



Fostering Innovation to Solve Key National Social and Development Problems

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PREAMBLE: National strategies for Science, Technology and Innovation (STI) have been reinforced post-covid-19 crisis, and served several functions in Government policymaking. The government of Rwanda's goal is to enhance data-driven innovations to transform industrial development and improve the well-being of Rwandans. These STI strategies set priorities for public investment in STI and identify the focus of government reforms. They also mobilize STI actors around specific goals, such as energy, environmental or health issues, and may help to steer the investments of private actors and increasingly autonomous universities and public research institutes towards programs in priority areas. Based on these strategies engagement with stakeholders such as the research community, funding agencies, businesses, civil society, and regional and local governments will help to forge a common vision of the future and facilitate coordination within the national innovation system (NIS). This issue highlights NCST's strategies such as the launch the Grand Challenges Rwanda as a new program required to advance research and innovation essential for national growth. The issues further underscore investment in R&D innovation and conducting outreach activities on STI projects, and with a strong emphasis on gender balance.

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A group picture with the Guest of honor during the celebration of 8th IDWGS 2023 on 10th February at Marriot Hotel Kigali



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Exposure to hands-on activities on robotics during the IDWGS 2023 celebration

Rwanda Elders Advisory Forum (REAF) Visit at NCST to explore the role of NCST in Implementing the 4th Industrial Revolution (4IR)

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Background

Rwanda Elders Advisory Forum (REAF) has been established by the government of Rwanda with the mission of advising the Government on national topical issues, national political orientation, and challenges about good governance, justice, economy, and social welfare. In this regard, REAF visited various institutions which have in their mandates the advancement of the Fourth Industrial Revolution (4IR) to ensure that concerned institutions speed up the application of 4IR and contribute to the development of Rwanda's economy as well as the well-being of people.



Hon. Tito Rutaremara introducing the purpose of their visit

REAF visited NCST on 16th January 2023 where the Chairperson of REAF, Hon. Tito Rutaremara explained the purpose of their visit and his understanding of 4IR and what NCST is doing in relation to its mandate about 4IR.



REAF and NCST team

The Executive Secretary of NCST Dr. Eugene Mutimura also presented what NCST is doing regarding the 4IR and how NCST is collaborating with its stakeholders for the advancement of 4IR.



NCST ES presenting the importance of 4IR

He reiterated that Science, technology, and innovation (STI) play a vital role in the development of countries whereas, in Rwanda, STI is seen as a key driver for achieving sustainable economic development and improving the quality of life for its citizens. Furthermore, he explained that the 4IR is seen as an opportunity for Rwanda to accelerate its development and leapfrog into a knowledge-based economy. Later, Dr. Mutimura Eugene presented the importance of 4IR in STI development, its current status in Rwanda, the opportunities it presents, and the challenges faced.

Importance of the Fourth Industrial Revolution (4IR) in Rwanda

STI have been widely recognized as essential factors for economic development and growth. In Rwanda, the government has implemented several policies and initiatives aimed at promoting the development of science and technology namely, the STI policy, Intellectual Property Right Policy, Entrepreneurship Development Policy, National Agriculture policy, National ICT Policy, ICT Hub strategy, and Strategic plan for agriculture transformation.

The 4IR refers to the latest phase of industrial development that is characterized by the integration of advanced technologies, including artificial intelligence (AI), the Internet of Things (IoT), robotics, blockchain, and other digital technologies into various areas of society and industry. The 4IR is different from previous industrial revolutions in that it involves the fusion of physical, digital, and biological systems, leading to the creation of a new, more interconnected, and interdependent world. The 4IR is expected to bring about unprecedented changes in the way we live, work, and interact with each other, with the potential to create new products, services, and jobs, while also disrupting traditional models and industries.

Current Status of STI and the 4IR

According to a recent report by the World Bank, Rwanda is making "impressive strides in digital transformation" (World Bank, 2022). The country has a well-developed ICT infrastructure and has implemented policies to support the growth of startups and entrepreneurship. The report states that "Rwanda's investments in technology and innovation are paying off, with a thriving startup ecosystem and a rapidly growing technology sector" (World Bank, 2022). The government's efforts to promote STEM education and provide support for startups and entrepreneurs have helped position Rwanda as a leader in technology and innovation in Africa.

The 4IR is still in its early stages, but it is already having a significant impact on the global economy and society. Many countries, including leading developed economies, are investing heavily in the development and adoption of the 4IR technologies, such as AI, IoT, robotics, and others. As a result, new products and services are being created, and traditional industries are being disrupted. The 4IR is also leading to changes in the way work is performed, with many jobs being automated and others requiring new skills.

