auditor General, the Committee was informed that the scientists lacked formats for reporting.

On review of specific projects, the Auditor General noted that funds amounting to UGX. 491 million were not properly accounted for and source documents were missing. This resulted from weak internal controls in following up advances and accountability. As a result, the Auditor General could not confirm whether these funds were put to their intended use.



Further it was noted that there were no harmonized allowance rates for the researchers. This created discrepancies and inadequacies in compensation across projects as observed by the Auditor General.

Furthermore, the PS/ST indicated to the Committee that all funds for FY 2020/21(both operational and equipment) had been released. However, the Auditor general reports that UGX.28.97bn out of UGX. 31.03bn had been released. No explanation was provided on the whereabouts of the UGX.2.06 bn.

Observation:

The Committee observed that poor financial management resulted into up to at least UGX 2.06bn not being accounted for under operational funds. A lack of guidelines on reporting resulted into discrepancies in reporting and allowances paid to scientists. Further, failure to harmonize allowance rates also led to wastage.

Committee Recommendations

The Committee recommends that;

- i. MoSTI/ Office of the President should put in place guidelines for reporting and allowances for scientists.***
- ii. The accounting officers should be held liable for unaccounted for funds.***
- iii. Additionally, salaries of scientists should be competitive to prevent brain drain from the country.***

6.3.5 Unauthorized reallocation of Project funds/Diversions

Grant agreements were signed between the Ministry of Science and Technology, PRESIDE, and the various projects' host institutions, stating the terms and conditions regarding the grants as well as grant amounts. The MOU between the Ministry and PRESIDE indicated that the Ministry was in charge of accounting for the funds.

It was however noted that several re-allocations (table 9) were made from one project to another without approval from the Ministry pointing to a lack of robust monitoring mechanism and poor financial management.

Table 10: Showing Un-authorized re-allocation of funds (UGX million)

No	Project/Concept Title	Budgeted	Received	Comments
1.	Self-Amplifying RNA	791	344	Funds re-allocated to in-vitro studies under UVRI
2.	Stem Cell Research	443	171	Funds were re-allocated to PCR Diagnostic Assay.
3.	Therapeutic Intervention for COVID-19 using Antivirals, Immune modulators and antiplatelet agents	500	200	

Source: Auditor General's report, January 2021

The heads of research institutions put their requests for reallocation to PRESIDE which without consultations with MoSTI, the overall accounting entity authorized the reallocations. This was not only contrary to the MOU but also contravenes Section 22 of the Public Finance Management Act, (PFMA) 2015 which mandates the Minister to vary within a vote on request of the accounting officer provided it does not exceed 10% of the money reallocated for the item from which it is being moved. This was not the case. The Chairperson of PRESIDE authorized virement of resources across projects without following the due process. Such reallocations should have been vetted by the Accounting Officer (Permanent Secretary of MoSTI).

MoSTI also flouted provisions of the MoU by releasing funds to PRESIDE without following the laid procedure therein.

The officials from MoSTI explained that under the tripartite grant agreements (Article V-section (a), PRESIDE was to approve and recommend project adjustments and inform MoSTI accordingly. For example, the three projects cited in the reallocations were not progressing as envisaged, therefore, money was re-allocated to In-vitro tests (from self- amplifying RNA) and PCR diagnostic assay projects (from stem cell research and therapeutic intervention for COVID- 19 using antiviral modulators and antiplatelet) under the same institution, JCRC. The PCR project was showing progress and was supposed to receive additional funds in the subsequent disbursements. Even when this appears to be positive, it is irregular.



Observations:

The Committee observed that;

- i. The Chairperson PRESIDE, Dr. Monica Musenero acted irregularly by authorizing the virement which was solely the responsibility of the Ministry of Finance, Planning and Economic Development.
- ii. The amount that was varied exceeded the amounts provided for by PFMA which holds that the amount allocated for an item should not exceed 10%
- iii. The Committee further observed that lack of proper authorization defeats the Ministry's oversight and accounting role over the projects.
- iv. Projects that stalled continuously received money to be channeled to unauthorized projects, which was irregular.

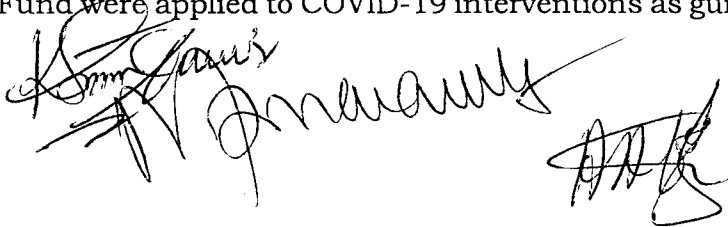
Committee Recommendations

The Committee recommends that;

- i. *All virements between projects should be made in accordance to the Public Finance Management Act.*
- ii. *PRESIDE should not reallocate funds without authorization from MoSTI.*
- iii. *The Minister responsible for STI should be relieved of her role as Chairperson PRESIDE to avoid conflict of interest and to align this funding to principles of good governance.*
- iv. *PRESIDE's (or responsible entity) Accounting Officer should institute a robust monitoring system to monitor the implementation and utilization of funds to avoid such re-allocations without the Ministry's involvement.*
- v. *In addition, management should adopt a transparent vetting process to ensure only projects with technical capacities are funded.*

6.3.6 Procured Equipment for Research Projects

As noted earlier MoSTI was in charge of purchase of equipment for which UGX. 5.3bn was budgeted for and released in the FY 2019/20 and UGX. 15.787bn in the FY 2020/21. The funds in the FY 2019/20 that were part of the National Research and Innovation Fund were applied to COVID-19 interventions as guided





by H.E the President and subsequent communication by PS/ST – MoFPED (See letters as attached in Appendix 11)

Tables 10 and 11 are lists of projects, the beneficiaries and the equipment cost during FY 2019/20 and FY 2020/21 respectively. Tables 12, 13 and 14 under Appendix 8 are lists of equipment received per project. The Committee established and noted the following:

- a) In some cases, there were no formal requests for equipment made by the projects. This created wastage as equipment ended up being redundant.
- b) Some equipment were bought in FY 2019/20 before approval of project proposals and ascertainment of the equipment needs. The Committee observed that this was irregular as equipment needs were supposed to be aligned with project proposals.
- c) The Committee during its visits, noted that some of the procured equipment had been delivered and in use; some had been delivered but were not yet installed, therefore not in use. Some other equipment had been installed but awaiting training of personnel to put it into use as it was highly technical; for example at UVRI, a summary of this status is attached under appendix 16.
- d) Some of the host institutions did not have enough facilities to house the new equipment, hence affecting their installation. Others were still mobilizing resources, freeing up offices, renovating or expanding or were actually trying to put up facilities to be able to comfortably accommodate the equipment. For instance at UVRI a documentation centre was being cleared to create room for laboratories. The Committee also learnt that the equipment for the rabbit house at UVRI were largely not yet installed due to space limitations. This created congestion and gave rise to poor housekeeping practices within the laboratories. The Committee observes that the MoSTI, PRESIDE and the host communities failed to plan for the siting of equipment, as to where they would be housed and installed. This created redundancy, wastage and poor housekeeping practices within the laboratories.
- e) Equipment were bought per project without due consideration of what equipment was already available at the host institutions. For instance, one



of the laboratories had several thermo recyclers, laboratory freezers, micro plate stackers etc. The Committee observed that this contributed to wastage resources.

- f) The equipment had no streamlined regulation in terms of ownership, service, maintenance and management. The tripartite agreements did not have clauses relating to the management and ownership of the equipment. It is not clear who is responsible for maintenance of these equipment and there is no budget component for it. Consequently, this created laxity in stewardship by the host institutions.
- g) At the time of the Committee's visit, some of the equipment had not been engraved. This created laxity in record keeping and stewardship by the host institutions.
- h) Centrality in use and ownership of equipment was also not provided for in the MOUs. The Grant Research Agreement under article XXIX required that the equipment procured with Grant's resources shall be housed, exclusively used, and in sole control of the Principal Investigator and only non-specialized equipment would revert to MoSTI upon completion of the project. However MoSTI has no laboratories. The Committee observed that monopolies in use of equipment by host institutions disadvantaged scientists that would like to access such equipment.
- i) The projects and MoSTI did not maintain asset registers as indicated in the Special Report on COVID- 19 from Auditor General for FY2020/21 and verified by the Committee during its visits to the projects. The Committee observed that lack of proper asset registers at the Ministry and Projects exposes the project's assets to a risk of loss and mismanagement.
- j) Some equipment were delivered later after results for the process for which they were required had already yielded results, e.g. by the time the Committee visited Busitema University on 2nd December 2021, the project had advanced up to 80% and was awaiting clinical tests to be carried out after the in-vitro studies at UVRI. The Committee observes that such scenarios indicate a lack of due diligence and wastage since the procured equipment may not have been necessary for the particular research.



- k) Some of the projects requested for commonly available equipment in analytical laboratories that would ideally not have been part of emergency purchases, for example: pH meters, analytical balances, pipettes etc. The Committee notes that this was wasteful and also points to lack of sufficient due diligence at inception of the projects, as this funding was for an emergency.
- l) The committee notes that the OAG is carrying out a forensic audit that will further build on its findings and it is optimistic that issues of pricing of equipment will be adequately dealt with therein.

Nonetheless, the committee noted that although some equipment had been requisitioned for by specific projects it will be helpful for ongoing and future research.

Committee Recommendations

The Committee recommends that;

- i. All future equipment procurements should be preceded by a needs assessment, verified research proposals clearly indicating equipment needs and verification of laboratory space for their installation.***
- ii. Procurement and delivery of equipment should be planned to avoid delays in installation. Also installation and training of personnel to use the equipment should be well planned.***
- iii. Host institutions should be given funds for maintenance of equipment.***
- iv. All equipment should be engraved and asset registers maintained at both host institutions and MoSTI.***
- v. Guidelines should be put in place for sharing equipment across institutions and reverting of equipment to MoSTI.***
- vi. Emergency purchases should take into account already available equipment and only purchase necessary, supplementary and specialized equipment.***



6.3.7 Consumables

As part of their operational funds, projects purchased reagents and other consumables. However, they faulted Public Procurement and Disposal of Assets laws by directly purchasing the reagents and consumables from suppliers. This edged out competition and compromised value for money. Purchased reagents, consumables, and other supplies amounted to UGX. 1.489bn.

Whereas MoSTI sought clearance from PPDA to directly purchase equipment, projects did not seek approval to directly procure consumables in line with the PPDA Act.

The Committee also noted that some projects had procured consumables before receipt and installation of key equipment. There was a likely danger of the consumables expiring before equipment was installed.

Observations

- i. The Committee observed that the PPDA Act and regulations were not adhered to.
- ii. The Committee further observed that there was no competitive bidding and therefore the Government was unable to carry out comparative analysis on pricing.
- iii. It is the committee's view that there was poor planning in procurements and no due diligence exercised in procurement of consumables which posed a danger of wastage.

Committee Recommendations

The Committee recommends that;

- i. **Provisions of the PPDA Act should always be adhered to while procuring items necessary for projects.**
- ii. **Procurements should be planned to avoid wastage due to delays.**
- iii. **For future emergency procurements, the opportunity for waivers for certain requirements in the procurement cycle should be fully utilized.**

- iv. New MoSTI and PRESIDE should prevail over the host institutions to ensure participating institutions follow the procurement laws, regulations, procedures and guidelines.**

6.3.8 Monitoring and Evaluation

The Committee noted that one of the roles of PRESIDE was to execute grant agreements and ensure that each project team delivers on its commitment to the project i.e. monitor and evaluate. MoSTI was to receive aggregated project reports for each phase of all projects in line with released funds and provide strategic monitoring, supervision and evaluation for the projects. According to the MoU between PRESIDE AND MoSTI and the tripartite agreements, release of funds for each phase of the project was tagged to achievement of milestones as per project implementation schedule and a certificate was supposed to be issued as a condition for subsequent disbursement. However, MoSTI released funds without receiving accountability for completed milestones.

The Committee was informed that although PRESIDE had been allocated funds for monitoring the projects, certificates for completed milestones were not issued. MoSTI on the other hand did not receive any overhead funds to monitor COVID projects under PRESIDE. MoSTI only undertook passive monitoring and supervision of the projects. The Ministry had made plans to undertake a comprehensive M&E of the PRESIDE projects and provided funds in the budget for the FY 2021/22, however, the Ministry was abolished before and all funds frozen.

When inquiries were made by the Committee regarding the irregularities in payments, both the former Minister of STI and the former PS conceded that the Chairperson of PRESIDE (Dr. Musenero) was too powerful to be supervised by anybody. Currently projects under PRESIDE are a work in progress.

Committee Recommendations

The Committee recommends that;

- i. The role of PRESIDE Chairperson, Minister responsible for STI should be separated.**



- ii. *The National Research and Innovation Programme Framework should be evoked to guide the governance of funding under the STI sector.*
- iii. *Completion certificates should be issued at completion of every phase of the research and should be the basis for release of additional funds.*
- iv. *Proposals should be well costed and clear on milestones to be achieved at the various phases to enable proper planning.*
- v. *Funds should be provided to MoSTI/ Office of the President for monitoring and evaluation of the projects.*

6.3.9 Capacity of PRESIDE to carry out their supervisory mandate.

From the interactions and visit to PRESIDE premises, the Committee established that:

- a) Out of the seven confirmed staff of PRESIDE, only one (Dr. David Sseruka) had the professional training and experience relevant to supervision of medical research and experienced research fellows at Doctorate and professor level.
- b) The projects were in diverse fields and thus required that the PRESIDE secretariat be constituted of competent and diverse subject matter experts to adequately supervise the projects; which was not the case.
- c) Whereas PRESIDE Research Associates report to PRESIDE Think Tank and Secretariat, the Committee established that the PRESIDE Think Tank was comprised of PRESIDE Research Associates. It is important to note that the PRESIDE research Associates were supposed to vet, supervise their own projects as some of them are part of the scientists in the identified 23 projects under PRESIDE. (see appendix 11 for PRESIDE's organogram)
- d) None of PRESIDE's staff was an accountant.

Observations

The Committee observed that;



- i. MoSTI released funds without the required certificates of clearance for project milestones from PRESIDE.
- ii. Lack of planning on the part of Government as it failed to avail funds for MoSTI to give oversight to PRESIDE/ projects and a transition plan for MoSTI's abolition.
- iii. The selection criteria of the projects by the Chairperson PRESIDE seemed to have been at personal level with the scientists who never expected serious monitoring and evaluation of their projects.
- iv. Lack of strategic evaluation and monitoring mechanisms from MoSTI affected the projects' performance.
- v. The PRESIDE Secretariat lacked capacity to supervise the financial and technical aspects of the projects because they lacked the prerequisite qualifications and experience.

Committee Recommendations

The committee recommends that;

- i. The NRIP framework should be used to guide selection of projects, their monitoring and evaluation and exit.***
- ii. The role of PRESIDE, its secretariat and research associates should be absorbed within the structures of the NRIP framework.***
- iii. The committees within the NRIP framework should be constituted with the relevant skills.***
- iv. Consequently MoSTI should urgently be staffed.***

6.4 TOR 4: TO ESTABLISH THE CHALLENGES FACED IN DEVELOPMENT OF THE COVID-19 VACCINES AND MEDICINES.

The Committee established the following as challenges faced during the implementation of PRESIDE projects;

- a) There was a delay in disbursement of funds despite the fact that the money was for emergency interventions. This not only slowed down the progress of the projects but also affected morale of the researchers.

- b) PRESIDE reported delays in delivery of equipment. Some of the imported equipment was delayed because of the COVID- 19 restrictions. This affected the progress of some of the projects, so much that by the time the Committee visited Busitema for instance, they still lacked a bulk extractor for processing of herbal extracts.
- c) The procurement processes, laws and policies were quite onerous, exacerbated by the COVID-19 restrictions.
- d) Researchers lamented that most of the consumables and reagents needed for the study were expensive given their demand and limitation of their supply due to COVID-19 restrictions. Budget implementation became difficult because of price fluctuations of vital consumables. Further most suppliers preferred direct procurement yet it is discouraged.
- e) Poor project planning by the scientists affected the progress of some projects and delivery of outputs in time. Scientists at Busitema failed to plan for the need of in-vitro studies to confirm properties of their herbal formulation. In-vitro studies were being undertaken at UVRI and these were delayed, hence affecting completion of the Busitema research.
- f) The inability of PRESIDE Think-tank to identify research gaps across projects in time so as to identify collaborations within projects/ research entities to bridge these gaps in the research architecture.
- g) Remuneration of personnel working on the projects was inadequate. The personnel on the projects were paid very meagre top-up allowances, and they were government employees who could not earn double salaries. In addition there were inconsistencies in allowances paid to researchers across projects. This demotivated the researchers.
- h) Discriminative supply chains. Some identified suppliers for equipment, consumables and reagents needed by the scientists were discriminative and would abandon plans to supply before negotiations were completed. This was rampant for highly specialized consumables where suppliers wanted to maintain monopoly, for instance, the transgenic mice could not be imported in time due to monopolistic interests of the initial supplier who refused to provide a license for the reproduction of the transgenic mice. Consequently, the MoSTI had to engage another supplier. It was also reported that, in some



instances the institutions had to go through other friendly collaborators to acquire the reagents needed.

