

# Integrating STI Across all Sectors to Stimulate Rwanda's Economic Growth

NCST Quarterly Newsletter - Issue No: 006 December 2022

**PREAMBLE:** The journey of Rwanda to become a knowledge based hub through utilization of science, technology, research and innovation programs continues. Engaging Rwanda Community in Diaspora is one of the key actions to reach the set target of national innovation ecosystem. This newsletter highlights the 7<sup>th</sup> NCST Council deliberations and the contribution of some of the members during its side events, including the courtesy visit to the office of H.E Paul Kagame the President of Rwanda. It also gives the overviews on the field visits done by the invited five Rwandan Scientists in Diaspora as well as their recommendations and future plans to strengthen innovation landscape in Rwanda. It also highlights the awarding ceremony for Women in Science Research and Innovation and Rwanda Innovation Challenges for Academia-Industry Research and Development Collaboration Grants.

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One of RIC-R&D Awardees being awarded by the Minister of

# Activities' Overview and Key Recommendations from the 7<sup>th</sup> NCST Council Meeting

Eugene Mutimura

National Council for Science and Technology, Rwanda

## Background

On October 6<sup>th</sup>-7<sup>th</sup>, 2022, a seventh (7<sup>th</sup>) NCST Council Meeting took place physically in Kigali, after the Councilors had held the 5<sup>th</sup> and 6<sup>th</sup> Council Meetings virtually due to COVID-19 Pandemic. The Council Meeting included diverse sideline and complementary events and activities to support integration of science, technology and innovation (STI) in national priority sectors to stimulate development. The theme of the Meeting was "Integrating STI across all sectors to stimulate Rwanda's economic growth" which is in line with Rwanda development goals and agenda.

## Proceedings

The Meeting had sideline events that included pre- and post- Meeting symposia by some NCST Councilors and Rwandan Diaspora scientists (see Annexes 1 and 2), and field visits by 5 Rwandan Diaspora scientists, researchers and innovators.

An assessment of Rwanda National Innovation System (i.e., a report to be shared soon) was done by Dr. Danica Ramljak, a World Bank Expert on technology and a presentation on "Status of ICT and Innovation Programs from the Ministry of ICT and Innovation" was done by Mr. Yves Iradukunda, the Permanent Secretary in the Ministry of ICT.

Dr. Danica Ramljak gave a preliminary presentation based on her findings on "Strategy for strengthening National Innovation System (NIS) in Rwanda in view of Global Innovation Index (GII) ranking".

## Purpose and Goals

1

**Share** updates on NCST Key progress activities, plans, challenges and opportunities for integrating Science, Technology and Innovation (STI) in national sectors to improve citizens wellbeing and stimulate industrial growth

2

**Deliberate** on national and regional STI stakeholders' roles to enable more tangible collaborations and benchmarking and exchange of best practices

4

**Shape** sustainable solutions and strategies for Rwanda to become a regional hub for R&D and innovation attracting African and global researchers and innovators.

3

**Examine** through field visits various stakeholders research and innovation projects to appreciate and propose concrete recommendations to close the identified gaps tailored for Rwanda, regional and global context



On 7<sup>th</sup> October 2022: The Council Members held a courtesy meeting with H.E., The President of The Republic of Rwanda

A key sideline event was an awarding ceremony for 5 awardees of new grant schemes under "Women in Science (WIS)" and 10 awardees of new grants under 'Rwanda Innovation Challenge for Academia and Industry Collaborations (RIC-R&D)'. The meeting was also an opportunity to showcase research and innovation output through poster presentations by various awardees through NCST funding scheme.

On 7<sup>th</sup> October 2022 the Council members held a courtesy meeting with The President of The Republic of Rwanda, H.E. Paul Kagame. The goal of the meeting was that Council members provide an update of key achievements by NCST, and to obtain guidance from H.E., The President on how to leverage for STI and R&D Programs for national development. The Council members expressed gratitude to H.E., The President for funding research and innovation growth through National Research and Innovation Fund (NRIF) that was launched in June 2018, and is currently funding 106 projects with ~ Frw 4.5 billion funding commitment.

## Key Recommendations



Received an update on key achievements, adopted and approved action plan for 2023/24.



The Council approved internal rules and regulations.



The NCST Secretariat to develop on-line tools on standardized metrics to measure national Status of STI and R&D survey for international comparability and reporting.



