REPUBLIC OF RWANDA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

ncst
National Council for
Science and Technology

RESEARCH AND INNOVATION GRANTS AWARD LAUNCH AND SCIENTIFIC NETWORKING MEETING

University of Rwanda
GRANT WINNERS

Dr Anne Marie KAGWESAGE

Analysing the resilience of the primary and secondary education systems to mitigate the impact of COVID 19 pandemic in Rwanda.

Link to National development agenda: The study links to the overall national and global vision that quality education to all will lead to socio economic transformation. It relates to the broad theme of improving society resilience to mitigate the impact of COVID-19. Specifically, we seek to understand and contribute in building resilient primary and secondary education systems that stand the impact of COVID-19 and any other pandemic likely to interfere with the national developmental agenda.

Solution about current problem: This study explores the effects COVID-19 on the Rwandan primary and secondary educational systems, with a focus on study guided strategies to mitigate negative impacts on teaching and learning to support and build resilient, sustainable and inclusive primary and secondary educational systems, to foster socio economic development and wellbeing. As we move from the pandemic emergency to the recovery phase, research findings and recommendations are needed to guide policymakers in the setting and implementation of recovery policies.

Dr Bernard MUNYAZIKWIYE
Design and Manufacturing of a Smart COVID-19 Tracing System

The project is participatory in nature. Major stakeholders including Rwanda Biomedical Center and Rwanda National Police, will be involved in its implementation. This research project is linked with the existing National Strategy for Transformation (NST1) mainly in its priority area 3 (Establish Rwanda as a Globally Competitive Knowledge-based Economy), key strategic interventions number 16 which promotes research and development as a key to fast-tracking Rwanda's economic transformation. The project is also linked to priority area 4 (Promote industrialization) in line with key strategy 17 promoting the 'Made in Rwanda'. The finding will enhance policy formulation in the above priority area.

Dr Damien HANYURWIMFURA
Development of a Smart Wearable Device for Real-Time Risk Monitoring of Infectious Virus Spreading: Case Study of Covid-19

The project is in line with the sustainable development goal (SDG 3) about Good Health and Well-being. The project is linked with National Strategy for Transformation (NST1) on **Economic Transformation Pillar on priorities 3 and 4:**
Priority Area 3 on following key strategy: Construct and upgrade health facilities with adequate equipment. **Priority Area 4**. on the following key strategy: Continue to promote the 'Made in Rwanda' brand. Based on findings from the research, policy can be reformulated to allow Made in Rwanda technology (final product) to be acceptable on the local and international markets.

Dr Didacienne MUKANYILIGIRA
A collaborative research study to assess stakeholder needs and mitigate risk in the development of Internet of Things Remote Monitoring Solutions for high-risk cold chains, aiding the storage and delivery of temperature-sensitive vaccines in Rwanda

This research project describes the collaboration between University of Rwanda's ACEIoT, iD&D, (a social enterprise that develops impactful, Internet of Things Remote Monitoring Solutions (IoT RMS)) and RISA to prove the feasibility and impact of the IoT RMS product in Rwanda combining market and technical research to gather the data needed to find problematic areas and prove the critical need for stable cold chain in the medical industry. iD&D's solution addresses not only the monitoring of storage and transportation environments in real-time through the development of innovative cold chain IoT RMS, but also the ability to alert if there are issues, sending SMS messages to key stakeholders who could immediately pinpoint and manage breaks in the cold chain, saving precious vaccines from spoiling. This research project would help iD&D better understand Rwanda's cold chain landscape, from specific user requirements, to power and connectivity needs, through a collaborative approach involving local product testing, data collection and analysis / evaluation.

Prof David TUMUSIIME
The Use of Smartphone Technology Approach Towards Self- Management of Type 2 Diabetes in Rwanda

The use of technology with smartphone applications for self-management of type 2 diabetes is an innovative project to enhance academia – industry partnership towards home grown solutions to challenges in healthcare. The expected outcomes of the project are in line with the government program specifically the "Rwanda National Strategy for transformation (NST-1), with the agenda of improving Universal access to quality health services, disease prevention, and fighting non-communicable diseases. The project will use a trial to test the technology based approach with smartphone for self – management of type 2 diabetes specifically. The results will assist in formulation of policies and strategic guidance in scaling the smartphone technology approach to the self-management of other non-communicable diseases.

Dr Joseph NKURUNZIZA
Predicting the Infections, Evolution and Outcome of COVID-19 pandemic in Rwanda using SIR model

The rising numbers of COVID-19 infections is likely to devastate the economy and health care system in Rwanda if the spread is not controlled. Without treatment and under predictions that it will take at least a year to vaccinate 60% of the population, there is need of a reliable, country-specific forecast model to monitor and assess the impact of the policies taken to contain the spread of the COVID-19 virus and its consequences.
In addition, the research will assess the healthcare capacity in terms of availability of functional requirements in case the virus continues with its current upward trend.

Mr James NTAGANDA
Prototyping And Implementing an Integrated, Remote and Real Time Monitoring System for Biogas Plants Using Internet of Things (Iot) in Rwanda

The research project links with National Strategy for Transformation (NST1), Priority 7 Area: Sustainable Management of Natural Resources and Environment to Rwanda Transition towards a green economy which aims at halving the number of households depending on firewood for cooking from 79.9% (2016/17) to 42% by 2024, focusing on promoting use of alternative fuels such as cooking gas and biogas.
Specifically, the Project findings will Capitalise on ICT Sector Strategic Plan (2018-2024) and provide Energy sector with live data from Installed specific biogas by using IoT. This will help energy sector policy makers to make live-data-driven formulations and redesigns of biogas national initiatives as one of Primary and Social Energies development policies.