- i) Partners abandoning Projects. Some of the projects did not take off because they had initially been evaluated based on the fact that the grant or funding was a top-up to a partnership/collaboration. The proposed partners abandoned the projects yet they had already been cleared to receive funding for research from GoU. Although such funds were reallocated to other progressing projects, the country lost out on advancing this research. This was the case for the STEM cell research at JCRC.
- j) Lack of a Level IV laboratory facility that incapacitates the country to identify and patent new pathogens as well as advancing research on the same. The country consequently loses genetic material to more advanced laboratories that are able to manage very infectious pathogens, which would affect the aspirations of advancing a pathogen economy.

Despite these challenges the Committee noted that PRESIDE was able to make the following achievements:

- i. Demonstrated that with political will, research funding can be utilized to advance key priorities for the country.
- ii. Demonstrated the capabilities of Ugandan scientists to generate local solutions for global challenges. For instance, under COVID-19 research on diagnostics, JCRC was able to carry out innovation in testing that reduced turn-around time from 7 – 8 hours to less than an hour using a modification that relied on paramagnetic vial tests. Leveraging its experience with research on HIV viral load on the body, JCRC was able to develop COVID-19 diagnostic tests that are simple, reliable, fast and have a high throughput i.e. the Rapid Air Jump Amplification Assay.
- iii. Made use of synergies within research institutions to advance biological research
- iv. Indicated that Uganda has improved capacity of scientists and institutions to rapidly respond and manage other disease out breaks and pandemics. The equipment and knowledge acquired is a stepping-stone for medical research in the country.

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- v. Further still, highlighted that Uganda has advanced its vaccine development for Rift Valley Fever, which greatly benefited from the equipment acquired such as equipment for RNA-vaccine project.

6.5 TOR 5: TO INQUIRE INTO ANY OTHER MATTERS INCIDENTAL TO COVID-19 RESEARCH

For this TOR, the Committee inquired into the legal status of PRESIDE, its operations including vetting processes, approval for projects, MoU, Restructuring of MoSTI, Research coordination and research funding in the country among others.

The Committee the following:

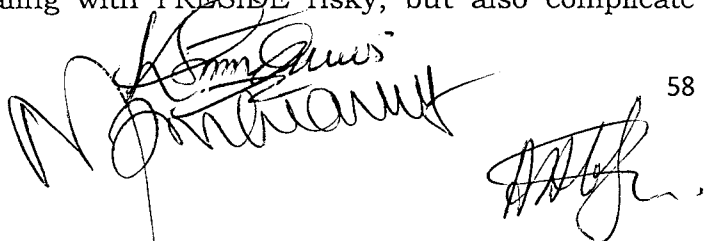
6.5.1 Legal Status of PRESIDE

The Committee while interacting with the petitioner was informed that PRESIDE was a company formed by Dr. Monica Musenero and some of her family members including her husband. These allegations were disputed by Hon. Musenero, who informed the Committee that PRESIDE is neither an organization nor a company but a project under State House.

Documentation availed and reviewed by the Committee indicated that PRESIDE is a Presidential initiative by His Excellency the President who through a letter dated 22nd April 2020 wrote to Dr. Musenero approving establishment of a scientific think-tank, PRESIDE. This directive was implemented by the Rt. Hon. Prime Minister's letter to Dr. Monica Musenero indicating that PRESIDE is a "scientific think tank" (see appendix 2).

However, the Committee noted that the establishment of PRESIDE violates governance rules, as it has no legal status. The initiative has not been incorporated in accordance with the laws of Uganda. Therefore it is not a legal entity. The Committee also observed from the concerned officials that no steps had been taken to have it legally established.

Although a project write up on PRESIDE was provided to the Committee, it was void of any specific terms of reference, mandate, and strategic plan. These limitations not only make dealing with PRESIDE risky, but also complicate





accountability and enforceability of its obligations. Given that the initiative was to handle large sums of public funds, it was prudent that all legalities are established to guide implementation.

Following H.E the president's directive, the Prime Minister needed to be advised on the implementation of the initiative including, its legal status, governance structure, and mandate among others. It is the Committee's opinion that the Attorney General ought to have advised Government appropriately on matters such as this.

H.E the President as the Fountain of Honour and as Head of State directed that a scientific initiative be established to do research on vaccine development for Uganda following drug hoarding in the developed world. This was in exercise of his powers and authority as provided for by Article 98 of the Constitution of the Republic of Uganda, 1995. The committee however noted that even when the president issues a directive on a specific matter, such executive directives have to be implemented and executed in accordance with the Constitution and other laws of Uganda. Article 99 states as follows:-

"(1) The executive authority of Uganda is vested in the President and shall be exercised in accordance with this Constitution and the laws of Uganda.

(2) The President shall execute and maintain this Constitution and all laws made under or continued in force by this Constitution.

(3) It shall be the duty of the President to abide by, uphold and safeguard this Constitution and the laws of Uganda and to promote the welfare of the citizens and protect the territorial integrity of Uganda."

A reading of the above-cited Article 99(1) of the Constitution suggests that the powers and authority, of the President, have to be exercised in conformity with the necessary provisions of the laws of Uganda. This is buttressed by the decision of Berinson J in the case of *Matana v Attorney-General*¹⁴ PD 970 at 977 where court defined the extent of executive powers, by holding that-

"The President is a creature of statute and his powers are defined by law. Like everyone else in this country, he enjoys no rights or privileges which are not



accorded to him by the laws of the State and every official act of his which exceeds the limits of the law is null and void”

The above decision therefore implies that the directive by H.E the President to the Prime Minister needed to be effected in conformity with the law especially regarding establishment of the initiative with clear mandate and in clear guidance or consultation with the Attorney General, who is the Government Chief Legal Advisor according to Article 119 of the Constitution.

Additionally, the Committee noted that previous Presidential Initiatives such as Presidential Initiative on Banana Development and Kiira Motors Corporation have since transitioned into incorporated companies of which Government holds shares. Although their legalization was also delayed, the Attorney General ought to have avoided the pitfalls of previous initiatives while establishing PRESIDE.

Committee Recommendation

The Committee recommends that;

- i. The Government should regularize the establishment of PRESIDE under the Laws of Uganda, if it is to stay.***
- ii. Government should ensure that Presidential programs, initiatives and directives are implemented in accordance with the legal framework of Uganda.***

6.5.2 The PRESIDE Think Tank and Secretariat: Staffing

The Committee was informed that the PRESIDE secretariat employs seven staff under State House. This information could not be verified since the Committee was not furnished with PRESIDE’s payroll. PRESIDE also has a twelve think-tank members as indicated in an organogram of PRESIDE’s operational structure. (See appendix 12)

The Committee further established from the State House Comptroller that the staff of PRESIDE are on contract and their recruitment was based on Dr. Musenero’s identification and authorization was equally done by Dr. Musenero, as there was no advertisement for these positions.



The committee noted that this was in clear violation of the employment laws of the land. Not only was the recruitment process not transparent, it was also not competitive and was irregular.

The Committee met all the seven PRESIDE staff to establish its capacity, in addition the Committee received their terms of employment. During the interrogations, the Committee established that Ms. Namuleni Lydia, who is one of the seven (7) PRESIDE secretariat staff in the capacity of the Hon. Minister's Personal Assistant is a cousin sister to Hon. Dr. Monica Musenero Masanza but the rest denied any blood relationship.

The Committee further noted that the current Chairperson of PRESIDE is also the Minister responsible for Science, Technology and Innovation and still holds the portfolio of the Senior Presidential Advisor on Epidemics. This presents a serious conflict of interest since she is the supervising Minister of STI and related agencies, and an implementer under PRESIDE, and also an advisor to the President about PRESIDE. This gives her unfettered powers which compromises separation of duties and appropriate governance standards.

Committee Recommendations

The Committee recommends that;

- i. The Minister of Science Technology and Innovation should be different from the Chairperson PRESIDE and the Senior Presidential Advisor on Epidemics thus the Minister responsible for Science Technology and Innovation should be relieved of her role as Chairperson PRESIDE and Senior Presidential Advisor on Epidemics to avoid conflict of interest and to meet the principles of good governance.***
- ii. The recruitment of PRESIDE staff should be informed by the Public Service Recruitment Standards.***

6.5.3 PRESIDE Premises

The Committee during its visit to PRESIDE offices noted that the offices were not clearly marked with a signpost and thus making it hard to locate. The Committee



also established that the offices and staff were being shifted to the new MoSTI premises.

The Committee observed that failure to mark public offices causes a risk of misuse of the premises, equipment and other resources. This also presents a challenge of access to such public office by relevant stakeholders.

Committee Recommendation

The Committee recommends that in the spirit of transparency and accountability, PRESIDE premises should be clearly marked and accessible.

6.5.4 Memorandum of Understanding and Tripartite Agreements

The committee established that PRESIDE entered into a Memorandum of Understanding with MoSTI.

As earlier noted above, PRESIDE is not legally established hence not a legal entity. It has no capacity to enter into contracts because it is neither a body corporate nor a legal person and only coordinating a team of scientists in COVID-19 related research. This lack of distinction in the legal status of the parties poses a challenge on enforceability.

CLAUSE 6.2.1 of the MoU indicates that the MoU had an initial period of one year from the date of execution. It also further indicated that it could be renewed for subsequent periods as circumstances would require from time to time. The MoU therefore was to expire on 6th September, 2021 and it was purposely for UGX. 31bn released in FY 2020/21.

Observations:

- i. The MoU in 6.2.3 exempted subsequent /subsidiary agreements relating to the subject matter of the MoU regulating the relationship between the parties. It was noted that the said subsequent agreements were tripartite agreements between MoSTI, PRESIDE and the research institutions (*refer to Appendix 9*).
- ii. Although the bilateral MoU does not affect the validity of the subsequent agreements made in its furtherance, it was noted that even the tripartite



agreements had also expired. The tripartite agreements provided a timeframe in which the projects were to be implemented. The tripartite agreements provided for a period of one year in accordance to article II of the agreements but the Committee noted that they had not been renewed. This has been further exacerbated by the disbandment of MoSTI since it was a party in the said agreements.

- iii. The committee also observed that whereas Parliament appropriated funds to MoSTI for PRESIDE projects, the vote was later subsumed by President's Office. Therefore, there is no working framework (MoU) between the Office of the President and PRESIDE and the host institutions.

Relatedly, Hon. Dr. Monica Musenero Masanza informed the Committee that a new MoU with the Office of the President had been initiated and forwarded to the Solicitor General for review and clearance, she however provided no evidence to that effect.

Committee Recommendations

The Committee recommends that;

- i. ***Government should ensure that Presidential programs, initiatives and directives are implemented in accordance with the legal framework of Uganda***
- ii. ***In the spirit of rationalization, PRESIDE should be disbanded. The role of PRESIDE, its secretariat and research associates should be absorbed within the structures of the NRIP framework. Consequently, Projects funded under the STI sector should be governed under the NRIP framework.***
- iii. ***The structure of MoSTI should be expeditiously completed and the Ministry urgently staffed to perform its duties.***

6.5.5 Breach of MOU

The Committee noted from the MOU that the parties had different responsibilities. Key amongst them for PRESIDE were as listed below:

1. PRESIDE would provide technical and administrative oversight at execution level of research projects;



2. Vet and approve applications for funding and verify the project specifications, technical requirements, research appropriateness and core competences of the research teams;
3. Issue clearance certificates for funding at each phase and require accountability for funding at each stage;
4. Appraise projects and review project performance at each stage of funding and evaluation;
5. To account to MoSTI for all monies advanced by MoSTI as required by law;
6. Execute grant agreements with the project teams and ensure each team delivers on their commitment to the project and products as set out in the project proposals.

Observations:

The committee observed that despite the commitment by PRESIDE in the MOU to account for all monies advanced by MoSTI and progress reports both financial and technical, PRESIDE did not account to MoSTI for funds advanced to projects. Several reminders were sent by the Permanent Secretary MoSTI to the Chairperson PRESIDE to provide the accountability for funds disbursed, but all in vain.

The individual scientists eventually accounted for the funds disbursed, but not all were accounted for as was observed in the Auditor General's report on COVID-19 funds. The Auditor General noted that UGX. 491 million was not accounted for. Further, there were no clearance certificates issued for funding prior to completion of each stage.

On the other hand, MoSTI also released funds without receiving proof of supporting documents as required under section 4.3 of the MoU. Release of funds was to be tagged to project implementation schedule clearly showing milestones, a clearance certificate for each stage and project reports.

Committee Recommendation

The committee recommends that MoSTI/ Office of the President should put in place a new MoU whose conditions should be adhered to in respect to all research projects.



6.5.6 Selection and Vetting Process for Research Projects

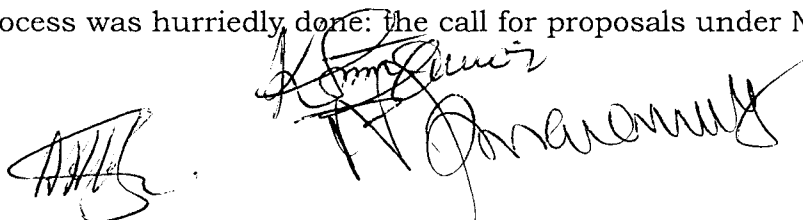
While interacting with Dr. Musenero on 25th November 2021, the Committee established that the MoSTI through the NRIP was already funding research by scientists and UGX. 10bn had been annually earmarked for scientists until parallel funding was set up under PRESIDE.

Although the ministry in its call circular had invited proposals for COVID-19 costed concepts to be received by 19th April 2020, Dr. Musenero noted that some strategic areas such as vaccine research did not receive adequate response following MoSTI's call circular. Consequently, on the 22nd of April 2020, H.E the President directed Dr. Musenero to set up research teams. A brainstorming meeting was consequently held on 28th April 2020 where in the way forward, Dr. Musenero advised that the group come up with brief vaccine concepts to be submitted by end of day 30th April 2020 under five themes that she listed (See minutes attached as appendix 13).

The Committee in its interaction with the Hon. Minister established that the projects were vetted for competency and eligibility for funding by PRESIDE through peer review of the proposals of applicants. The Committee further obtained minutes of the meetings that were held on the 28th April 2020, 25th June 2020 and 30th June 2020 as annexed under appendices 14.

The Committee found that on the 28th April 2020, 5 presentations were made to the meeting. Although in the Chairperson's way forward, 5 projects on vaccine development were selected to proceed with writing proposals, only two of those had been presented at this meeting. For the subsequent meetings on 25th and 30th June, out of the 15 presentations made, only four (4) ended up on the final list of 23 projects that were financed for the FY 2020/21. Therefore, there is some evidence for the selection of only six (6) projects of the COVID-19 projects. Further documentation to support this vetting process was requested but never submitted to this Committee.

Additionally, the Committee observed that some of the projects were hurriedly selected before communication of the projects selected under NRIP was completed, and there is no evidence that MoSTI forwarded the list from its process to PRESIDE. The process was hurriedly done: the call for proposals under NRIP





ended on 19th April 2020, research teams set up by 22nd April 2020 and 5 projects selected on 28th April 2020 with concepts written by 30th April 2020. There was no evidence of a separate public call made under PRESIDE which disadvantaged scientists/ institutions that would perhaps have benefitted from the funding and participate in the research.

Although MoSTI as a key partner in these projects informed the Committee that they were never consulted in the selection of projects, it was noted that there was a representative from the Ministry at the meetings held on the 25th June and 30th June 2020. It should also be reported that projects were checked for feasibility but the analysis was not detailed. For instance, some projects were rejected on basis of being too expensive, duplications, merged or lacking in innovativeness.

Whereas this process leads to six-selected projects, PRESIDE funded twenty three (23) projects. The process does not explain how the remaining seventeen (17) projects were selected.

Observations:

The Committee observed that the selection of projects was rushed without detailed analysis of their feasibility. The selection process was also not transparent as there was no external call for proposals but rather a handpicking of some projects. Not all projects selected were vetted. The selection process of the projects was therefore irregular.

Committee Recommendations

The Committee recommends that;

- i. Management should review its vetting process to ensure thorough due diligence is undertaken, before funds are allocated to projects.***
- ii. Vetting processes should be aligned with the NRIP framework.***
- iii. In accordance with the Uganda National Health Research Organisation Act, in collaboration with Uganda National Council for Science and Technology, MoSTI, Ministry of Health, UNHRO should develop a research plan to guide medical research in the country.***
- iv. The research agenda should be linked to university curriculums and should be informed by the industry needs of the country.***



- v. Project proposals should be vetted and selected in line with the national research agenda/plan.*
- vi. Detailed feasibility studies should be carried out to inform selection of projects that are commercially viable. This can be achieved by putting in place a unit within the structure of MoSTI to study and model such projects for commercial viability before they are rolled out.*
- vii. A research and professionals database should be established and be made publicly available to identify ongoing research and available skills and expertise. This will facilitate easy identification of researchers and projects in future as well as establishing synergies between institutions as well as guard against duplications.*

6.5.7 Disregard of Established Institutions and Frameworks

The Committee noted that the Uganda National Health Research Organization Act, 2009 established the Uganda National Health Research Organization whose objective is to create a sustainable culture of health research by providing among others policy and ethical guidelines and national coordination of health research. The mandate of Uganda National Health Research Organization among others is to:

- a) Register, renew and coordinate different types of health research in Uganda and promote multi-disciplinary and inter-sectoral research collaboration in a bid to establish national health research. This is consistent with the National Health strategic plan.
- b) To identify, set up and enforce national health research policies and develop a National Health Research Plan for all health related research Institutions.
- c) Appraise scientifically and ethically and give approval in collaboration with UNCST to all research protocols related to health, before commencement of any biomedical or other health related research.
- d) Monitor, evaluate and terminate any research in progress.