The NCST secretariat to create six (6) new specialized positions at Program Director/Analyst Level according to six (6) STI Policy priority areas. Consider new staff in strategic areas, to strategically mainstream activities in various programs implemented by the Ministries and Institutions.



The NCST secretariat to continue collaborations with Science for Africa Foundation (SFA) as coordinator of Grand Challenges (GC) in Africa to launch GC Rwanda.



The NCST secretariat to operationalize a new program on research Request for Applications (RFA) to attract African/global researchers to implement research in Rwanda in order for Rwanda to become a regional/global hub for innovations.



Create a capacity building position to lead programs that improve skills and competences for Rwandan researchers and innovators to maximize outputs. Prioritize collaboration with private sector providing incentives for researchers/innovators to 40-50% time commitment for their projects.



The NCST secretariat to strengthen national research innovation ecosystem output through performance-based contracts by advocating for one national research budget line earmarked as public funding in which the funds shall go to specific Ministries and Institutions for research only.



With support and overall coordination of Dr. Segenet Kelemu, the NCST secretariat to collaborate with Ministry of Health and Rwanda Biomedical Center (RBC) to implement a study in Rwanda on Malaria transmission-blocking microbe discovered in mosquitoes in Kenya that was done at *Icipe*.



With coordination of Dr Ivan Twagirashema and Prof. Birali Hakizumwami Runesha, the NCST secretariat to collaborate and support implementation of blockchain technology and artificial intelligence (AI) tools technology for traceability and cashless payments in the mining sector.

# The Role of Rwandan Scientists in Diaspora to Strengthen Innovation Landscape in Rwanda

Marie Chantal Cyulinyana<sup>1</sup>, Sano Anselme<sup>1</sup>, Jack Ngarambe<sup>2</sup>, Maxime Bimana<sup>3</sup>

<sup>1</sup>National Council for Science and Technology, Rwanda

<sup>2</sup>Kyung Hee University, South Korea

<sup>3</sup>Harbin Institute of Technology, China

## Background and Rationale

The government of Rwanda through NCST, is engaging renowned scientists, researchers, and innovators from the diaspora into the academia, research, and innovation initiatives. This will strengthen international partnerships and leverage STI and R&D programs performance, improve human scientific capacity in national institutions, and contribute to the development of STI and R&D policy and practices. This is one of the key recommendations of the 6<sup>th</sup> NCST Council meeting which was to strengthen national R&D and STI excellence through linkages and collaborations with Rwandan Diaspora and global experts in national priority areas. The particular goal is to ensure that NCST programs are leveraged through collaborations with renowned experts for better knowledge transfer, mentorship, and improved R&D skills.



5 Rwandan Scientists from Diaspora at MINAFFET Office

It is in this regard that NCST has been collaborating with the Ministry of Foreign Affairs and International Cooperation (MINAFFET) to identify and establish a profile for Rwanda community Abroad (RCA) mainly that of Rwandan Diaspora Scientists,

Researchers, Innovators, and Philanthropists. From 3<sup>rd</sup> -13<sup>th</sup> October 2022, on the invitation of NCST, five (5) Rwandan Diaspora scientists and innovators visited Rwandan institutions and linked with scientists in Rwanda for improved collaborations in R&D and STI projects. This was done through field visits of various academic, private, and public institutions and scientific symposiums. The overarching goal was to put in place one the key recommendations mentioned above. The general theme was “Collaboration with Rwanda Community Abroad (RCA) to integrate STI across all sectors to stimulate Rwanda’s economic growth. It is evident that different initiatives will be generated from this first visit and RCA will contribute a lot in strengthening innovation in Rwanda as recommend by NCST council members.

## An Overview of the Rwandan Diaspora Field Visits and Key Recommendations

From 3<sup>rd</sup> to 7<sup>th</sup> October 2022, members of the diaspora participated in field visits of various institutions including academic institutions, research institutions, and private sector. In addition, Diaspora members participated in the symposiums where two of them gave talks. Dr. Joseph Hategekimana, a member of the Rwandan diaspora in Finland, who is a Researcher and Lecturer at the University of Turku, and Dr. Jack Ngarambe, a diaspora from South Korea. During the debrief meeting between NCST team and diaspora team, diaspora team commended the work and initiatives done by NCST. Diaspora members visited different institutions and innovations centers, below are some pictures capturing their visits.