Therefore, Uganda National Health Research Organization is Uganda's organization responsible for coordination, promotion and guidance for health



research and development in Uganda. The organization sets the national health research agenda, coordinates, facilitates and monitors the implementation of health research programmes. It also further coordinates research collaborations, enforces ethical standards among others.

On the other hand, the Uganda National Council for Science and Technology (UNCST) is a Government of Uganda Agency, established by section 2 of The Uganda National Council for Science and Technology, CAP 209 laws of Uganda. The Council is mandated to facilitate and coordinate the development and implementation of policies and strategies for integrating Science and Technology (S&T) into the national development process.

It was also established the MoSTI is mandated to provide overall guidance and coordination for scientific research, development and the whole National innovation System in Uganda. Further the Ministry was mandated to develop requisite Science, Technology, and Engineering & Innovation infrastructure.

Observations:

- a) The Committee observed that PRESIDE usurped the roles of the above mentioned government agencies on STI. Save for some projects seeking approval of their research protocols from UNCST, PRESIDE identified, appraised, approved, facilitated, supported, coordinated and evaluated health research projects without collaboration with the mandated institutions.
- b) The Committee further observed that PRESIDE ignored the already existing STI agencies such as UNCST, UNHRO and MoSTI in the search, approval, facilitation and evaluation of projects.
- c) It was also noted that while the above named traditional government institutions related to STI received no or limited funds for COVID related activities, PRESIDE was given preference. This not only defeats the government reform and rationalization of government agencies and expenditure program, aimed at facilitating efficient and effective service delivery, it creates unhealthy competition among government entities, conflict, demoralization of human resource, organizations jurisdictional ambiguities, duplication of mandate and wastage of national resources.

Committee Recommendations



The committee recommends that;

- i. In accordance with the Uganda National Health Research Organisation Act, in collaboration with Uganda National Council for Science and Technology, MoSTI, Ministry of Health, UNHRO should develop a research plan to guide medical research in the country.***
- ii. Project proposals should be vetted and selected in line with the national research agenda/plan.***
- iii. Emphasis should be placed on the disbandment of PRESIDE and all projects funded under the Science Technology and Innovation sectors and governed under the NRIP framework.***

6.5.8 Innovation Fund (National Research and Innovation Programme)

The Innovation Fund was established following the Presidential Initiative for Science and Technology Innovations by H.E the President in FY 2016/17. Consequently, Parliament has appropriated funds to MoSTI through the years 2016- 2021 for this purpose. The National Development Plan III also emphasizes that establishment of a research and Innovation fund and popularizing a research agenda as key in driving growth in the STI sector. Parliament in its recommendations advised that government comes up with guidelines to operationalize this fund and these were completed in April 2019 (NRIP framework). The framework amongst others provides for application and selection processes for beneficiaries, governance structure, including supervision and reporting channels, monitoring and evaluation mechanisms, and equipment use.

It is under this framework that the call for proposals for COVID-19 research by MoSTI was made. The scope of the NRIP call included all fields under STI inclusive of medical research. The Committee therefore observed that creation of a new “outfit” to progress covid-19 research defeated Government’s policy on rationalization and operationalization of the innovation fund and created ambiguities which the NRIP framework was trying to address.

Observations:



The innovation fund has to date received an allocation of UGX. 50bn with a plan to gradually raise it up. The fund currently has an annual funding gap of UGX. 35bn to support projects from enthusiastic scientists.

Through the NRIP, the MoSTI supported and funded initiatives such as; Makapads, snail tox, bio-chemicals and microbes to kill mosquito larvae and prevent malaria, low cost ventilator for assisted breathing for COVID-19 patients, and medicines to manage patients with COVID-19 including COVIDEX.

The establishment of PRESIDE not only hindered the NRIP as the UGX. 10bn allocated under the innovation fund was channeled towards COVID studies and thus greatly affecting the other researchable Science and Technology areas, but also offered a duplicate service to what the NRIP Steering Committee under the MoSTI had been mandated to manage.

Committee Recommendations

The committee recommends that;

- i. Government enhances annual funding to the NRIP by an additional UGX. 35bn to address the current funding gap which will enhance research development and innovation.***
- ii. All COVID related project proposals should be vetted and selected in line with the national research agenda/plan.***

6.5.9 Ongoing Research and Underfunding of Research in Host Institutions.

The Committee was informed that prior to COVID-19, institutions such as UVRI had a vaccine development Plan already in place but were incapacitated due to lack of funding. Similarly JCRC has been at the forefront of groundbreaking research in care and treatment of HIV/ AIDS, cancer, sickle cell disease, Tuberculosis and cardiovascular diseases.

Key amongst these are the ion gene studio s5 studies which are key to management of cancers in Uganda, gene therapy for cure of HIV and sickle cell disease.

The strategic plans of research institutions though ambitious are not adequately funded. This not only affects the morale of the scientists but also delays progress



by institutions in delivering results that would reduce the disease burden of the country. PRESIDE is one of the tools to bridge this funding gap but needs to operate within existing laws and government structure so as to address duplications, remove ambiguities and provide administrative efficiencies.

Further it was established that some of the host institutions had commenced expansion of their premises by putting up structures to house facilities like laboratories or had master plans for these premises but were resource constrained. For instance in Busitema, the University construction of a laboratory block had begun but stalled due COVID-19 budget cuts. As a result some of these equipment have been installed in rented premises, which could cause inconveniences, in case the owners of the premises decide to repossess their premises.

The committee was informed that UVRI had sufficient land in Entebbe and a master plan for its research centre, but lacked funding.

Observations:

The Committee observed that despite the fact that research institutions had plans for expansion of premises and for research, they lacked sufficient funds. PRESIDE therefore was one of the vehicles to bridge the gap. However, its operation flouted laws, created governance ambiguities and inefficiencies as well as duplications.

The Cost of clinical trials is very high (expensive) and has affected most of the progress into COVID-19 studies. This was reported especially by researchers who were not under PRESIDE funding including Prof. Ogwang Peter of Jena Herbal Limited, the manufacturers of COVIDEX and Dr. Lamwaka Alice from Gulu University (the Innovator of the Covilyce 1 Natural Products). This has greatly affected progress in COVID studies.

Government allocated UGX. 30bn as a Research and Innovation fund for public Universities involved in scientific research through Makerere University. This is however limiting to the other Public Universities.

Committee Recommendation



The Committee recommends that;

- i. Government should ensure that Presidential programs, initiatives and directives are implemented in accordance with the legal framework of Uganda.***
- ii. Medical research in the country should be aligned to the national research plan as developed by UNHRO.***
- iii. Research Institutions and studies should be adequately funded to meet the need.***
- iv. The Public Universities Research Innovation Fund should be decentralized to each participating university and management of the same is through individual research budgets and grants management committees.***

6.5.10 Project Approvals by UNCST and NDA.

It was noted by the Committee that when a research proposal is generated, it first undergoes approval from the relevant Institutional Research Ethics Committee. Thereafter, it is submitted to Uganda National Council for Science and Technology for approval (See process flowchart attached as Appendix 13). Uganda National Council for Science and Technology (UNCST) is a Government of Uganda agency established by the UNCST Act CAP 209, laws of Uganda and is the clearing house of information on research and experimental development. In its research clearing process, UNCST liaises with UNHRO for medical related research, the Research Secretariat at the Office of the President for security verification and clearance and with NDA to obtain certificates in respect to clinical trials.

In a meeting with UNCST it was established that not all PRESIDE projects as presented had been approved for commencement by the UNCST. Only 11 projects out of the 23 approved projects had received approval for the FY 2020/21 (see attached list as appendix 15). Projects funded in FY 2021/22 had not provided proof of appraisal from UNCST. No project had received approval from National Drug Authority since none had advanced to clinical trial stage.



Observation:

The Committee observes that lack of the necessary approvals in research compromises ethics, biosafety, biosecurity, security, reliability and acceptability of the research results.

Committee Recommendation

The Committee recommends that Government should ensure that Presidential programs, initiatives and directives are implemented in accordance with the legal framework of Uganda. Consequently projects under PRESIDE should obtain requisite approvals before commencement.

6.5.11 Absence of Compensation provisions for scientists for their Innovations

Although the scientists received training on Intellectual Property Rights, it was apparent that their ideas needed patenting and compensation. Although the MoU between MoSTI and PRESIDE and the Tripartite agreements have provisions on Intellectual Property Rights, they are silent on how to compensate scientists on use of their intellectual knowledge as well as government for provision of grants.

It was also noted by the Committee that in the COVID 19 related research, some scientists relied on the knowledge of local herbalists to discover and obtain critical herbs related to their research. However, the efforts and special indigenous knowledge had no formal mechanism of compensation and engagement. For instance Busitema University, whose research required the input of herbalists, had no formal contract signed with the herbalists.

Observations:

The Committee observed that the lack of a royalty plan disadvantages the scientist in respect to their efforts and at the same time government lacks the requisite means to replenish its resources to further support research and development as scientists are not under obligation to make any contribution towards the innovation fund.

Further, it was observed that the lack of compensation and recognition of local herbalists unfairly disadvantages the herbalists and does not promote



conservation efforts of critical medicinal flora for mass production since the herbalists expect or see no benefit for their efforts.

Committee Recommendations

The Committee recommends that;

- i. Government should put in place a clear policy that fosters sustainability of innovation funds and compensation of scientists. On successful commercialization of projects, all parties involved in its development should be able to recoup financial benefits from it. Such benefits can be prescribed by percentage in relevant legal and regulatory instruments.**
- ii. Provisions of the Traditional and Complementary Act, 2019 should be evoked to provide for right and obligations of herbalists in research.**

6.5.12 Closure of the Ministry of Science, Technology and Innovation

The GoU established the Ministry of Science Technology and Innovation in 2016 under Vote 023, with a mandate to oversee the overall contribution of the Science Technology and Innovation Sector towards attaining the development goals enshrined in the National Development Plan and Vision 2040. MoSTI was eventually abolished in June 2021.

At the time of abolition, the Ministry had put in place structures, recruited technical staff and registered significant achievements and progress in pursuit of its objectives. Key amongst these was construction of Kiira Motors vehicle plant facility, implementation of the Sericulture projects, implementation of NRIP amongst others. The Ministry had subventions and projects directly implemented by it at the time of abolition and their budgets had been appropriated by Parliament through the Ministry. These had to wait for approximately six months to receive their funds due to the formalization bureaucracies. This slowed down their operations and implementation strategies.



Observation:

The Committee observed that these delays indicate that there was no transitional plan by government to facilitate continuity and seamless transfer of services of MoSTI to the Office of the President.

Committee Recommendations

The committee recommends that;

- i. Government should ensure concrete transitional plans in place in the event that it has to shift its Ministries, Departments and Agencies to another. This in turn will enable a seamless transfer.***
- ii. The Ministry of Public Service should develop guidelines on how matters of transfer of MDAs should be carried out. This is especially necessary as Government is undertaking a rationalization exercise for its institutions.***

6.5.13 Lack of Staff Structure for MoSTI

MoSTI was abolished in FY 2021/22 and its functions transferred to the Office of the President. The former Ministry had a structure with a total staff establishment of one hundred fifty four (154) positions, of which one hundred thirty six (136) positions had been filled. Abolishment of the Ministry rendered most of these staff redundant.

It was further noted that the staff of MoSTI were appointed by the Public Service Commission and consequently still employees of Government, hence they draw salary from the Office of the President until their employment in government ceases. Consequently, their salary arrears from July 2021 to December 2021 have since been paid.

The Committee in its interaction with the Minister responsible for Public Service was informed that the Ministry of Public Service has the mandate to design a structure to operationalize the functions of Science, Technology and Innovation in its new docket. As of 22nd June 2021, the Ministry of Public Service had engaged the Minister of STI and State House with the aim of designing a structure to deliver science, technology and innovation under the Office of the President.



The proposed structure according to the Minister has been submitted to Cabinet for approval under the Cabinet Paper for rationalization of Government Agencies and Public Expenditure.

The Committee noted that although steps are underway to resolve the staffing challenges brought about by the transfer of the portfolio for STI, they are lagging behind. The action plans and strategies to implement the recommended structure were to be developed during the financial year 2021/22 but are yet to be finalized with only three months to the end of the FY. So far, only the common cadre staff have since been redeployed within the Public Service.

Observations:

The Committee observed that failure to staff the Science Technology and Innovation docket under the Office of the President means that all work plans for the Ministry stalled from July 2021 to date.

Further there was wastage of public funds as redundant staff continue to draw salaries which could have been avoided by having a proper transition plan.

Committee Recommendations

The Committee recommends that;

- i. The Ministry of public Service should expedite the completion of the structure of MoSTI. The necessary approvals should be sought and approved by End of June 2022.***
- ii. Government should not transfer its Ministries, Departments and Agencies without transitional plans in place.***
- iii. The Ministry of Public Service should develop guidelines on how matters of transfer of MDAs should be carried out. This is especially necessary as Government is undertaking a rationalization exercise for its institutions.***

6.5.14 Transgenic Mice

The Committee during the investigations noted the public concern about how expensive the mice to be used in the COVID-19 related research were. The



misconception was about why the mice had to be imported at such exorbitant prices yet there are rats in Uganda that were affordable.

The Committee established that the particular mice were transgenic mice. A transgenic mouse is a type of mouse model with an extra genetic sequence inserted into its genome. This sequence, also known as a transgene, varies from model to model as each transgenic mouse model is specifically designed with certain experiments in mind. The Committee established that the SARS-CoV-2 infects human cells through the human angiotensin-converting enzyme 2 receptor (ACE2). The ordinary laboratory mice did not have this receptor and therefore they had to be genetically modified to express the desired characteristics. The Ordinary mice like the ones the Committee found at the COVAB laboratories at Makerere University cost approximately UGX. 30,000/=. On the other hand, the cost of animal models are determined by the number of genetic changes that are made to them. The K18-hACE2 mice, one of the transgenic mice¹⁵ that expresses the human ACE2 cost from USD 97.2 to USD 117¹⁶.

Observation:

The Committee observed that although ordinary mice were used in preclinical trials, there was need to use transgenic rats to express the ACE2 receptor of COVID-19. However, these rats cost approximately USD 117.

Committee Recommendations

The Committee recommends that;

- i. The animal Laboratory facility at COVAB should be expedited for breeding of transgenic mice in order to cut on the cost of future importation of the same.***

¹⁵ Muñoz-Fontela, c., Dowling, W.E., Funnel, S.G.P et al. Animal Models for COVID-19. Nature 586, 509-515 (2010). <https://doi.org/10.1038/s41586-020-2787-6>

¹⁶ https://www.invivos.com.sg/wp-content/uploads/2019/09/K18-hACE2-mice_INVIVOS-update-on-availability-price.pdf and The Jackson Laboratory, Accessed at <https://www.jax.org/strain/034860>



- ii. ***Procurement of such rats from the international laboratories should be within acceptable costs to avoid wastage.***

7 CONCLUSION

Although PRESIDE was established with a visionary mandate, to be a vehicle to spear the pathogen economy, it has been mired with mismanagement, poor accountability practices and overall poor planning. At its inception, Government failed to define its legality, failed to analyze and optimize the structures that were already in place and build on these as a way of driving the pathogen economy forward. This went against the current government policy on rationalization and improvement of efficiencies within MDAs. The role of UNHRO, MoSTI, UNCST as regulators was usurped and replaced with PRESIDE which had a temporary supervisory framework in form of a MoU. With the expiry of the MoU, PRESIDE as a project remained operational yet not supervised because its Chairperson is the Minister responsible for the docket of STI and also the Special Presidential Advisor on Epidemics.

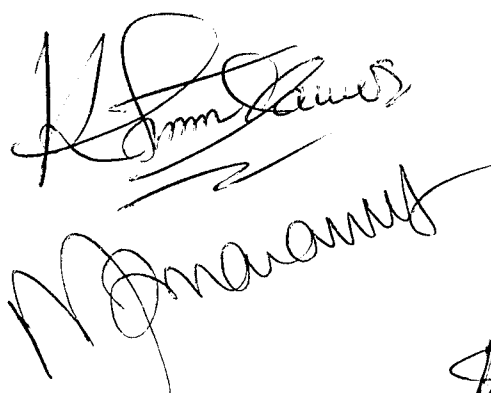
The need to develop a pathogen economy is still viable both in the short term and long term, so as to protect against current epidemics and also safeguard/ prepare for the next disease epidemics. However, for this to be achieved, a well- thought-out, planned and adequately financed strategy should be put in place. This strategy should have input from all relevant stakeholders and should be implemented within the confines of Ugandan laws. The roles of PRESIDE can adequately be covered under the National Research and Innovation Programme Framework, supported by UNHRO Act and UNCST Act. With research institutions already part of UNHRO, they only required funding to drive their strategic plans forward. PRESIDE therefore is a duplication of the already existing structures but without funds.

Given that the Chairperson PRESIDE, the Minister of Science, Technology and Innovation and the Senior Presidential Advisor on Epidemics are the same person, one can say that PRESIDE is currently reporting to itself.

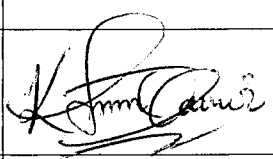
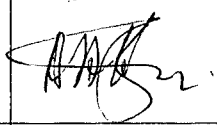
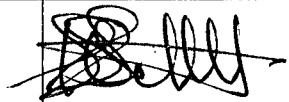
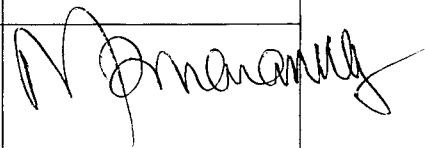
For reasons already given in the report, the Committee strongly recommends that PRESIDE be disbanded, and its funding channeled through NRIP. With a vetting

committee, reporting, monitoring and evaluation mechanisms already in place under the NRIP's framework, the operation of the innovation fund can perhaps be better managed. Research and Innovation has over the years been inadequately financed. The advent of COVID- 19 demonstrated the need for the country to increase its funding towards research development and Innovation. Consequently where research is already ongoing at the research institutions, the projects should be funded directly through budget appropriations to the host institutions.

Rt. Hon. Speaker and Hon. Members, I beg to report.



SIGNATURE SHEET FOR MEMBERS OF THE COMMITTEE

S/N	NAME	CONSTITUENCY	SIGNATURE
1	Hon. Kyooma Xavier	Ibanda County North	
2.	Hon. Awany Tony	Nwoya County	
3.	Hon. Aisha Kabanda Nalule	Butambala DWR	
4.	Hon. Omara Paul	Otuke County	
5.	Hon. Silwany Solomon	Bukooli County	

Appendix I

Appendix 1: List of Documents laid at Table by the Petitioner;

- i. A sunrise newspaper article dated 6th November 2021 alleging that Hon. Dr. Monica Musenero was lying about Uganda making a COVID vaccine;
- ii. A draft special audit findings on COVID-19 related funding to the Ministry of Science, Technology and Innovation for the first three quarters of FY 2020/21;
- iii. Letter from the PS/ST to the PS. Ministry of Science, Technology and Innovation on the directive on aggregating all the funding requirements and equipment by scientists in the fight against the COVID-19 pandemic;
- iv. Letter from the PS/ST to the state house comptroller responding to a request for additional funding for operational expenses of the secretariat for PRESIDE;
- v. Letter from the PS/ST to the PS. Ministry of Science, Technology and Innovation requesting the later to account for funds released for scientists for the FY 2020/21.
- vi. An extract from Minute No 175 (CT 2020) noting the directive from H.E the president to the Hon. Dr. Monica Musenero to aggregate the funding and the equipment that the scientists would require to facilitate and certify their innovations and make a submission to the Minister of FPED.
- vii. Letter from the PS/ST responding to a request for a supplementary budget, in FY 2020/21 for scientists working on domestic development of vaccine, drugs, diagnostics and other COVID related innovations.
- viii. Letter from the PS/ST responding to a request for a supplementary budget of UGX. 10 billion in the FY 2020/21 for establishment of Personal Protective Equipment centre.
- ix. Letter from the PS/ST responding to a request for additional fourth quarter expenditure limits of UGX. 13.14 billion For recurrent and development to the Ministry of Science, Technology and Innovation to cater for the innovation fund and subventions in FY 2019/20.
- x. Letter from Hon. Matia Kasajja to H.E the President responding to the president's directive on funding for manufacturing of all the anti-corona virus requirements in Uganda.

- xi. Letter from Hon. Matia Kasaija to the Rt. Hon. Speaker of Parliament on the addendum to supplementary schedule 5 FY 2020/21.
- xii. Letter from Mr. Obong David, the then Permanent Secretary Ministry of Science Technology and Innovation to Hon. Monica Musenero on speeding up the process for release of operational funds for scientists under the PRESIDE and COVID epidemic research beneficiaries.
- xiii. A letter from Hon. Monica Musenero to Hon. Matia Kasaija requesting for a release for 3rd and 4th quarter 2020/21 funds for projects.
- xiv. Letter from Hon. Dr. Monica Musenero to Mr. Obong David, the then Permanent Secretary on funding relating to funds towards COVID-19 research and innovations under the national research and innovation program.
- xv. Letter from Hon. Matia Kasaija to Hon. Dr. Monica Musenero regarding the manufacturing of all the anti-corona virus requirements in Uganda.
- xvi. Letter from the RT. Hon. Speaker of Parliament to Hon. Matia Kasaija on Parliament resolution on re-allocation of funds from Ministry of science, technology and innovation to Office of the President.
- xvii. Letter from Hon. Dr. Monica Musenero to Hon. Matia Kasaija requesting for a halt in transfer and expenditure of funds for FY 2021/22 for Ministry of Science, Technology and Innovation.
- xviii. Letter from Mr. Obong David to Dr. Monica Musenero requesting for progress reports and supporting documents for the tripartite grant agreements signed between the Ministry of Science Technology and Innovation, PRESIDE and the grantee institutions.
- xix. Supplementary Budget for COVID-19 Interventions.
- xx. Letter from Mr. Obong David to Dr. Monica Musenero on the finalization of the Ministerial Policy Statement and draft budget estimates for the FY 2021/22.

Appendix 2: Letter on Presidential Scientific Initiative on Epidemics



THE REPUBLIC OF UGANDA

PRIME MINISTER

ADM 6/01

A

May 18, 2020

The Minister
Ministry of Finance, Planning and
Economic Development
KAMPALA

Dear Colleague,

PRESIDENTIAL SCIENTIFIC INITIATIVE ON EPIDEMICS

I am in receipt of a letter PO/12 of 6th May 2020 addressed to me by H.E the President with a copy to you, on the above subject.

As seen from the letter, H.E the President approved the Establishment of a Scientific Think Tank (The Presidential Scientific Initiative on Epidemics). H.E the President in the same letter directed that UGX 2,000,000,000/- (Uganda shillings Two billion only) be released to facilitate the operations of the Initiative including support for the operations of the Secretariat and Initial Research activities.

I have held discussions with Dr. Musenero who has submitted a copy of the proposal she presented to H.E the President. A copy is attached for your ease of reference.

The purpose of this letter is to draw your attention to H.E the President's directive and ask that you release the funds to the State House Comptroller since the initiative will be directly under H.E the President himself.

Yours sincerely,

Ruhakana Rugunda (Dr.)

- c.c. H.E the President
- c.c. H.E the Vice President
- c.c. Permanent Secretary, Office of the Prime Minister
- c.c. Permanent Secretary/Secretary to Treasury, Ministry of Finance



THE REPUBLIC OF UGANDA

PRIME MINISTER

ADM 6/01

B

May 29, 2020

Dr. Monica Musenero
Senior Presidential Advisor on
Epidemics
KAMPALA

Dear Colleague,

PRESIDENTIAL SCIENTIFIC INITIATIVE ON EPIDEMICS

Reference is made to a letter P0/12 of 6th May 2020 addressed to me by H.E the President on the above subject.

In the letter, H.E the President approved the Establishment of a Scientific Think Tank (The Presidential Scientific Initiative on Epidemics) and directed that UGX 2,000,000,000/= (Uganda shillings Two billion only) be released to facilitate the operations of the initiative.

I accordingly wrote a letter ADM 6/01 on 18th May 2020 to the Minister of Finance, Planning and Economic Development to implement the President's directive.

This is to present a copy of the letter I wrote to the Minister of Finance, Planning and Economic Development to you and to the State House Comptroller for ease of following up the matter.

Yours sincerely,

Ruhakana Rugunda (Dr.)

- c.c. Principal Private Secretary to H.E the President
- c.c. State House Comptroller
- c.c. Permanent Secretary, Office of the Prime Minister
- c.c. Permanent Secretary/Secretary to Treasury, Ministry of Finance



PO/23

October 7, 2020

Dr. Monica Musenero
KAMPALA

**APPOINTMENT AS CHAIRPERSON OF THE THINK TANK FOR
THE PRESIDENTIAL SCIENTIFIC INITIATIVE ON EPIDEMICS**

Please refer to His Excellency the President's decision to create a Scientific
Initiative on Epidemics

You have been appointed as Chair Person of the Think Tank for the Presidential
Scientific Initiative on Epidemics with the following terms and conditions.

- a) Duration : One Year
- b) Effective date : 1st July 2020

If you are prepared to accept these terms of appointment, please inform me in
writing.

Lucy Nakyobe Mbonye
STATE HOUSE COMPTROLLER

Appendix 4

Telephone: 045 41 417 900
045 41 432 990
Fax: 045 41 432 130
045 41 432 990
045 41 432 990
Email: finance@finance.go.ug
Website: www.finance.go.ug

In any correspondence on
this subject please quote U.O. 000 75516/14/02

THE REPUBLIC OF UGANDA

Ministry of Finance, Planning
Economic Development
Plot 2-12, Apollo Kaggwa Road
P.O.Box.8147
Kampala
Uganda

20th August, 2020

4th August 2020

The Permanent Secretary,
Ministry of Science, Technology and Innovation,
Kampala.

THE 2020/21 SUPPLEMENTARY BUDGET, IN FY 2020/21, FOR SCIENTISTS WORKING ON THE DEVELOPMENT OF VACCINE, DRUGS DIAGNOSTICS AND OTHER TECHNOLOGICAL INNOVATIONS

This is to acknowledge receipt of the letter from the Hon. Minister of Science, Technology and Innovation Ref: ADM/46/59/02 dated 10th July, 2020 regarding the above subject.

As you may be aware, on 10th July, 2020, a meeting was held attended by the Hon. Minister of Science, Technology and Innovation, the Scientists led by Dr. Monica Musenero and this Ministry in which the details for financing of Scientists was discussed. The meeting agreed as follows:

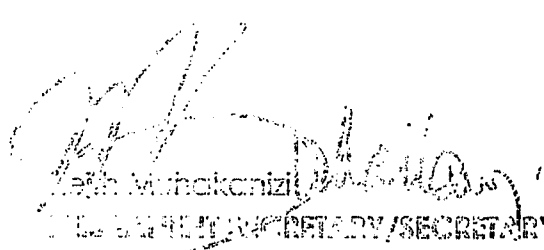
1. For consistency and ease of follow-up on the support for Scientists, a specific budget for Scientists under the co-ordination of Dr. Monica Musenero will be provided under the Ministry of Science, Technology and Innovation.
2. For continuity, the Ministry of Science, Technology and Innovation will continue to support the Scientists hitherto supported through the Innovation Fund. However, there is need to ensure that there is no duplication of the scientists supported under each of the two sources of funding.
3. A total of US\$ 31.032bn will be provided in FY 2020/21 for Scientists under coordination by Dr. Monica Musenero; of which US\$ 15.787bn is for procurement of equipment and US\$ 15.245bn is for operational expenses. It was further agreed that Expenditure Limits equivalent to US\$ 23bn will be provided in the First Quarter of FY 2020/21 for this purpose.
4. The financial support for the Secretariat on co-ordination of Scientists will be budgeted for under State House. The annual budget of US\$ 3.352bn will be provided out of which an expenditure limit of US\$ 1.5bn has been programmed in the First Quarter of FY 2020/21.

It is further noted that the Scientists who were hitherto programmed for support under the Supplementary funding of US\$ 17.15bn which was issued in Fourth Quarter of FY 2019/20 but funds not released due to the time constraints, form part of the list of Scientists who are under coordination by Dr. Monica Musenero.

The purpose of this letter, therefore, is to:

- I. provide the specific details on what was agreed to guide the future actions with respect to the support of Scientific Initiatives on Epidemics as directed by H.E the President; and
- II. request you, in consultation with Dr. Monica Musenero, to provide the budget details at item level, to enable this Ministry provide the budget under your vote.

A copy of this letter, the Senior Presidential Advisor on Epidemics, Dr. Monica Musenero, is advised to follow-up with the State House Comptroller to provide the budget line allocation of US\$ 3.353bn under State House, to cater for the operations of the Secretariat for the Presidential Scientific Initiative on Epidemics.


John Mwachanizi

MINISTER OF FINANCE, PLANNING AND ECONOMIC DEVELOPMENT

Copy to: The Hon. Minister of Finance, Planning and Economic Development.
The Hon. Minister of Science, Technology and Innovation.
The State House Comptroller, State House.
Dr. Monica Musenero, Senior Presidential Advisor on Epidemics.
The Principal Private Secretary to H.E the President.

Date: 3rd March 2022

STATEMENT OF THE HONOURABLE MINISTER SCIENCE AND TECHNOLOGY IN THE OFFICE OF THE PRESIDENT TO THE SELECT COMMITTEE ON THE ALLEGATION RAISED BY HON. YONA MUSINGUZI REGARDING RECEIPT OF FUNDS TOWARDS THE DEVELOPMENT OF A COVID 19 VACCINE

Hon. Chairperson,

Honourable Members:

I received a letter dated 25th February 2022, inviting me for a meeting with this Select Committee to offer a response on issues raised by the committee.

Hon. Chair, I take this opportunity to thank you and the committee for taking on the mantle to understand and interact with our scientists and the great work they are doing.

Below is my response to the issues as stated in your invitation letter to me for this meeting.

1. A Copy of the appointment of the pervious and current chairpersons of PRESIDE

Hon. Chair as I stated in my statement to the committee on 25th November 2021, I was appointed Chairperson of the PRESIDE Thinktank Committee by The State House

1 

none relevant to some areas such as Vaccines and Diagnostics.

Projects in these areas were selected through Hackathons. I attached the minutes to the hackathons and explained the process in my submission to the committee on the 25th November 2021 as annex K and L.

8. The list of all project applicants and selection criteria employed to select the projects for funding under PRESIDE (The guidelines informing the selection of projects)

MoSTI presented to PRESIDE a list of over 30 projects that were pre-selected through the NRIP Program but PRESIDE to deal with projects in response to COVID-19 and prioritized by H.E the President. The rest of the projects that weren't funded by PRESIDE, MoSTI took them on under NRIP. For example Covidex

9. The framework under which the projects whose grant agreements expired but continue to implemented.

The Office of the President has worked with the respective grantees to renew the grant agreements for the ongoing projects.

10. Update on the utilization of the Ush. 50.4Bn Supplementary towards the vaccine manufacturing plant.

We are finalizing the arrangement for technology transfer to put up the vaccine manufacturing plant and procurement of the local contractor is ongoing.

11. PRESIDE's MOU with SAMRI India. The company intended to promote the Ugandan vaccine.

SAMRI is a Ugandan Company which is working on technology transfer.

The MOU process was initiated but not yet finalized.

- c) The candidate vaccine has been shown to be safe and to elicit a strong immune response
- d) The next step is proof of efficacy in the special mice "Mousenero"

3. UG-INA-19

We have collected patient swabs and used these to isolate COVID-19 viruses circulating in our population. Specific emphasis has been placed on the Delta, Beta and Omicron strains that are known to be more resistant to protective antibodies. These viruses have been isolated and expanded to prepare bulk stocks. The stocks have been inactivated and we are currently in pre-clinical animal trials.

We are now in the process of setting the GMP facility to support the human clinical trials for these vaccines. The WHO mission is expected in the country to provide technical support.

The Ministry would like to assure all Ugandans that we are on track to develop a home-grown vaccine that will be effective in the protection of us without subjecting us to inhumane discrimination that characterised the distribution of vaccines to Africa at the height of the Covid-19 pandemic.

Our scientists have demonstrated high levels of integrity and commitment to the vision of our President and this Government and no amount of distraction will deter them from our mission to make Uganda vaccine independent.

The infrastructure and human capacity developed will enable Uganda to domesticate many of the vaccines that we are currently importing, develop new vaccines for diseases that don't have vaccines yet and in future rapidly respond to emerging health threats like the developed countries.

Hon. Members I understand that you have interacted with the scientists and the projects and also in reference to the two previous

Hon. Members as you have noted, scientific work requires great sacrifice and often not well remunerated. Through this process, the members of the committee have become well informed about this work and I call upon you to support and protect our scientists and the work they are doing.

Honourable Chairman and Honourable Members of this committee I thank you for the work that you have done the past months. I thank you for interacting with the scientists and the work they are doing. You have experienced first-hand and more than any other persons what is going in the R&D in the country often done behind closed doors. Some of this work is new in our setting but in response to the call by His Excellency, our scientists, courageously took on the task and they have made tremendous progress. In many cases exceeding our expectations.

I thank you for the great lengths you've gone to understand this work.

On a personal note, all my professional life I have dedicated myself to fighting pandemics and rather dangerous disease outbreaks in the pursuit to save lives of people I don't know and will never know. I have fought Epidemics such as Ebola, Cholera, Murburg, Hepatitis, yellow Fever among others

My service to my country and to organisations I have worked for has been an unblemished and ethical service, that earned me international recognition, most notably I led teams in Sierra Leone in 2014 to combat the terrible Ebola Pandemic. My career has included work with international agencies such as the World Health Organisation, Africa Field Epidemiology Network and many others. I have no record of any corruption allegation against me in my long service both at the national and international level.

7 



11.11.2020

Prof. Pontiano Kaleebu
Director, Uganda Virus Research Institute
Director MRC/UVRI and LSHTM Uganda Research Unit

Dear Sir/Madam,

RE: FUNDING FOR YOUR PROJECT

I am pleased to inform you that the project proposal, for which you are listed as the Principal Investigator titled; ***Self-amplifying RNA Vaccine development*** was approved for funding by the government of Uganda under the Presidential Scientific Initiative on Epidemics (PRESIDE).