The NCST Team with Rwandan in Diaspora and Stakeholders



RCA Field visit at NIRDA Premises



RCA field visit at UR-ACEIoT, UR-ACE-ESD

## Role of RCA to strengthen innovation landscape in Rwanda

#	Key Roles	Detailed Activities
1.	Partnerships with Rwandan academic institutions: Rwandan diaspora will support Rwandan institutions (i.e. Rwanda Polytechnic) to review their grant proposals before submitting them.	<ul style="list-style-type: none"> <li>RCA will initiate the connection of Rwandan scholars to their own universities via capacity building schemes</li> <li>RCA can also co-supervise MSc and PhD candidates together with Rwandan professors</li> <li>RCA can conduct monthly virtual meetings to share ideas on the state of research in the country and potential areas of improvement and collaboration</li> <li>RCA will collaborate on writing grant proposals, not only to NCST but to other international funding bodies.</li> <li>RCA can also collaborate on scientific publications</li> <li>NCST to ensure the local institutions work with Rwandan diaspora during submission of grant application at NCST</li> </ul>
2.	Engagement with startups and technology hubs in the country	<ul style="list-style-type: none"> <li>RCA will help startups turn their work into publishable material which could, hopefully, generate attention and increase the likelihood of acquiring funds from international bodies</li> <li>RCA will link Rwandan startups with startup leaders in their respective countries and establish some sort of mentorship programs</li> <li>Expert RCA could give free seminars on important elements such as IP to startup leaders in Rwanda. They can help them better articulate their goals/ mission; this also comes in handy when looking for funds.</li> </ul>
3.	Partnerships with government institutions	<ul style="list-style-type: none"> <li>RCA could conduct a sustained channel of communication with different government institutions (i.e., NCST, Ministry of Education etc.) to share ideas on the state of STI and R&amp;D in the country.</li> <li>RCA could research and share the working mechanisms of similar bodies in their respective countries with the government institutions in Rwanda; - the aim being to see whether there is anything the bodies in other countries are doing that could be beneficial to similar bodies in Rwanda.</li> <li>RCA can help review/update the curriculums in Rwandan schools / academic</li> </ul>

#	Recommendations	Implementation Strategies
1.	Develop a national database for RCA scientists, researchers, and innovators	<ul style="list-style-type: none"> <li>• NCST to elaborate a database of researchers/scientists using a trustable tool</li> <li>• Diaspora representatives will work with their diaspora network and identify the diaspora researchers and innovators, as well as their research fields and commend them to use the developed database tool</li> </ul>
2.	Establish an Association of Rwanda Diaspora Scientist Researchers and Innovators (ARDSRI)	<ul style="list-style-type: none"> <li>• Diaspora members are encouraged to work through existing forums and if need be, establishing an association should be their own initiative and NCST shall advocate for this to happen only</li> </ul>
3.	Establish regular programs to be implemented with Diaspora	<ul style="list-style-type: none"> <li>• NCST has appointed focal persons for each diaspora member who came for the pre- and post-7th Council meeting side events.</li> </ul>
4.	Identify areas of collaboration: Establish a joint Pilot project and proposals to implement in Rwanda with national researchers/innovators	<ul style="list-style-type: none"> <li>• Focal point to work closely with diaspora scientist and identify areas of collaboration</li> <li>• Identify 2 possible projects as a starting point for joint implementation and publication</li> </ul>
5.	Rwandan Diaspora proposed to conduct bootcamp and equip young Rwandans with professional skills in emerging technologies (Either virtual or Physical) and put in place funding instruments.	<ul style="list-style-type: none"> <li>• NCST to provide budget to conduct these bootcamp, however, these can start virtually while the fund is not yet available</li> <li>• NCST to identify which emerging technology is mostly needed and organize the bootcamp.</li> </ul>
6.	Rwandan Diaspora to develop a report	<ul style="list-style-type: none"> <li>• Rwandan Diaspora to write a report of all visited institutions (academic, Private industry and Public Institutions)</li> </ul>
7.	Suggest companies to write challenges they meet in their daily operation and base on them to perform and become R&D industry	<ul style="list-style-type: none"> <li>• NCST to identify how companies can identify challenges</li> <li>• NCST to design an approach companies can use to prioritize challenges and how they can solve them</li> </ul>
8.	Put in place technology transfer hubs	<ul style="list-style-type: none"> <li>• NCST to work with stakeholders to conceptualize and mobilize funds for technology transfer hub</li> </ul>
9.	Intellectual Property (IP) should be customized to Rwandan and African Context	<ul style="list-style-type: none"> <li>• NCST should meet its stakeholders and identify their needs and challenges in terms of IP</li> <li>• NCST could invite an expert to give a training to local researchers and innovators, as well as NCST staff on IP and discuss the innovation pipeline</li> <li>• NCST team to share the projects that are ready for commercialization to start with them for IP</li> </ul>
10.	Put in place the awarding scheme of researchers who conduct their studies and research abroad and do research that impact Rwanda.	<ul style="list-style-type: none"> <li>• NCST to collaborate with diaspora and embassies to identify researchers abroad that conduct research abroad which impact Rwanda</li> <li>• Sensitization of Rwandans studying and working abroad to conduct research that impact Rwanda</li> </ul>