Your project has been awarded a total of UGX **1,408,309,861** (*Uganda shillings One billion, four hundred and eight million, three hundred and nine thousand, eight hundred and sixty-one only*) to facilitate research in vaccine development to fight against COVID-19. The funds are allocated as follows:

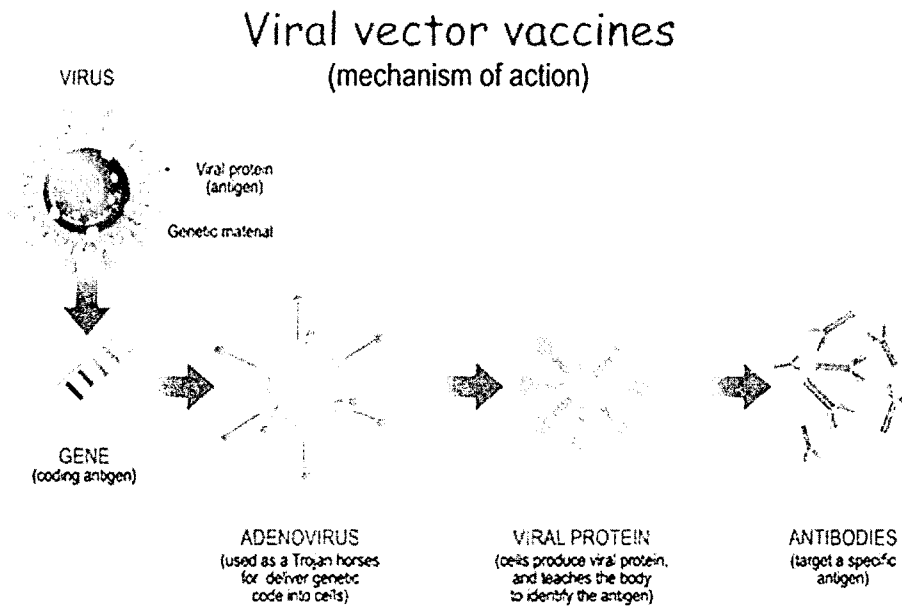
- A. **UGX 617,098,375** (*Uganda shillings six hundred and seventeen million, ninety-eight thousand, three hundred and seventy-five only*) towards procurement of essential equipment (The specified equipment shall be procured on your behalf by the Ministry of Science, Technology & Innovation-MoSTI).
- B. **UGX 791,211,486** (*Uganda shillings seven hundred and ninety-one million, two hundred and eleven thousand, four hundred and eighty-six only*) towards operational costs.

Please Note:

1. The amounts approved may vary from what was submitted in your budgets, we therefore recommend that you rework and align the budget to the approved amount while submitting your request for funding.

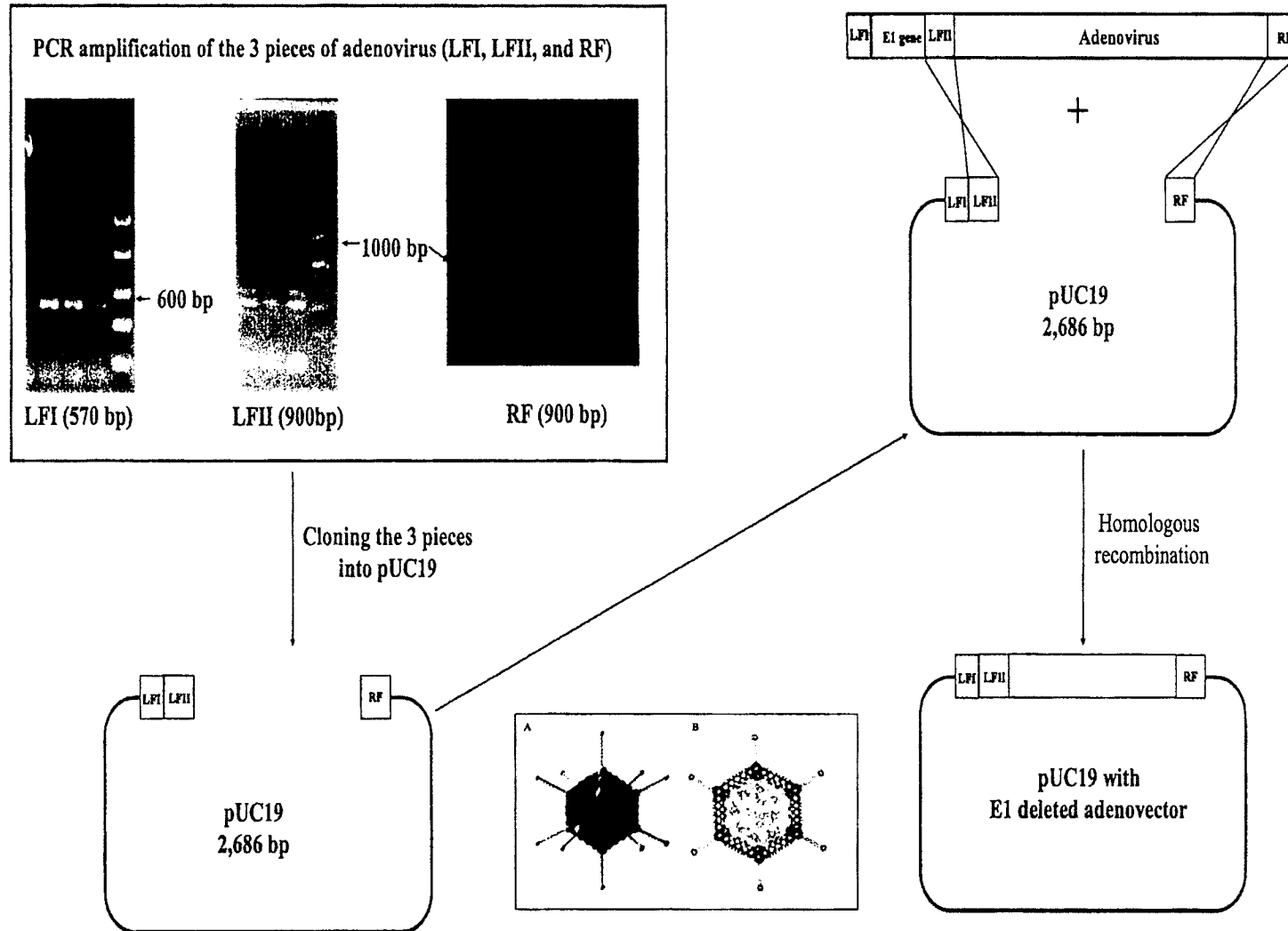
A handwritten signature in black ink, appearing to be a stylized name, located at the bottom right of the page.

Appendix 7: Infogram



Viral vector vaccines vaccine use a safe virus to insert pathogen genes in the cell to produce an immune response.
(Shutterstock)

Cloning Strategy and Progress



Appendix 8 A

Appendix 8 B

Appendix 9: Tables Detailing Equipment Procured

Table 10: List of projects which received equipment and the equipment cost in FY 2019/20

S/N	PROJECT	P.I / INSTITUTION	EQUIPMENT COST AMOUNT
1	The PCR and anti-body diagnostic kits	Prof. Joloba Moses Makerere University Biomedical Research Centre Makerere University, Kampala	3,626,552,136* (USD 961,843)
2	Inactivated Covid-19 Vaccine development	Dr. Serwanga Jennifer Uganda Virus Research Institute, Entebbe	951,465,500* (USD 252,350)
3	Novel Adenovector Covid-19 vaccine	Dr. Sheila Balinda Uganda Virus Research Institute, Entebbe	245,077,303* (USD 65,000)
4	COVID-19 Subunit Vaccine	Prof. Enock Matovu College of Veterinary Medicine and Biosecurity Makerere University, Kampala	315,207,116* (USD 83,600)
5	Production and Clinical trial of therapeutic herbal drugs against COVID-19	Dr. Nambatya Grace Kyeyune Natural Chemotherapeutics Research Institute Wandegeya, Kampala	119,661,501
TOTAL			5,259,849,070
*The items were costed in USD dollars and the rate used 1USD = UGX 3,770.42			

Table 11: List of projects, the beneficiaries and the equipment cost during FY 2020/21

NO	PROJECT	P.I / INSTITUTION	EQUIPMENT COST (UGX)
1	The PCR and anti-body diagnostic kits	Prof. Joloba Moses moses.joloba@case.edu 0782752582 Makerere University Biomedical Research Centre	692,807,166

2	Antibody ELISA for COVID-19 Surveillance	<p>Prof. Enock Matovu matovue@covab.mak.ac.ug 0772550226 College of Veterinary Medicine and Biosecurity Makerere University, Kampala</p>	157,043,446
3	Biomarker facility	<p>Dr. Kato Charles Drago katodrago@yahoo.com 0703320705 College of Veterinary Medicine and Biosecurity Makerere University, Kampala</p>	1,326,974,792
4	COVID-19 Subunit Vaccine	<p>Prof. Enock Matovu matovue@covab.mak.ac.ug 0772550226 College of Veterinary Medicine and Biosecurity Makerere University, Kampala</p>	968,647,424
5	Establishing Diagnostics, Vaccines & Therapeutics manufacturing capacity in Uganda	<p>Prof Vinand Nantulya vnatulya@gmail.com 0757766046 Zygen Biotech LTD, Kampala Uganda</p>	581,908,950
6	Identification and optimization of available drug molecules for clinical treatment of COVID-19.	<p>Dr. Jackson Mukonzo mukojack@yahoo.co.uk 0758113468 Makerere University Biomedical Research Centre</p>	956,295,824
7	Novel Adenovector Covid-19 vaccine	<p>Dr. Sheila Balinda sbalinda@gmail.com 0754660098</p>	263,079,210

		Uganda Virus Research Institute, Entebbe	
8	PCR based Diagnostic Assays	Dr. Cissy Kityo ckityo@jcrc.org.ug 0752769168 Joint Clinical Research Center, Lubowa	1,341,047,018
9	Laboratory animal House	Prof. David Kabasa kabasajd@yahoo.com 0772499027 College of Veterinary Medicine and Biosecurity Makerere University, Kampala	1,202,400,210
10	Evaluation of the Anti-SARS-CoV-2 Activity of T. Linearis, Z. Chalybeum, A. Coriaria & Formulation of Herbal Product(S) for Mgt of Covid-19	Dr. Samuel Obakiro sobakiro@gmail.com 0704946479 Busitema University, Tororo	340,629,640
11	Immune Therapy -Convalescent plasma	Dr. Cissy Kityo ckityo@jcrc.org.ug 0752769168 Joint Clinical Research Center, Lubowa	633,021,396
12	Nano Therapeutic & Vaccine Adjuvant	Prof. John Baptist Kirabira kirabirajb@gmail.com 0772422738/ 0703888093 MAPRONANO ACE Makerere University, Kampala	2,450,500,000

13	Self-amplifying RNA	<p>Prof. Pontiano Kaleebu Pontiano.kaleebu@mrcuganda.org 0772500905</p> <p>Uganda Virus Research Institute, Entebbe</p>	1,198,927,151
14	Inactivated Covid-19 Vaccine development	<p>Dr. Serwanga Jennifer jennifer.serwanga@mrcuganda.org 0772402971</p> <p>Uganda Virus Research Institute, Entebbe</p>	1,452,022,050
15	Production and Clinical trial of therapeutic herbal drugs against COVID-19	<p>Dr. Nambatya Grace Kyeyune gnkyeyune@gmail.com 0772867510</p> <p>Natural Chemotherapeutics Research Institute Wandegeya, Kampala</p>	861,906,786
16	Matooke Starch as a Pharmaceutical Excipient in Selected Medicinal Formulations for use in the treatment of Covid-19	<p>Rev. Florence Isabirye Muranga floriemura@gmail.com 0772363271 PIBID/BIRDC Bushenyi Uganda</p>	460,287,200
17	Saliva Diagnostic Kit	<p>Prof. Charles Ibingira cibingira@gmail.com 0772437351</p> <p>MAPRONANO ACE/ College of Health Science Makerere University, Kampala</p>	935,026,451
Other Costs*			12,573,800

TOTAL	15,835,098,514
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****The other costs involved in the procurement process include:***

Freight charges by Africa Biosystems - UGX 2,233,000

Freight charges handling and Insurance by Palin corporation - UGX 10,340,880

The above two suppliers charged freight, handling and insurance separately.

Table 12: List of equipment sourced internationally for the COVID projects under PRESIDE in the FY 2019/20

PROJECT NAME	PI	LOCATION	EQUIPMENT	QTY	COST (USD)	SOURCE	STATUS
The PCR and anti-body diagnostic kits	Prof. Joloba Moses moses.joloba@case.edu 0782752582	Makerere University Biomedical Research Centre Makerere University P.O. Box 7062, Kampala Uganda	Water purification systems	1	29,072.55	Micro haem Scientifics and Medical Supplies	DELIVERED
			HPLC purification systeem	1	150,000		
			ISS-4075R stackable refrigerated incubator shaker	1	21,594.87		
			MaxQ™ 4000 Benchtop Orbital Shakers	2	103,593.60		
			Antigen/peptide synthesizer	1	85,989		

			<i>SL 16R Centrifuge (Thermo Fisher Scientific)</i>	<i>1</i>	<i>25,396.23</i>		<i>AT THE SUPPLIER'S WAREHOUSE</i>
			<i>Eppendorf 5417R Refrigerated Micro Centrifuge</i>	<i>4</i>	<i>29,238</i>		
			<i>Microvolume Nanodrop Spectrophotometer with cuvette capability</i>	<i>1</i>	<i>29,750</i>		
			<i>HERAUS multifuge X3FR</i>	<i>1</i>	<i>29,966.26</i>		
			<i>Antigen/peptide synthesizer</i>	<i>1</i>	<i>85,989</i>		
			<i>DNA Synthesizer (LABX) (Biolytic)</i>	<i>1</i>	<i>213,960.01</i>		
			<i>Twin Plate 96-Well Heated Evaporator 240VAC</i>	<i>1</i>	<i>32,355.75</i>		
			<i>Vacuum Manifold</i>	<i>1</i>	<i>8,609.96</i>		
			<i>Vacuum Manifold Trap</i>	<i>1</i>	<i>4,147.50</i>		
			<i>Heated Pressure Chamber, 1 Gallon 220 VAC 130psi</i>	<i>1</i>	<i>38,325</i>		
			<i>4 Units - Deep Well Collection Plate, 96 position.</i>	<i>1</i>	<i>2,984</i>		

			<i>Biolytic Universal CPG Frit Column, 25nmol, 1000A - Pack of 500</i>	<i>1</i>	<i>6,055.71</i>		
			<i>Biolytic Universal CPG Frit Column, 50nmol, 1000A - Pack of 500</i>	<i>1</i>	<i>2,571.43</i>		
			<i>Biolytic Universal CPG Frit Column, 100nmol, 1000A - Pack of 500</i>	<i>1</i>	<i>2,742.85</i>		
			<i>Biolytic Universal CPG Frit Column, 200nmol, 1000A - Pack of 500</i>	<i>1</i>	<i>2,914.28</i>		
			<i>Biolytic Universal CPG Frit Column, 500nmol, 1000A</i>	<i>1</i>	<i>4,071.42</i>		
			<i>Biolytic Universal CPG Frit Column, 1000nmol, 1000A</i>	<i>1</i>	<i>11,786</i>		
			<i>Biolytic Universal CPG Frit 96-Well Plates, 25nmol, 1000A</i>	<i>1</i>	<i>4,732</i>		
			<i>Biolytic Universal CPG Frit 96-Well Plates, 50nmol, 1000A</i>	<i>1</i>	<i>12,694.25</i>		
			<i>Biolytic Universal CPG Frit 96-Well Plates, 100nmol, 1000A</i>	<i>1</i>	<i>10,105.68</i>		

			Biolytic Universal CPG Frit 96-Well Plates, 200nmol, 1000A	1	13,259.97		
			Biolytic Universal CPG Frit 96-Well Plates, 500nmol, 500A	1	31,962.80		
			Biolytic Universal CPG Frit 96-Well Plates, 1000nmol, 500A	1	18,964		
			Enzyme packaging Unit *	1	35,000		
COVID-19 Subunit Vaccine	Prof. Enock Matovu <a href="mailto:matovue@cova
b.mak.ac.ug">matovue@cova b.mak.ac.ug 0772550226	College of Veterinary Medicine Makerere University P.O. Box 7062, Kampala Uganda	VWR Orbital Shaker incubator – Model 3500I R	1	USD 18600	Micro haem Scientifics and Medical Supplies	ALL ITEMS DELIVERED
			Applied Biosystems Veriti 96-well Fast Thermo Cyclor 0.2mL	1	USD 65000		
Novel Adenovector Covid-19 vaccine	Dr. Sheila Balinda <a href="mailto:sbalinda@gma
il.com">sbalinda@gma il.com 0754660098	Uganda Virus Research Institute Entebbe Uganda	Upright laboratory Control Plus Fridge-Freezer Combi 263L	1	USD 13500	Micro haem Scientifics and Medical Supplies	ALL ITEMS DELIVERED
			Gel electrophoresis tank	1	USD 17000		
			Autoclave Pressure Steam sterilizer	1	USD 35000		
Inactivated Covid-19	Dr. Serwanga Jennifer Jennifer.serw	Uganda Virus Research Institute Entebbe Uganda	Biosafety cabinet Class III- BMB-111Laminar-S PROTECT 1E-C.001-12.0	1	USD 150000	Micro haem Scientifics and	ALL ITEMS DELIVERED

Vaccine development	anga@mrcuganda.org 0772402971		VICTOR Nivo Multimode Microplate Reader, plus computer	1	USD 27850.02	Medical Supplies	
			BioStack4 Microplate Stacker	1	USD 32000		
			BioTek; EL405TS Select; deep well plate washer	1	USD 22500		
TOTAL USD					1,362,293 (UGX 5,140,187,569)		

*** Enzyme packaging Unit**

During servicing of the contract, the Principal Investigator, Prof. Moses Jooloba noted that the model for the Enzyme Packaging Machine specified initially and costing USD 35,000 (United States Dollars: Thirty-Five Thousand Only) would not perform the required tasks. This led to a change in the model which is quoted at USD 258,762 by the supplier: Micro Heam Scientifics and Medical Supplies LTD. The Ministry varied the contract to enable the supplier avail the Enzyme Packaging Machine with a top up fund of UGX. 791,690,094.58 (shs. Seven Hundred Ninety One Million Six Hundred Ninety Thousand Ninety Four and Cents: Fifty Eight Only), excluding VAT. The supplier was paid UGX 692,807,166 during the FY 2020/21 and a balance of UGX 98,882,928 has not been paid yet to the Supplier.