# Pre and Post 7<sup>th</sup> NCST Council Meeting Symposia and Awarding Ceremony: Lessons Learnt and Take Away Message

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<sup>2</sup>Modern High Technology Inc., Canada

## Background

During the 7<sup>th</sup> Council Meeting, there was diverse side-line events to support integration of science, technology and innovation (STI) into the national priority sectors to stimulate development. The theme of the 7<sup>th</sup> Council Meeting was critical to guide the meeting along Rwanda's Vision 2050, that is enshrined in the National Strategy for Transformation (NST-1) as the medium-term plan to achieve this vision. Achieving the national development targets of high quality of citizens and industrial growth anchored by research and development (R&D) and growth of innovations is imperative to address national social, economic, and environmental challenges.



*Symposium participants at RICA*

These side events played a big role for NCST to gather different collaborators and stakeholders and organizing a series of symposium where researchers and innovators could network, collaborate and exchange ideas with internationally renowned leaders and experts in Science, research and innovation. It is in this regard that on 5<sup>th</sup> October and 13<sup>th</sup> October 2022, NCST organized two symposiums on Linking Research, Technology and Innovation for economic development to become high-income economy.

## Pre- 7<sup>th</sup> NCST Council Meeting Symposium

On 5<sup>th</sup> October 2022, the Pre- 7<sup>th</sup> NCST Council Meeting Symposium took place at Rwanda Institute for Conservation Agriculture, Bugesera and virtually via Webex and Youtube. Invited were renowned council members and diaspora speakers who provided their experiences on COVID-19 pandemic influence on Food Security Policy in Africa, research on insects and related arthropods and their basis for beneficial uses (such as for food, feed, ecosystem services and value-added products), as well as nutrition and health benefits for economic growth.



*Dr Joseph, Dr Segenet and Dr Eliane interacting with the audience*

Dr. Joseph Hategekimana, Researcher and Lecturer, University of Turku, Finland as the first speaker presented on "Nutrition, Agriculture and Innovation". Dr. Segenet Kelemu Director General & CEO International Centre of Insect Physiology and Ecology (icipe), the second speaker presented on "Innovation and Development" while Dr. Eliane Ubalijoro, the Global Hub Director, Canada, Future Earth Executive Director, Sustainability in the Digital Age Professor of Practice for Public-Private Sector Partnerships, McGill University, Research Associate Professor, Concordia University, Canada third speaker presented on "Harnessing Technology & Innovation in Agriculture for Climate Resilient Sustainable Development"

All speakers highlighted that the revival of agriculture as a high-tech industry offers new opportunities to leapfrog into green technologies. Thus, Rwanda like many African countries should be allowed policy space to nurture their local firms.



RICA Campus Guided tour

## Post- 7<sup>th</sup> NCST Council Meeting Symposium

On 13<sup>th</sup> October, 2022 Prof. Keun Lee Professor of Economics, National University, South Korea, and was Vice Chair to H.E. The President (& Chair) of South Korea of National Economic Advisory Council gave a public talk on "Innovation and Development:" Leapfrogging into a new eco-friendly techno economic paradigm for Rwanda and other African Developing Countries.

On the same day Dr. Jack Ngarambe, a Lecturer at Kyung Hee University in South Korea presented on Technology and Innovation for sustainable development: Role of novel technologies in designing resilient built environments in developing countries where he presented on how heat can be reduced by using roofs which do not radiate heat and also using proper design that ventilate our environment.



Prof. Keu and Dr. Jack interacting with audience facilitated by Dr. Marie Chantal

Overall, the two symposiums were very interactive, participants exchanged with speakers and the speakers requested researchers and innovators to conduct research that is impactful to Rwanda's economy, society and well-being of citizens. In addition, speakers recommended Rwandan researchers and innovators to build on the conception of the ladder from developing to developed countries. Rwanda as a latecomer should employ leapfrogging theory to be able to catch up with our forerunners, because conducting basic research requires much resource.



Symposium participants at Serena Hotel

## Awarding Ceremony of WIS and RIC-R&D Awardees

The R&D report (2021) of Rwanda National Research and Experimental Development (R&D) Survey for the reference year 2018/2019 conducted by the National Council for Science and Technology (NCST) indicated that in Rwanda the participation of women in R&D activities is relatively fair with an overall participation percentage of 35.7%. The report further indicates that female researchers represent 30.4% of total researcher headcounts. In Rwanda's quest to leverage scientific research and technology innovation as an engine for increased national productivity and economic growth, it is imperative to empower women scientists to ensure their significant contribution in science performance and productivity. Therefore, there is a need to reduce the gender gaps and promote equal participation of women and men in performing R&D which leads to increased productivity and better scientific outputs.



In this regard, NCST has established the Women in Science Research and Innovation Grant Scheme. The purpose of this grant scheme is to stimulate and support women researchers to develop scientific leadership skills through development of proposals that may indicate how the results shall in the future lead to product and or service development, testing and validation based on the findings that will in future enable women to create jobs and become entrepreneurs.



5 WIS Awardees

The same report also showed that in terms of the type of research conducted, there was a notable increase in both basic and applied research and a decline in experimental development in 2018/2019 and this confirms a persistent challenge of limited collaboration between academic and research institutions and the industry/private sector. Therefore, in an effort to boost experimental development through collaboration between academia and industry; NCST is established a "Rwanda Innovation Challenges for Academia-Industry Research and Development Collaboration Grant (RIC-R&D)" scheme that will be jointly co-funded through the National Research and Innovation fund (NRIF) and Industry and Private Sector collaboration with at least 20% additional resources to existing total NRIF budget funding.



10 RIC-R&D Awardees and 5 WIS awardees

The aim of this fund is to promote knowledge transfer partnerships among industry/private sector and academia through development and implementation of special Research and Development (R&D) projects leading to innovative solutions in key priority areas.

For these two grant schemes, NCST published the Request for Applications (RFA) and received 158 applications, including 44 applications for WIS, and 114 for RIC-R&D. After a rigorous and systematic review of the applications received, NCST selected 15 best projects for the award.

On 7<sup>th</sup> October 2022, NCST awarded 15 Awardees, 5 awardees of Women in Science Research and Innovation (WIS) Grant Scheme and 10 awardees of Rwanda Innovation Challenges for Academia-Industry Research and Development Collaboration Grant (RIC-R&D). NCST council members, NCST Executive Secretary and various institutions leaders gave awards certificates to awardees. The Minister of Education and Co-Chair of NCST council Dr. Uwamariya Valentine was the guest of Honor in the awarding ceremony.

She reiterated the objectives of the two grant schemes and requested the commitment of the awardees in the implementation of the research activities and asked them to ensure the research activities are implemented within the timeline to achieve the objectives of the project and grant scheme in general. The Awarded projects have outputs that are potential to lead to innovation that would be commercialized as a new product or service.



One of RIC-R&D Awardees being awarded by the Minister of Education

# Engaging Global Experts to Strengthen Rwanda Innovation Ecosystem

Louis Sibomana<sup>1</sup>, Esperance Munganyinka<sup>1</sup>, Felly M. Kalisa<sup>1</sup>, Jimmy Nsenga<sup>2</sup>, and Joseph Hategekima<sup>3</sup>

<sup>1</sup>National Council for Science and Technology, Rwanda

<sup>2</sup> Senior Software, Architect, Research Scientist and Lecturer, Belgium

<sup>3</sup> Scientist & research, Development manager, Finland

## Background

As Rwanda continues its transformation agenda to become a knowledge hub through utilization of science technology and innovation (STI) and research and development (R&D) programs to promote quality of life for Rwandan citizens and support industrialization, the need to strengthen STI and R&D excellence through collaboration with Rwandan Community Abroad (RCA) is vital, as well as collaboration with global experts in priority areas, namely Sustainable Energy, Food Security and Modern Agriculture, Life and Health Sciences, Local Production and Value Addition, Digital Services, Products and Lifestyles; and Resilient Environment and Climate Change.