Table 13: List of equipment sourced locally for the COVID project under PRESIDE in the FY 2019/20

PROJECT NAME	PI	LOCATION	EQUIPMENT	QTY	SOURCE	STATUS
Production and Clinical trial of therapeutic herbal drugs against COVID-19	Dr. Nambatya Grace Kyeyune gnkyeyune@gmail.com 0772867510	Natural Chemotherapeutics Research Institute Wandegeya Kampala	Electric Boiling pan – 100L Boiling pan- 100L (1800W)	1	The Tamales	ALL ITEMS DELIVERED
			Fork mixer (BHY 50.01)	1		
			Grinder (water flow)	1		
			S/S work table (180 x 70cm)	1		
			Electric Grinder (LR – QS – 32)	1		
			Storage Rack (180cm x 54cm x 200cm)	1		
			Sterilizer – free stand (910L, 1800W, 220v)	1		
			S/S Sauce Pans -71ltrs	4		
			S/S Cabinet (L: 150 x W: 70, H: 180)	1		
			S/S cabinet with sliding doors MODEL:	1		
			Hand Blender	1		
			S/S trolley – 3 Level	1		
			Platform trolley, 300kg, digital	1		

			300kg weighing scale	1		
			S/s upright chiller	1		
			Food thermometer	3		
			Refractometer	2		
			Heat gun (blower)	1		
			Crown cooker	1		
			Garbage bin 660 Ltrs	1		
			Impulse sealer	1		
			Wringer + Mopping stick (yellow)	1		
			Sugar can machine	1		
			Steak knife	4		
			Dispenser	1		
			Blender	1		
TOTAL					119,661,501	

Table 14: List of equipment procured by MoSTI for the COVID projects under PRESIDE in FY 2020/21

PROJECT NAME	PI	CONTACT	EQUIPMENT	QTY	COST (UGX)	SOURCE	STATUS
The PCR and anti-body diagnostic kits	Prof. Joloba Moses moses.joloba@ase.edu 0782752582	Makerere University Biomedical Research Centre Makerere University Kampala Uganda	Enzyme packaging machine (Top up funds)	1	692,807,166	Micro haem Scientifics and Medical Supplies LTD.	AT THE SUPPLIER'S WAREHOUSE
Antibody ELISA for COVID-19 Surveillance	Prof. Enock Matovu matovue@covab.mak.ac.ug 0772550226	College of Veterinary Medicine Makerere University Kampala Uganda	4' Purifier Logic+ A2 Biosafety Cabinet	1	84,019,981	Vision Scientific and Engineering LTD Uganda	ALL ITEMS DELIVERED
			VWR® 8-Channel Pipettor; 1–20 µL	1	5,854,031.27		
			VWR® 8-Channel Pipettor, 10–100	1	5,854,031.27		
			VWR® 8-Channel Pipettor, 10–300	1	5,854,031.27		
			VWR® Single Channel Pipettor, 0.5–10	1	3,046,373.55		
			VWR Single Channel pipettor 2–20 µL	1	3,046,373.55		
			VWR Single channel pipettor, 10-100ul	1	3,046,373.55		

			Wellwash® Versa Microplate Washer, Thermo Scientific graphical user interface	1	46,322,250	Micro haem Scientifics and Medical Supplies	
Biomarker facility	Dr. Kato Charles Drago katodrago@yahoo.com 0703320705	College of Veterinary Medicine Makerere University P.O. Box 7062, Kampala Uganda	Spectrophotometer (UV/ VIS)	1	56,430,000	Vision Scientific and Engineering LTD Uganda	DELIVERED
			Computer for Spectrophotometer	1	8,550,000		
			E-Gel Imager (Invitrogen) and accessories	1	29,521,222.50	Africa Biosystems Uganda Limited	
			Desktop computer for E-Gel Imager	1	9,625,000		
			Quantstudio 7flex thermofisher and accessories	1	406,383,481.44		
			Offgel Fractionator (full components)	1	39,265,500	Medfield Solutions	
			Desktop computer for for offgel fractionator	1	16,000,000		
			Digital block heater	1	6,016,000		
			Refrigerated Centrifuge	1	49,298,570		

			pH meter (Bench top)	1	70,845,000	Palin Corporation
			Analytical balance	1	77,046,700	
			Precision balance	1	14,953,300	
			Tissue homogenizer	1	42,757,718	Science Logistics Limited
			Biological safety cabinet (class II)	1	81,527,160	Micro haem Scientifics and Medical Supplies
			Laboratory incubator	1	55,588,700	
			Speed vac protein concentrator with rotor	1	88,938,720	
			Vertical electrophoresis chamber (Biorad)	1	6,70,404	
			Laboratory freezer (Ultra low)	1	70,409,820	
			Pipettes single channel with stands	1 set	55,586,700	
			Desktop computer for offgel fractionator	1	16,000,000	

			Electrophoresis tank power supply with powerpac adaptor	1	6,70,404		NOT YET (In transit)
			Ice marker.	1	92,644,500		
			Lab refrigerator /freezer	1	55,586,700		
COVID-19 Subunit Vaccine	Prof. Enock Matovu matovue@covab.mak.ac.ug 0772550226	College of Veterinary Medicine Makerere University P.O. Box 7062, Kampala Uganda	CO2 incubator shaker; New Brunswick™ S41i	1	58,382,220	Medfield Solutions	DELIVERED
			Refrigerated Bench top centrifuge	1	52,780,000		
			Qubit fluorimeter	2	24,347,400	Africa Biosystems Uganda LTD	
			Orbital Shaker incubator and accessories	2	103,017,366.54	Vision Scientific and Engineering LTD Uganda	
			ELISA reader	1	48,840,740	Science Logistics Limited	
			Electropolator; BTX ECM630	1	111,173,400	Micro haem Scientifics and	
			SDS-PAGE Appratus	2	25,940,460		

capacity In Uganda							
Identification and optimization of available drug molecules for clinical treatment of COVID-19.	Dr. Jackson Mukonzo mukojack@yahoo.co.uk 0772593168/ 0758113468	Makerere University Biomedical Research Centre Makerere University P.O. Box 7062, Kampala Uganda	8040 Triple Quadrupole and accessories	1	956,295,824	Educational Scientific and Technical Equipment Company LTD (Kenya)	ALL ITEMS DELIVERED
			Rota Vapor. HAHANSHIN Model: HS-2005S-N(CE) plus accessories	1			
Novel Adenovector Covid-19 vaccine	Dr. Sheila Balinda sbalinda@gmail.com 0754660098	Uganda Virus Research Institute Entebbe Uganda	MaxQ™ 8000 Incubated/ Refrigerated Stackable Shakers	1	93,049,832.03	Africa Biosystems Uganda LTD	ALL ITEMS DELIVERED
			Vertiti™ 96-Well Thermal cycler	1	35,181,993		
			Atago 3810 (PAL-1) Digital Pocket Refractometer, 0-53% Brix	1	2,833,739.72	Science Logistics Limited	
			NanaDrop 2000C	1	101,626,250	Vision Scientific and Engineering LTD Uganda	
			Protein Electrophoretic Tank	1	11,117,340	Micro haem Scientifics and	

			Microbiological Incubator	1	11,117,340	Medical Supplies	
			Gel Electrophoresis Tank and accessories	1	8,152,716		
PCR based Diagnostic Assays	Dr. Cissy Kityo ckityo@jcrc.org.ug 0752769168	Joint Clinical Research Center P.O.BOX 10005 Lubowa Kampala	Refrigerated Centrifuge	1	66,704,040	Micro heam Scientifics and Medical Supplies	NOT YET DELIVERED
			Oven	1	19,270,056		DELIVERED
			Heating blocks	4	49,094,400	Vision Scientific and Engineering LTD Uganda	
			PCR Workstation	1	35,687,517.03		
			Qubit Flex Florometer	1	15,217,125	Africa Biosystems Uganda LTD	
			Thermocycler	1	17,043,180		
			SpectraMax M5e and accessories	2	USD 195,000	Medfield Solutions	
			Fishebrand Accuskan Microplate photometer	1	42,837,120	Science Logistics Limited	
			Gilson PipetMax 268	1 SET	230,361,630		
			Cap Tube Rack Decapper/ Capper	1	USD 39,500	Ketros Biosciences (Kenya)	
			FluidX Perception™ HD Whole Rack Reader	1			

Laboratory animal House	Prof. David Kabasa kabasajd@yahoo.com 0772499027	College of Veterinary Medicine Makerere University P.O. Box 7062, Kampala Uganda	Autoclave	1	77,400,000	Medfield Solutions	NOT YET DELIVERED (In transit)
			Freezer-80C	1	86,940,000		DELIVERED
			Bio safety cabinet III	1	240,000,000		
			Low centrifuge 5702	1	48,228,750		
			Ultra-centrifuge	1	56,550,000		
			Bio safety cabinet II	1	94,250,000		
			Ice maker	1	35,620,000		
			Microcentrifuge, Refrigerated; with Bio Lid	1	45,195,800		
			R Cell culture centrifuge package - 4, Refrigerated	1	47,125,000		
			High Performance Pipettor Kit, 5 Pipettors	1 set	13,490,000	Vision Scientific and Engineering LTD Uganda	
			Pipette tips sterile 20-200ul	25 Pkt	19,422,750		
			Pipette tips sterile 100-1000	25 Pkt	19,422,750		

			Tubes (15 ml)	50 Pkt	100,056,080	Micro heam Scientifics and Medical Supplies	NOT YET (Still out of stock globally)
			Tubes (50 ml)	50 Pkt	74,116,600		
			Multiwell plates	50 Pkt	74,116,600		
			Eppendorf tubes (0.5 ml)	50 Pkt	74,115,600		
			Cryo tubes (2 ml)	50 Pkt	96,350,280		
Evaluation of the Anti-SARS-CoV-2 Activity of T. Linearis, Z.Chalybeum, A. Coriaria	Dr. Samuel Obakiro sobakiro@gmail.com 0704946479	Busitema University P.O.BOX 236, Tororo, Uganda	Lyophilizer	1	199,810,000	Medfield Solutions	ALL ITEMS DELIVERED
			Heated Timed Ultrasonic bath	1	11,117,340	Micro haem Scientifics and Medical Supplies	
			Sonicator with Probe	1	48,175,140		
			Biosafety cabinet	1	81,527,160		
Immune Therapy - Convalescent plasma	Dr. Cissy Kityo ckityo@jcrc.org.ug 0752769168	Joint Clinical Research Center P.O.BOX 10005 Lubowa Kampala	Trima Accel System and accessories	1	633,021,396	Konrad Science LTD	ALL ITEMS DELIVERED
			Mirasol PRT system and accessories	1			
			Terumo Sterile Connection Device (TSCD) and accessories	1			

Nano Therapeutic & Vaccine Adjuvant	Prof. John Baptist Kirabira kirabirajb@gmail.com 0772422738/ 0703888093	MAPRONANO ACE Makerere University P.O. Box 7062, Kampala Uganda	Germini-2 High Resolution Field Emission Scanning Electron Microscope (FE-SEM) Gold and Carbon coater and accessories	1	2,450,500,000	Beautiful Engineering and Equipment LTD	DELIVERED
Self amplifying RNA	Prof. Pontiano Kaleebu Pontiano.kaleebu@mrcuganda.org 0772500905 Mr. Paul Kitandwe paul.kitandwe@mrcuganda.org 0772387424	Uganda Virus Research Institute Entebbe Uganda	Refrigerated microcentrifuge	1	50,151,480	Medfield Solutions	ALL ITEMS DELIVERED
			Underbench -80oC freezer CryoCube®	1	87,940,000		
			Lab freezer -200C	1	32,735,000		
			QIAvac 24 Plus pump	1	20,000,000		
			QIAVac 24 plus	set	12,000,000		
			QIAVac connecting system		16,000,000		
			Centrifuge 5804 R	1	49,010,000		
			Digital Dry Block Heater	1	7,524,000		
			See-Saw Rocker	1	9,425,000		
			Tube Roller	1	8,540,000		
			Electrophoresis module XCell SureLock Mini-Cell	2	6,825,793.59	Africa Biosystems Uganda LTD	

			<i>Electrotrasfer module Xcell II blot module</i>	<i>1</i>	<i>2,793,864.15</i>		
			<i>PowerPac Universal Power Supply</i>	<i>1</i>	<i>3,761,673.30</i>		
			<i>mySPIN™ 6 Mini Centrifuge</i>	<i>2</i>	<i>7,411,560</i>	<i>Micro haem Scientifics and Medical Supplies</i>	
			<i>Chromatography System NGC Quest 10</i>	<i>1 set</i>	<i>277,933,500</i>		
			<i>NGC fraction collector</i>		<i>81,527,160</i>		
			<i>NGC Fraction Collector Rack for 1.5- 2ml capless Microtubes</i>		<i>44,469,360</i>		
			<i>Electric Pipet Controller</i>	<i>1</i>	<i>3,705,780</i>		
			<i>Vortex-Genie® 2</i>	<i>2</i>	<i>8,893,872</i>		
			<i>Lab fridge, 400- 500Liter capacity</i>	<i>1</i>	<i>39,275,000</i>		
			<i>Computer for NGC system</i>	<i>1</i>	<i>18,528,900</i>		
			<i>Pipette 0.2-2.0ul</i>	<i>2</i>	<i>7,411,560</i>		
			<i>Pipette 2-20ul</i>	<i>2</i>	<i>7,411,560</i>		

			Pipette 20-200ul	2	7,411,560	Vision Scientific and Engineering LTD Uganda	
			Pipette 100-1000ul	2	7,411,560		
			Pipette stand for 6 manual pipettes	1	1,432,600		
			NanoDrop One Microvolume UV-Vis	1	93,016,875		
			UV Cabinet/PCR Workstation (RNA hood), large	1	52,908,179.60	Science Logistics LTD	
			Lonza FlashGel Device Pack	1	27,751,295		
			FlashGel™ System for RNA Starter Pack,		53,432,255		
			FlashGel™ RNA Cassettes,		4,779,549		
			biostep - Chemiluminescence/ Fluorescence Imager Calvin S	1	132,898,339		
			Desktop computer for biostep	1	14,609,875	CLS Limited	
Inactivated Covid-19 Vaccine development	Dr. Serwanga Jennifer jennifer.serwanga@mrcuganda.ug	Uganda Virus Research Institute Entebbe Uganda	Luminex 200 System and accessories	1	423,720,000	Kobian Scientific Uganda Limited	ALL ITEMS DELIVERED

	<u>org</u> 0772402971		SpectraMax® MiniMax™ 300 Imaging Cytometer,	1		Medfield Solutions	
			New Brunswick™ S41i Incubator Shakers and accessories	1	58,382,220		
			Eppendorf CryoCube F740hi Freezer Upright	1	118,560,000		
			MVE Cryoshipper- IATA /UN Cryoshipper	1	49,311,600		
			Micro-biological Safety cabinet (Class II	1	94,438,500		
			Optima XPN-100-IVD and rotors	1	138,180,000		
			Taylor Wharton Liquid nitrogen system	1	51,880,920	Micro haem Scientifics and Medical Supplies	
			Precision Circulating Water bath	1	25,940,460		
Production and Clinical trial of	Dr. Nambatya Grace Kyeyune	Natural Chemotherapeutics	Lab heating mantles 50ml	5	17,428,500	Vision Scientific and	ALL ITEMS DELIVERED

		Lab heating mantles 100ml	5	18,594,500	
		Lab heating mantles 250ml	5	18,594,500	
		Lab heating mantles 2,000ml	5	28,597,500	
		Lab heating mantles 1,000ml	5	23,442,500	
		Lab heating mantles 10,000ml	5	23,750,000	
		Lab heating mantles 20,000ml	5	23,750,000	
		Test tube racks, Nylon glass fibre reinforced, 212-0429, 24	10	1,105,000	
		Test tube racks, Nylon , glass fibre reinforced, 20 (4X5, 20mm)	10	896,000	
		Freeze dryer. 12L (before defrosting),	1	314,418,000	Medfield Solutions

		Lab heating mantles 100ml	5	18,594,500	
		Lab heating mantles 250ml	5	18,594,500	
		Lab heating mantles 2,000ml	5	28,597,500	
		Lab heating mantles 1,000ml	5	23,442,500	
		Lab heating mantles 10,000ml	5	23,750,000	
		Lab heating mantles 20,000ml	5	23,750,000	
		Test tube racks, Nylon glass fibre reinforced, 212-0429, 24	10	1,105,000	
		Test tube racks, Nylon , glass fibre reinforced, 20 (4X5, 20mm)	10	896,000	
		Freeze dryer. 12L (before defrosting),	1	314,418,000	Medfield Solutions

therapeutic herbal drugs against COVID-19	gnkyeyune@gmail.com 0772867510	Research Institute Wandegeya Kampala	Lab heating mantles 500ml	5	20,988,000	Engineering LTD Uganda
			Lab heating mantles 100ml	5	18,594,500	
			Lab heating mantles 250ml	5	18,594,500	
			Lab heating mantles 2,000ml	5	28,597,500	
			Lab heating mantles 1,000ml	5	23,442,500	
			Lab heating mantles 10,000ml	5	23,750,000	
			Lab heating mantles 20,000ml	5	23,750,000	
			Test tube racks, Nylon glass fibre reinforced, 212-0429, 24	10	1,105,000	
			Test tube racks, Nylon , glass fibre reinforced, 20 (4X5, 20mm)	10	896,000	
			Freeze dryer. 12L (before defrosting),	1	314,418,000	Medfield Solutions

			Water purification/ distillation system;	1	171,158,000	Micro heam Scientifics and Medical Supplies	
			Laboratory freezer		99,528,000		
			pH meter, Desk top type	1	7,790,000		
			Fume hood, dustless	1	32,573,806.		
			Laboratory Refrigeration	1	59,292,480		
Matooke Starch as a Pharmaceutical excipient in Selected Medicinal Formulations for use in the treatment of Covid-19	Rev. Prof. Florence Isabirye Muranga floriemura@gmail.com 0772363271	PIBID/ BIRDC Bushenyi Uganda	pH meters	2	17,903,600	Pallin Corporation	ALL ITEMS DELIVERED
			Analytical balance	1	61,253,900		
			Dispensing balances	2	8,816,400		
			Checking balance	1	14,953,300		
			Tablet hardness tester	1	165,740,000	Kobian Scientific Uganda Limited	
			Disintegration tester	1	191,620,000		
Saliva Diagnostic Kit	Prof. Charles Ibingira cibingira@gmail.com 0772437351	MAPRONANO ACE/ College of Health Science Makerere University P.O. Box 7062, Kampala Uganda	Eppendorf BioSpectrometer® basic,	1	60,466,065	Medfield Solutions	ALL ITEMS DELIVERED
			Circulating water bath 39L	1	27,814,389		
			Freezer (-80)	1	113,236,449		

			Refrigerator (-20 and 4°C)	1	9,161,525		
			Innova-44 Incubator Shaker	1	152,374,484		
			ELISA Plate Washer	1	161,426,070		
			Centrifuge MiniSpin® plus, non-refrigerated	1	21,987,660		
			ChemiDoc MP Imaging systems (Accessories)	1	262,202,858.38	Micro haem Scientifics and Medical Supplies	
			GelDoc Go Imaging System	1	89,782,949		
			Agarose gel Apparatus	1	5,820,591.96		
			SDS-PAGE Apparatus	1	8,443,261.85		
			Western Blotting Aparatus	1	8,495,665.78		
			Trans-Blot Turbo Starter System	1	13,814,480.62		

This Memorandum of Understanding ("MOU") is made and entered into as of
7th day of SEP. 2020

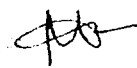
BETWEEN: The Ministry of Science, Technology and Innovation ("MOSTI"),
of the Republic of Uganda, with its address and head office
located at:
Rumee Building, PLOT 19, Lumumba Avenue, P.O BOX 7466
Kampala, Uganda.

AND: The Presidential Scientific Initiative on Epidemics ("PRESIDE")
Located at:
P. O. BOX 32, PLOT 32 Martyrs Garden Road Ntinda, Kampala,
Uganda.

MOSTI and PRESIDE are hereinafter referred to individually as a "Party" and jointly
as the "Parties;"

1. PURPOSE AND SCOPE

- 1.1. The purpose of this MOU is to clearly identify the roles and responsibilities of each party as they relate to the management of COVID-19 funds. In particular, this MOU is intended to provide a framework of cooperation, and facilitate and strengthen collaboration between the Parties, on a non-exclusive basis, in areas of common interest, particularly with regard to projects relating to COVID-19 and other Epidemics research and development.
- 1.2. MOSTI as the legal accounting entity is holding funding in the sum of **UGX. 31,032,513,632 (Thirty billion, thirty-two million, five hundred thirteen thousand, six hundred thirty-two shillings)** which it has received for purposes of financing projects related to the COVID-19 pandemic. This funding which is being appropriated under MOSTI, has been earmarked and is to be utilised for procurement of equipment and financing projects that will be approved by PRESIDE as per the cabinet directive and guidance given by Permanent Secretary/Secretary to The Treasury in a letter dated 4th August, 2020.



3. AREAS OF CO-OPERATION OF PARTIES UNDER THIS MOU

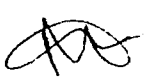
NOW, **THEREFORE**, the Parties agree to cooperate as follows:

- 3.1 MOSTI and PRESIDE will work together to ensure that projects that are approved for funding receive their funding on time and within the approved budget limits and framework.
- 3.2 The Parties will ensure that each project is subjected to quality assurance, monitoring and evaluation. MOSTI will work with PRESIDE to ensure that there are proper monitoring and evaluation tools that will guide the parties in ensuring value for money on each project.
- 3.3 The Parties will share relevant information that will enable each of them to perform their tasks in an efficient and timely manner.
- 3.4 Document and track the performance of each project through Supervision, monitoring, learning and evaluation.
- 3.5 Assist in forming proper structure through which funded projects will implement their proposals and ideas.

4. SPECIFIC ROLES OF MOSTI

MOSTI shall undertake the following specific roles:

- 4.1 MOSTI will hold and keep as earmarked the funding described in section 1 (1.1 to 1.4) above for purposes of funding research, development and innovation projects relating to COVID-19.
- 4.2 MOSTI will release funding on a project by project basis to researchers whose projects will have been approved by PRESIDE in accordance with grant agreements that will have been communicated to MOSTI upon approval.
- 4.3 MOSTI will check to ensure that all supporting documentations as set out below have been provided before releasing the funding. Supporting documentation necessary for funding that MOSTI will check for will include:
 - 4.3.1 A project implementation schedule clearly showing milestones for funding and tracking progress at each phase of the project;
 - 4.3.2 A payment schedule pegged to the milestones on the basis of which funding will be truncated;
 - 4.3.3 A clearance certificate for each phase of the project that will indicate PRSIDE's approval of disbursements before the release of funds at each stage;



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- 5.8 To undertake project appraisal(s) and review project performance/progress reports at each stage of funding and evaluation.
- 5.9 To submit to MOSTI consolidated cumulative project progress reports on quarterly basis.
- 5.10 To account to MOSTI for all the monies advanced by MOSTI as required by the relevant laws of Uganda.

6 UNDERSTANDING

It is mutually understood and agreed by and between parties that aspects relating to consultation and exchange of information, intellectual property, modification, duration, termination, arbitration, representations and grant governance, of this MOU will be addressed as follows:

6.1 Consultation and Exchange of Information

- 6.1.1 The Parties will, on a regular basis, keep each other informed of and consult on matters of common interest, which in their opinion are likely to lead to mutual collaboration.
- 6.1.2 Consultation and exchange of information and documents under this MOU will be without prejudice to arrangements, which may be required to safeguard the confidential and restricted character of certain information and documents. Such arrangements will survive the termination of this MOU and of any agreements signed by the Parties within the scope of this collaboration.
- 6.1.3 The Parties will, at such intervals as deemed appropriate, convene meetings to review the progress of activities being carried out under the present MOU and to plan future activities.
- 6.1.4 The Parties may invite each other to send observers to meetings or conferences convened by them or under their auspices in which, in the opinion of either Party, the other may have an interest. Invitations will be subject to the procedures applicable to such meetings or conferences.

6.2 Term (duration), Termination, Renewal, Amendment (modification)

- 6.2.1 The cooperation under this MOU will have an initial term of 1 [one] year commencing on the date from which both parties will sign the MOU, unless terminated earlier by either Party upon two months' notice in writing to the other Party. The Parties may agree to extend this MOU in writing for subsequent periods as the circumstances may from time to time require.

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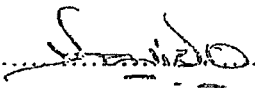
document all aspects of their work to ensure the proper performance of their agreed corporation areas and specific roles.

6.7 Effectiveness date and signature

This MOU shall become effective on the date ("Effective Date") upon which both parties; MOSTI and Preside append signatures of the authorised officials.

IN WITNESS WHEREOF, the duly authorized representatives of the Parties affix their signature below:

FOR MOSTI:

.....

Name: MR. DAVID O. O. OBONG

Title: PERMANENT SECRETARY

FOR PRESIDE:

.....

Name: DR. MONICA MUSENERO

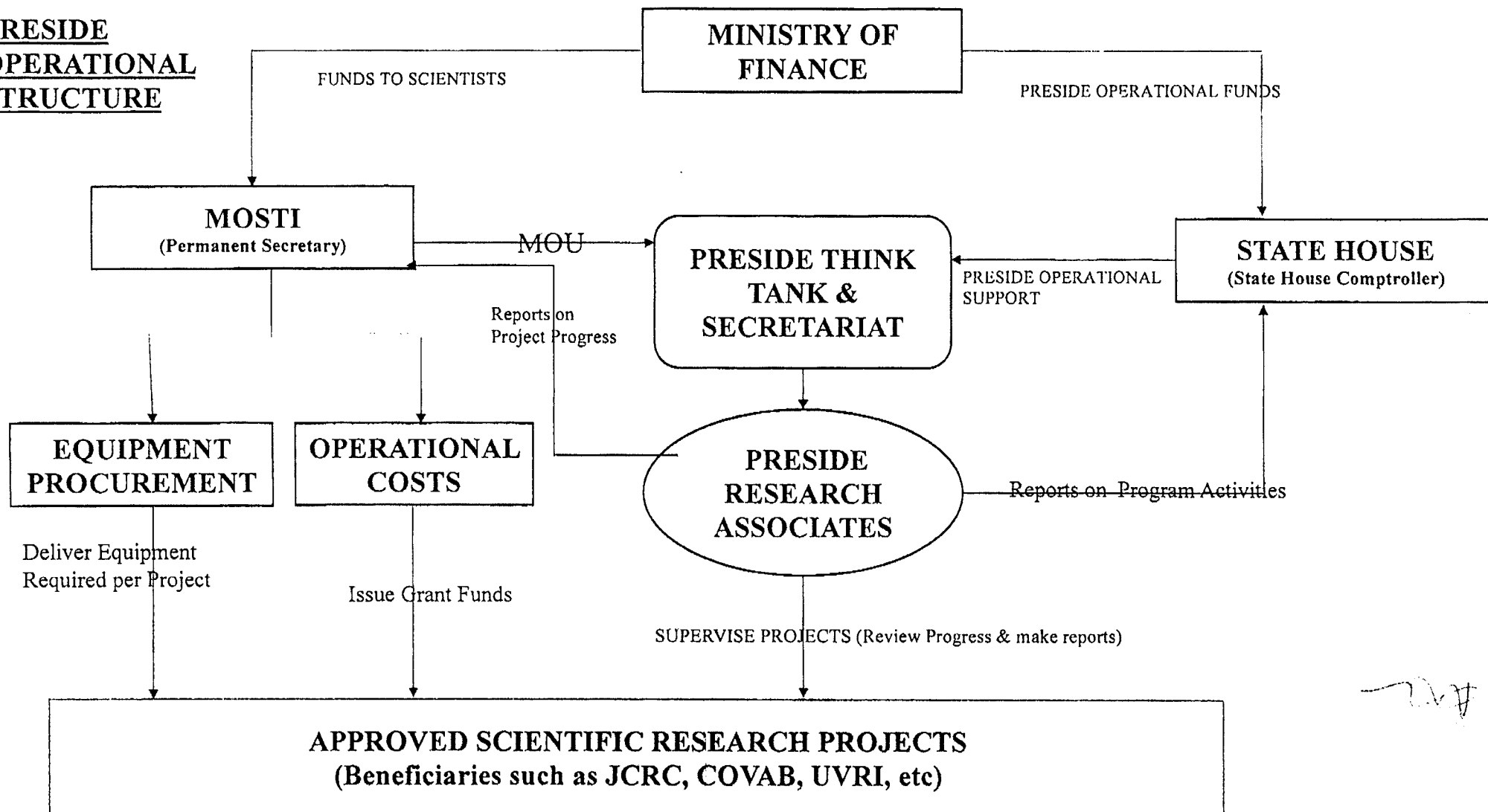
Title: SENIOR PRESIDENTIAL
ADVISOR ON EPIDEMICS AND
CHAIR OF THE PRESIDENTIAL
SCIENTIFIC INITIATIVE ON
EPIDEMICS (PRESIDE)

Date.....^{7th} September 2020

.....



**PRESIDE
OPERATIONAL
STRUCTURE**



MINUTES OF THE COVID-19 VACCINE TECHNICAL DESIGN FACE-TO-FACE BRAINSTORMING MEETING

DATE OF MEETING: 28TH APRIL, 2020

VENUE: MAKERERE UNIVERSITY COLLEGE OF HEALTH SCIENCES – BOARD ROOM

AGENDA:

TIME	ACTIVITY	FACILITATOR
08:45 – 09:00 AM	Arrival and Registration of participants	David
09:00 – 09:05 AM	Call meeting to order and Prayer - Volunteer	Chair/Bernard
09:05 – 09:15 AM	Self-Introductions	Chair
09:15 – 09:20 AM	Welcome remarks from Chair	Dr. Bernard Bagaya
09:20 – 09:25 AM	Welcome remarks by the Principal College of Health Sciences	Prof. Charles Ibingira
09:25 – 09:35 AM	Remarks by Senior Presidential Advisor on epidemics	Dr. Monica Musenero
09:35 – 09:50 AM	Reactions to Remarks by Senior Presidential Advisor	Chair
09:50 – 10:10 AM	Presentation – Available Coronavirus Vaccines in animals and humans (design, delivery modes, adjuvants, efficacy)	Dr. Kato Charles Drago
10:10 – 10:35 AM	Questions to presentation	
10:35 – 11:00 AM	Break	Carthy
11:00 – 02:00 PM	UVRI Concept	Prof. Kaleebu Pontiano
		Matthew
		Paul Kato
		Prof. Nantulya Vinand
	Presentation on Epitope mapping analysis	Dr. Julius Mulindwa
	Discussion and conclusion on the technical design of COVID-19 vaccine	Chair
02:00 – 03:00 PM	Lunch Break	Carthy

	NAME	JOB TITLE/INSTITUTION	CONTACT: (Tel & Email)
12.	Saimo-Kahwa Margaret	Senior lecturer - COVAB	0772592736 msaimok@gmail.com
13.	Dr. David Serukka	Research Associate SPA Secretariat	0772628393 davidserukka@gmail.com
14.	Dr. Milton Mutto	Epidemiologist - MUSPH	0772850022 Milton.mutto@gmail.com
15.	Carthy Muwumuza Namubiru	Administrator - SPA	0788672410 cmuwumuza@gmail.com
16.	Dr. Jennifer Serwanga	Senior Immunologist - MRC/UVRI	0772402971 Jennifer.serwanga@mrcuganda.org
17.	Brian Bigirwa	COO - Brentec	0757766048 bbgirwa@brentecvaccine.com
18.	Brain Mujuni	Researcher/Manager - MAPRONANO	0785669079 bmujuni7@gmail.com
19.	Brenda Okech	Director - UVRI-IAVI	0781160268 bokech@iavi.or.ug
20.	Dr. Anne Wajja	Senior Scientist - MRC/UVRI & LSHTM	0778103960 Anne.wajja@mrcuganda.org
21.	Dr. Sheila Balinda	Scientist - MRC/UVRI & LSHTM	0754660098 sbalinda@gmail.com
22.	Mary Nantongo	Lab technician - Mak- CHS	0785026094 nantongm@gmail.com
23.	Fred Kyeyune	Senior Scientist - JCRC/CHS	0786224191/0757588252 kvefremt@gmail.com

DISCUSSION:

AGENDA ITEM	PRESENTATION/DISCUSSION	PERSON RESPONSIBLE
Min 1: Opening prayer		Chair - Bernard
Min 2: Self-introductions		Chair
	The chairman welcomed all members present and requested them to introduce themselves	Chair
Min 3: Welcome remarks by the Principal College of Health Sciences		Prof. Ibingira
	The Principal was excited to host the <u>Vaccine technical design team meeting</u> . • He observed that there is a lot of capacity in the Medical school and that the College of health science had set up a team on 9 th March under the Dept. of immunology	