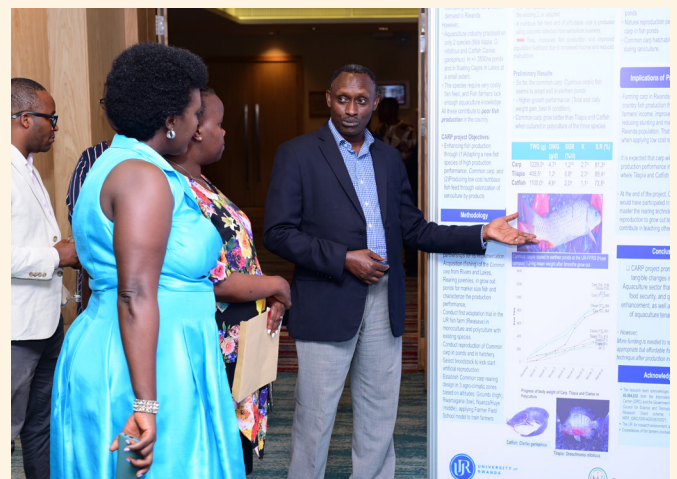


NCST council members visit to CMU-Africa

This is in alignment with approved STI policy (June 2020) under objective 2: **Increased Scientific and Technology Output**, highlighting the need of engaging STI and R&D Rwandan diaspora through the strategy **“Strengthening the cooperation with the Diaspora and International scientists and innovators”**. Moreover, the National Strategy for Transformation<sup>1</sup> (NST1) emphasizes on the need to sensitize the Rwandan Community living abroad for their participation in national

development programs under Priority Area 3: **Strengthen diplomatic and international cooperation to accelerate Rwanda and Africa’s development**. Also, this has been highlighted as one of National Umushyikirano Council<sup>2</sup> resolutions (19-20 Dec 2019, Resolution 8) to establish mechanisms to facilitate Rwandan Community Abroad to support the implementation of different government programs. In addition to that, the African Union continental development strategy, Agenda 2063<sup>3</sup>, aspires for the continent to have dynamic and mutually beneficial links with her diaspora, as critical enablers for Africa’s transformation.

We believe that the expertise and knowledge from Rwandan Community Abroad (RCA) can play significant contributions to STI development through innovative Rwandan diaspora engagement approaches, for example exchange of practices and ideas, fostering collaborative research, scientific knowledge and technology transfer as well as linkage to international partners.



One of NCST awardees showcasing his work to participants during Networking Cocktail

<sup>1</sup> 7 Years Government Programme: National Strategy for Transformation (NST1) 2017-2024.

<sup>2</sup> National Umushyikirano Council, 19-20 December 2019

<sup>3</sup> African Union Commission (2015). Agenda 2063: The Africa we want. Addis Ababa: African Union Commission.

## Funding's and key recommendations

The visit has been an enriching experience to appreciate different ongoing strategies empowering home grown STI in Rwanda. It is in this context that the Government of Rwanda (GoR) has made several investments starting from advanced capacity building at international levels with universities like CMU being hosted in Kigali up to exploration spaces such as Kigali Innovation City (KIC) that facilitate innovative projects such as ZipLine, Zorabots, etc. to operate.

To enable a coherent and cohesive STI ecosystem, the NCST is putting a lot of effort into the organization and coordination of different ecosystem stakeholders from academia to industry. Therefore, multiple STI funding instruments have been put in place with the aim to support home-grown STI to mature their technology readiness levels (TRLs) and be ready for commercialization. With limited local STI skills being one of the main challenges, NCST has developed an inclusive strategy to involve members of the Diaspora with STI skills; this visit being a first step. On the home grown STI offer side, local laboratories, applied research centers and centers of excellences (CoEs) have equipped themselves with advanced infrastructures that enable them to internationally compete in STI.



*The NCST Team with Rwandan in Diaspora and Stakeholders*

Interestingly also, most of them are already developing sustainability plans to anticipate continuity after the end of the original funding program. Last but not least, on the STI demand side there is clearly a growing local or regional ecosystem of industries that needs to be supplied with local STI skills and raw materials, which today are relying on importing innovation from abroad.

However, in this long development journey, some improvements are still needed. Indeed, while the STI roadmap is well defined at the Government level, most of the academia and industry institutions have not yet defined their own STI roadmap strategies to implement the overall Government-level STI roadmap. Secondly, in different funded projects, the sustainability challenge is often considered a bit late in the project and sometimes even not, which puts at risk the continuity of ongoing efforts.