AGENDA ITEM	PRESENTATION/DISCUSSION	PERSON RESPONSIBLE
	<p>2. Travels via borders, any infected persons coming in?</p> <p>3. How protective mask Vs COVID-19?</p> <ul style="list-style-type: none"> • She reported that Nytil textiles and Luwero Industries are to start producing masks, however, there is a challenge of validation/quality assurance. <p>4. Possibility of Vaccine production</p> <p>She further informed the scientific team that this was our time as Ugandans, and as Africa and that we should use it well. She challenged the team to use the capacity that we have and wondered what was stopping us?</p> <p>She informed the meeting that the President was told that we can make a vaccine if we change our mind-sets.</p> <p>We are working closely with MOH on this.</p> <p>She concluded by requesting all members to sign a Non-disclosure/Confidentiality Agreement that will help protect people's ideas (see attached).</p>	David
	<p>Reactions to Remarks by Senior Presidential Advisor</p> <ul style="list-style-type: none"> • Members wished to know who was making what in the country • They were advised by Prof. Nantulya to throw away the box, and not just think outside the box • It was pointed out by members that Africa is not well funded for research. For example, UVRI can produce vaccines but gets most of its funding from outside. • Dr. Monica re-assured members that under His leadership, we can do it because HE is willing to finance science/research. 	Dr. Monica
Min 5: PRESENTATIONS		Chair
5a	<p>Presentation: Science Discourse (Vaccine Value Chain)</p> <p>How does vaccine innovation take place?</p> <ul style="list-style-type: none"> • Most literature talks about vaccine value chain • We need to build the value chain 	Dr. Monica

AGENDA ITEM	PRESENTATION/DISCUSSION	PERSON RESPONSIBLE
	<ul style="list-style-type: none"> • Antigen-dependent enhancement (ADE), enhances infectivity <p>Proposed Strategies</p> <ol style="list-style-type: none"> 1. SARS and MERS can help to direct the vaccine development efforts for COVID-19 2. Exploiting T cell responses for coronavirus vaccination should also be considered (along with B cell responses) long term persistence 3. Adjuvantation, tailoring of the S glycoprotein, different routes of vaccination 4. Unexplored vaccine platforms. N protein more conserved, cross-protection (SARS & MERS), long term T cell immunity <p>See details in the attached presentation</p>	
5c	<p>UVRI CONCEPT: SARS-CoV-2/COVID-19 vaccine development at UVRI</p> <p>Goal: To contribute to the development of an effective SARS-CoV-2/COVID-19 vaccine (hereafter referred to as COVID-19 vaccine) for Uganda.</p> <p>Steps/Approach for attaining the above goal</p> <ol style="list-style-type: none"> 1. Characterize SARS-CoV-2 viruses circulating in Uganda and compare to those isolated elsewhere, globally, and to proposed vaccine sequences/antigens 2. Identify vaccine constructs that can be developed in Uganda 3. Implement Good Manufacturing Practice (GMP) production of a self-amplifying RNA COVID-19 vaccine in Uganda 4. Establish a specific pathogen-free (SPF) animal facility in which to test the safety and immunogenicity of the candidate vaccine 5. Build collaborations for candidate vaccine testing in primates (for example with Kenya) and challenge studies in animals 	Prof. Kaleebu

AGENDA ITEM	PRESENTATION/DISCUSSION	PERSON RESPONSIBLE
	<p>5. Virtually no anti-vector immunity enabling sustained immune responses in face of multiple vaccinations</p> <p>6. Multivalent vaccine construction enables fewer total vaccinations</p> <p>7. Ability to Differentiate between Infected from Vaccination Animals (DIVA</p> <p>Limitations of current RVF vaccines?</p> <p>Questions:</p> <ol style="list-style-type: none"> 1. Are there any clinical trials anywhere? 2. How long does the RNA/DNA cell cast last? <ul style="list-style-type: none"> • Not long 3. Can this technology be used also for others? <p>See details in the attached presentation</p>	
5f	<p>Presentation: Experience with the Vaccine Industry</p> <ul style="list-style-type: none"> • The Anti-tick vaccination has been going on • The question is what needs to be done to facilitate the construction of a mega factory to produce vaccines? • As the potential vaccine candidates are pursued, we need to be looking downstream at the uptake by industry. • Let us take advantage of the opportunity presented by c-GMP certified local capacity at Brentec to take up promising candidates and turn them into final products and to fast-track regulatory approvals so that we could have a COVID-19 vaccine on the market in the shortest time possible. <p>Quality Assurance: Brian</p> <ul style="list-style-type: none"> • There should be synergy between research product and manufacturer • Systems have to be set up/in place concurrently both upstream and downstream. Caution, however, maybe that a product may not reach the stage of 	Prof. Nantulya & Brian Bigirwa

AGENDA ITEM	PRESENTATION/DISCUSSION	PERSON RESPONSIBLE
	<ul style="list-style-type: none"> • Need for validation using comprehensive multi-model analysis of motif matrices (e.g. QAM and HMM models) • Use of protein in structure for mapping analysis Recombinant protein, the peptide of ectopic expression (vector-based) vaccine? • Recombinant protein expression of subunits of S-protein and N-protein with predicted epitopes • Which expression system? (PTMs to consider, capacity) <p>See the full presentation attached.</p>	
Min 6: Strategies/Way forward		Chair
	<p>As a way forward, Dr. Monica advised that the group comes up with brief vaccine concepts and submit them by end of Thursday 30th April under the following headings. These will be done jointly as indicated below.</p> <ol style="list-style-type: none"> 1. Subunit vaccine (S-protein and N-protein?) – recombinant (Makerere – CHS & COVAB) Dr. Matovu 2. Nucleic (saRNA {Self amplifying}, mRNA, DNA) by (UVRI) 3. Viral vector (Adenovirus) (UVRI & COVAB) 4. Attenuated/killed/Inactivated – P3 lab (UVRI & COVAB)) 5. Synthetic Peptide acid (CHS) – to come later <p>She advised JCRC to negotiate for a co-owning patent for self-amplifying Nucleic acid</p> <ul style="list-style-type: none"> • One/two-pager concepts with corresponding budgets for each of the above items and submit them by end of Thursday. • Hold a zoom call meeting on Friday, 1st May 2020. • The Team was advised to do a rapid literature review to find out what is feasible? • Eddie Wampande to look into Lab Animals unit 	Dr. Monica
Min 7: Closing remarks		Chair
	Dr. Monica thanked all members for coming and requested them to be urgent about the above concepts	Dr. Monica

L.H.

MINUTES OF THE MOSTI CONCEPTS REVIEW ZOOM MEETINGS**DATE OF MEETING:** Thursday 25th & Tuesday 30th June 2020**HOST:** Dr. Musenero Monica**AGENDA FOR 25TH JUNE:**

TIME	ACTIVITY	FACILITATOR
2.30-3.00pm	Welcome remarks & Introductions	Dr. Monica
3.00-3.30pm	Development & Validation of an Antigen Agglutination test/Assay kit	Dr. Bernard Bagaya
3.30-4.00pm	Performance evaluation of the COVID-19 sniffle system to rapidly identify COVID-19 cases in Uganda	Prof Noble Banadda
4.00-4.30pm	Pre-clinical evaluation of 5 herbal drug products in Uganda for effects against COVID-19 infection	Dr. Casim Umba Tolo PHARMBIOTRAC/MUST
4.30-5.00pm	Evaluation of the anti-SARS COV-2 activity of T-Linearis, Z-Chalybeum. A-Coriaria	Dr. Samuel-Baker Obakiro Busitema University
5.00-5.15pm	Closing remarks	Dr. Monica

AGENDA FOR 30TH JUNE:

TIME	ACTIVITY/PRESENTATION	BY WHO	INSTITUTION
2.00-2.15pm	Welcome remarks & Introductions	Dr. Monica	Office of the President
2.15-2.30pm	Establishment of a high-quality biobank of samples from COVID-19 patients to facilitate research in diagnostics, treatment, vaccines, and prevention in Uganda	Prof. Joloba Moses	Mak-CHS, School of Biomedical Sciences
2.30-2.45pm	Strengthening biosecurity systems through multi-disciplinary COVID-19 novel technological innovations	Prof. David Kabasa	Makerere University COVAB
2.45-3.00pm	Lab-in-Suitcase: Scaling down nCoV-19 diagnosis in Uganda with the Oxford Nanopore MinION	Dr. Robert Ssekitoaleko	Makerere University
3.00-3.15pm	Development, testing, and deployment of an affordable, easy to use, and rapid point of care	Dr. Misaki Wayengera	Makerere University

	NAME	JOB TITLE/INSTITUTION	CONTACT: (Tel & Email)
4.	Dr. Barnard Bagaya	Lecturer Mak-CHS	0755891834 bbagaya@chs.mak.ac.ug
5.	Dr. Casim Umba Tolo	PHARMBIOTRAC/MUST	0772837055
6.	Eng. Anke Weisheit	PHARMBIOTRAC	0772788096
7.	Prof. Edward Wampande	Senior lecturer – COVAB	0752067946 ewampande@yahoo.co.uk
8.	Dr. Enock Matovu	Assoc. Prof – COVAB	0772550226 matovue@covab.mak.ac.ug
9.	Joseph Oloro	PHARMBIOTRAC/MUST	
10.	Andre Van Zyl		
11.	Prof Maud Kamatenesi Mugisha	Bishop Stuart University	
12.	Dr. Misaki Wayendera	Makerere University	
13.	Dr. David Serukka	Research Associate SPA Secretariat	0772628393 davidserukka@gmail.com
14.	Abel Wilson Walekhwa	Research Associate/SPA Secretariat	
15.	Carthy Muwumuza Namubiru	Administrator – SPA Secretariat	0788672410 cmuwumuza@gmail.com
16.	Dr. Monica Namayanja	Kampala International University	
17.	Prof Banadda Noble		
18.	Moses Andima	Busitema University	
19.	Patrick Engeu Ogwang		
20.	Prof Baruga Evarist	Medical Research Centre (MRC)	
21.	Samuel Baker Obakiro	Busitema University	
22.	Dr. Sukaka Ali	Mother Earth Organics	
23.	Yahaya Gavamukulya	Busitema University	
24.	Lydia Namuleni	Research Associate – SPA Secretariat	0750763750

AGENDA ITEM	PRESENTATION/DISCUSSION	PERSON RESPONSIBLE
	<ul style="list-style-type: none"> There was also a need for sharing concepts to align them to the President's vision of promoting local scientists. 	
Min 4: Presentations on 25th June		Dr. Monica
4a	Development and Validation of an Antigen Agglutination Test for Rapid Screening of COVID-19 in Low Laboratory Capacity and Field Settings. Members observation: Has potential, should be pursued	Dr. Bagaya Bernard Mak Univ-CHS
4b	Performance evaluation of the COVID-19 Sniffle System to rapidly identify COVID-19 cases in Uganda Members observation: Not convincing yet that can work	Prof. Banadda Noble Mak-Univ
4c	Preclinical Evaluation of 5 Herbal Drug Products in Uganda for Effects Against Corona Virus Infection. Recommendation: The concept should be refined to zero on what they want to achieve	Dr. Casim Umba Tolo PHARMBIOTRAC - MUST
4d	Evaluation of the Anti-SARS-COV-2 activity of Tephrosia-linearis, Zanthoxylum-chalybeum, Albizia-coriaria, and formulation of a herbal product for the management of COVID-19 Observation: The concept had scientific backing of the drug concoctions in the herbal products.	Dr. Samuel-Baker Obakiro – Busitema Univ
PRESENTATIONS ON 30TH JUNE 2020		
5a	Establishment of a high-quality biobank of samples from COVID-19 patients to facilitate research in diagnostics, treatment, vaccines, and prevention in Uganda. Observation: Sounded viable, for potential funding	Prof. Joloba Moses Mak-CHS, School of Biomedical Sciences
5b	Lab-in-Suitcase: Scaling down nCoV-19 diagnosis in Uganda with the Oxford Nanopore MinION Observation: No local innovation, all equipment, and consumables imported	Dr. Robert Ssekitoileko – MUK
5c	Development, testing, and deployment of an affordable, easy to use, and rapid point of care	Dr Misaki Wayengera – MUK

AGENDA ITEM	PRESENTATION/DISCUSSION	PERSON RESPONSIBLE
	Organize one-hour sessions for each of the groups (vaccines, therapeutics, diagnostics) to share the following: <ul style="list-style-type: none"> • Protocols • Workplan/milestones • Budget up to proof of concept 	Dr. Serukka
	<ul style="list-style-type: none"> • Carry out toxicology studies on the various herbal concoctions 	Prof Nantulya V

MEETINGS SCHDEULE/TIMELINE

INSTITUTION(S)	CONCEPT	CONTACT PERSON	DATE
UVRI/COVAB	Inactivated vaccine development	Dr. Jennifer Serwanga, Dr Enock Matovu	Thurs 2 nd July at 7 pm
COVAB/KIU	Subunit vaccine & Characterization of Immune response	Charles Drago & Enock Matovu, Monica Namayanja	Mon 6 th July at 7 pm
Busitema University	Evaluation of anti-COVID-19 activity in Tephrosia linearis, Zanthoxylum chalybeum & Albizia coriaria in the formulation of herbal products	Dr. Samuel Baker Obakiro	Tues 7 th July at 7 pm
PHARMBIOTRAC & Dr. Nambatya's team	Preclinical evaluation of 5 herbal drug products	Eng. Anke Weisheit & Dr Nambatya	Thurs 9 th July
JCRC, ATCG Solutions Ltd, Makerere Univ	PCR diagnostic assay, DNA nucleic test kits & Biobank of samples from COVID-19 patients	Dr. Kityo Cissy, Prof. Fred Rurangirwa, Prof Joloba Moses	TBD
Bishop Stuart University, Mother Earth	Refresher course for herbalists	Prof. Maud Kamatenesi Mugisha, Dr.	TBD

Appendix 16.

TITLE OF CONCEPT/PROJECT	PI/ INVESTIGATORS	INSTITUTION	INVENTORY NUMBER	EQUIPMENT	Catalogue number	Serial number	Vendor/Supplier	Item Description	Vendor Address	Date received	Installation	Training date	Status	Location
Inactivated Covid-19 Vaccine development	Dr. Jennifer Serwanga Prof. K. Kibuka	UVRI	1	UVRI/CoinVA C/0703	Biosafety cabinet Class III-BMB-III Laminar-S PROTECT 1E-C.001-12.0 (custom designed)	Code 342.120	342.120.99.009	Scientific laboratory Services (SLS) Carol Yeomans International Sales Coordinator Direct Dial: 01482 496652 Carol Yeomans International Sales Coordinator Pete Ball <P.Ball@scientific-labs.com>	Scientific Laboratory Supplies Limited 1482649665 Wilford Industrial Estate Ruddington Lane Wilford, NG11 7EP United Kingdom ORCHARD HOUSE THE SQUARE HESSLE HULL - EAST YORKSHIRE HU13 0AE Tel: 01482 649665	30-Mar-21	17-Apr-2021	17-Apr-21	In use	Cat 3 Laboratory
			2	UVRI/CoinVA C/0695	VICTOR Nivo Multimode Microplate Reader, with stacker plate dispenser, with Test plate for alignment and system check, with My Assays Desktop Pro analysis software, with Enhanced Security software supporting 21 CFR Part 11, with advanced time-resolved fluorescence and fluorescence polarization, plus a computer, "	Part No. HH35000 500	HH35L10180741	Sameh Kaissar Sales Manager E.Africa/Middle East HTDS International Tel. +202 22905306 Fax +202 22905307 Cell +201210784084 +201066954777 Email: Sameh.kaissar@htds.fr WebSite: www.htds.fr	HTDS International (Suisse) SA Chemin de Cyrano, 1 CH-1009 - PULLY (VD) Switzerland Phone: +41 (22) 839 66 10 Fax: +41 (22) 839 66 12 Web Site: www.htds.fr	29-Dec-20	22-Jan-2021	25-Jan-21	In use	Rabbit House Laboratory
			3	UVRI/CoinVA C/0696	BioStack4 Microplate Stacker BioTek ELx405 Select, deep well plate washer. BioTek Absorbance Reader, ELX808IU	Part No: ELX405UCW VSD 20101619 Part No: ELX808IU	20101212 2009285	Biotek Biotek	also try SLS, they can get the equipment together	04-Feb-21	25-Mar-2021	25-Mar-21	In use	Rabbit House Laboratory
			4		Micro-biological Safety cabinet (Class II), Model: SC18D. Ducted, services module with gas electric & formalin vaporizer, UV Lighting - 254nm @ 15 watt, Pre-filter for all inlet air. All models comply to BS 5726:1992, BS 5795, BSIEN 61010 and exceed BSIEN 12469:2000	SC/95210		Scientific Laboratory Services (SLS) Pete Ball <P.Ball@scientific-labs.com>		18-Oct-21	To be confirmed	To be confirmed	Not in use pending installation	UVRI STORE
			6		Luminex 200 System with xPONENT 4.3 Software; 1 pc Belyss Immunoassay Software Luminex 200 Calibration Kit (25 doses) Luminex 200 Performance Verification kit Sheath Fluid (20litres)	Millipore 40-012 Millipore 40-1222 Millipore LX2R-CAL-K25 Millipore LX2R-PVER-K25 Millipore 40-50015		KOBIAN SCIENTIFIC UGANDA LIMITED SIA AMARA PLAZA, SPRING ROAD, BUGOLOBI P. O. BOX 11780 KAMPALA UGANDA TEL AIRTEL: +256 757 473 848 MTN: +256 772 905 172 PERSONAL: +256 750 351 930	A quote was provided (Attached)	03-Aug-21	23-Nov-2021	26-Nov-21	In use	IAVI Laboratory

MIREMBE VICTOR
(ASSISTANT PHARM)

Anna Oliver Kelly
(Head of Laboratories)