The communication between different stakeholders still needs to be improved especially in order to optimize the sharing of infrastructure and facilities resources. Furthermore, the lack of technology transfer offices (TTOs) in applied research centers and centers of excellences limits the number of STI that are effectively turned into commercialized products and services. Last but not least, it is important to implement a country-wide strategy that enables us to improve Global Index Indicators (GII) in terms of numbers of patents and scientific publications.



*RICA Symposium Participants*



*One of NCST awardees showcasing his work to participants during Networking Cocktail*

## Annex 1: Pre- NCST Council Meeting Symposium

### Pre- 7<sup>th</sup> NCST Council Meeting Symposium



Side Event



**Integrating STI across all sectors to stimulate Rwanda's economic growth:**  
*Linking Research, Technology and Innovation for economic development to become high-income economy.*

RICA is approximately 1.5 hours drive from Kigali. Speakers, participants and delegates are encouraged to have lunch early and start travel at 12:00 to avoid traffic on the way.

#### Speakers:

05<sup>th</sup> Oct 2022 RICA, Bugesera: 2.00-5:30 pm

The pre- 7<sup>th</sup> NCST Council Meeting Symposium side-line event will take place at **Rwanda Institute for Conservation Agriculture (RICA)** in Bugesera District on Wednesday the 05<sup>th</sup> October 2022.

RICA is center of excellence in Conservation agriculture that educates Rwandan next generation as leaders in agriculture and conservation. The Public lectures are relevant since RICA trains the youth both men and women who will be the most important innovators in the next decades utilizing emerging technologies in agriculture ecosystem for economic development.

The goal is to provide scientific evidence and update data in agriculture and innovation to support industrial growth through addressing social, economic, and environmental challenges to achieve desired outcomes.

Invited renown speakers shall provide their experiences on COVID-19 pandemic influence on Food Security Policy in Africa, research on insects and related arthropods and their basis for beneficial uses (such as for food, feed, ecosystem services and value-added products), as well as nutrition and health benefits for economic growth.



#### “Innovation and Development”

**Dr Segenet Kelemu**  
Director General & CEO  
International Centre of Insect Physiology and Ecology (*icipe*)



#### “Nutrition, Agriculture and Innovation”

**Dr Joseph Hategekimana**  
Researcher and Lecturer  
University of Turku, Finland



#### “Harnessing Technology & Innovation in Agriculture for Climate Resilient Sustainable Development”

**Dr. Eliane Ubalijoro**  
Global Hub Director, Canada, Future Earth  
Executive Director, Sustainability in the Digital Age  
Professor of Practice for Public-Private Sector Partnerships,  
McGill University, Research Associate Professor, Concordia  
University, Canada.

## Annex 2: Post 7<sup>th</sup> NCST Council Meeting Symposium

### Post- 7<sup>th</sup> NCST Council Meeting Symposium

Serena Hotel  
Kigali

Side Event

Thursday October 13, 2022



**Integrating STI across all sectors to stimulate Rwanda's economic growth:**  
*Linking Research, Technology and Innovation for economic development to become high-income economy.*

13<sup>th</sup> Oct 2022 Serena Hotel Kigali: 2:30-4:30 pm

#### Speakers:

The post- 7<sup>th</sup> NCST Council Meeting Symposium side-line event will provide evidence that supports research and innovation to stimulate economic development. The goal is to achieve high quality of life of Rwandan citizens and industrial growth, by addressing social, economic, and environmental challenges based on research and development (R&D) outcomes to inspire innovation.

Invited renown speakers shall provide their experiences on **technologies in designing resilient built environments**, and **Innovation and development** highlighting how Rwanda like other African countries have powerful advantages based on abundance of resources (sun, land, and water) to power industrial development, and to provide an export platform. The revival of agriculture as a high-tech industry also offers new opportunities to leapfrog into green technologies.

Thus, Rwanda like many African countries should be allowed policy space to nurture their local firms.



**“Technologies in designing resilient built environments in developing countries”**

**Dr. Jack Ngarambe**  
Kyung Hee University, South Korea



**“Innovation and development: Leapfrogging into a new ecofriendly techno-economic paradigm for Rwanda and other African Developing Countries”**

**Prof. Keun Lee**  
Professor of Economics,  
National University, South Korea, and  
was Vice Chair to H.E. The President  
(& Chair) of South Korea of National  
Economic Advisory Council.