In terms of its impact, the 4IR is transforming the way we work, interact with each other, and access information and services. Automation and artificial intelligence are changing the job market, with new, highly skilled jobs being created in fields such as data science and cybersecurity, while also making many traditional jobs obsolete. The rise of the gig economy and flexible work arrangements is also changing the nature of work and the relationship.

Rwanda is at the forefront of the 4IR in Africa, with initiatives like the Kigali Innovation City that aim to foster innovation and entrepreneurship. Recently, through the Ministry of Information Communication Technology and Innovation in collaboration with World Economic Forum, Rwanda has established and launched a Centre for the 4IR that will facilitate the co-design, testing, and refinement of governance protocols and policy frameworks to maximize the social benefits and minimize the risks of advanced science and technology. The government has also implemented policies to improve the ICT infrastructure, making Rwanda one of the best-connected countries in Africa.

Additionally, the government has been working to create a favorable environment for STI development by investing in research and development, providing tax incentives for technology, and promoting collaboration between the public and private sector.

Rwanda has been investing in digital infrastructure and digital skills training to support the growth of the technology sector. Several initiatives were launched to promote the use of technology in various sectors, including agriculture, healthcare, and education. This has led to the development of innovative solutions that are helping to improve the lives of Rwandans. For example, various technologies were developed and deployed such as the use of drones in agriculture, Mobile Money, Irembo, Home Security Systems, Speed governors, road cameras, etc.

Rwanda invested also in STI capacity building by creating centers of excellence with the purpose to train a critical mass of scientists in different areas such African Center of Excellence in Data Science, the African Center of Excellence in Internet of Things, the Regional Centre of Excellence in Biomedical Engineering and eHealth, African Center for Excellence in Energy for Sustainable Development, African Center for Excellence in Innovative Teaching and Learning Mathematics and Science, Africa Centre of Excellence for Sustainable Cooling and Cold chain and Center of Excellence in Biodiversity and Natural Resources Management.

Role of NCST in 4IR

The Executive Secretary Dr. Mutimura Eugene also presented on the role of NCST in the 4IR. As it is the mandate of NCST to advise the Government on setting national priorities in the fields of science, innovation, technology, research, and development as well as modalities for financing such activities and managing the National Research and Innovation Fund, NCST conducts R&D and STI status surveys to advise the government. There-

fore, it was found that the government should increase its investment in emerging technologies. In this regard, NCST has funded several projects, including projects in the emerging technologies field, such as the internet of things, robotics, AI, and others. Promising projects which are ready for commercialization were presented in a booklet that was shared with REAF. In addition, some researchers were invited to present their work and how their projects will provide solutions to our country's challenges.



Executive Secretary of NCST, Dr. Mutimura Eugene presenting NCST-funded project



Executive Secretary of NCST, Dr. Mutimura Eugene presents projects ready for commercialization in the booklet



Alex Musabirema Presented his project entitled "Cricket farming" which aims to reduce stunting,



Dr. Marguerite Mukangango Presenting her project entitled "Capitalizing on marigold bio-pesticide properties to leverage the natural output of products made in Rwanda"



Mr. Andre Ndagijimana presented a project on hand sanitizer



Again Mr. Andre Ndagijimana presented another project on banana yeast starter

Opportunities

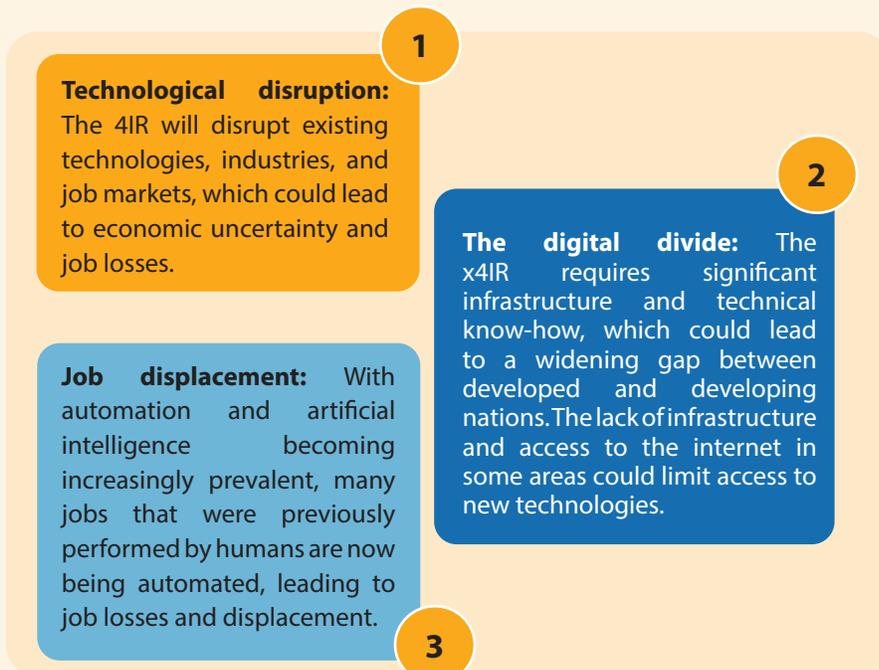
The 4IR presents many opportunities for individuals, businesses, and society as a whole. Some of the most notable opportunities associated with 4IR include:

- 1. Improved productivity and efficiency:** 4IR technologies, such as artificial intelligence (AI), robotics, and the Internet of Things (IoT), can automate many manual and repetitive tasks, reducing the time and effort required to complete these tasks. This can improve productivity and efficiency in various industries, such as manufacturing, healthcare, and finance.
- 2. Job creation:** While some jobs may be automated by 4IR technologies, there will also be a need for new types of jobs that require skills in areas such as data analysis, software development, and cybersecurity.

Challenges

The growth of the STI and 4IR in Rwanda presents several opportunities for the country. The development of technology-based solutions can help to solve some of the country's biggest challenges, such as improving healthcare, and education, and reducing poverty. The growth of the technology sector can also create new jobs and contribute to economic growth.

However, the growth of the STI and 4IR revolution also presents several challenges including:



REAF Recommendation

The 4IR presents an opportunity for countries to leapfrog traditional developmental paths and achieve rapid economic growth. Rwanda, with its ambitious Vision 2050 plan, can take advantage of the 4IR to drive innovation, increase productivity, and create jobs. After discussions between REAF and NCST team, the following recommendations were made:

- 1. Promoting digital literacy:** The government of Rwanda can invest in digital literacy programs to equip citizens with the necessary skills to leverage the benefits of the 4IR. This includes investing in computer science education, coding boot camps, and other training programs.
- 2. Encouraging entrepreneurship:** Rwanda can foster entrepreneurship by creating an enabling environment for businesses to thrive. This includes tax incentives for start-ups.
- 3. To ensure that Rwanda can fully leverage the opportunities presented by the 4IR and STI, the government must continue to invest in the development of the technology sector.** This can be done by providing tax incentives for technology companies and supporting Research and Development (R&D).
- 4. Rwanda must address the challenges facing its STI sector.** This will require a continued focus on investment in technology infrastructure, such as broadband connectivity, and the development of a highly skilled workforce. In this regard, there is a need to put in place a human resource retention strategy. Additionally, the government must work to increase access to finance for technology start-ups and promote a culture of innovation.
- 5. Collaboration between the private and public sectors, including universities and research institutions is key to ensuring that the STI sector continues to grow and develop.**
- 6. NCST should support the cricket farming project to ensure they establish a center for insect as it has been found that insect plays a vital role in reducing stunting and malnutrition.**

Readiness for Establishing Grand Challenges Rwanda

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Background

National strategies for Science, Technology and Innovation (STI) have been reinforced post-crisis and served several functions in government policy making. First, they articulate the government's vision regarding the contribution of STI to the country's social and economic development. Second, they set priorities for public investment in STI and identify the focus of government reforms. They also guide mobilization of STI actors to focus on specific goals, such as energy, environmental or health issues, and steer the investments of private actors and increasingly autonomous universities and public research institutes to focus on priority areas. Third, the elaboration of these strategies guide engagement of stakeholders (the research community, funding agencies, business, civil society, regional and local governments) in broad consultations to forge a common vision of the future and facilitate co-ordination within the national innovation system (NIS).

Rwanda's vision is to transform the country into an upper-middle income country by 2035 and a high-income economy by 2050, and this will be accelerated and supported by the national ambition to integrate and mainstream STI in national policies and strategies through effective and efficient application of knowledge, tools, scientific research, and technological

innovation towards addressing societal challenges, exploring opportunities, and ultimately establishing Rwanda as globally competitive knowledge-based economy. The Government of Rwanda through the National Strategy for Transformation (NST1) and the National Vision 2050 underscores the need for promoting research and development (R&D) and innovation as key drivers of technology, and industrial development for economic transformation.

Global Grand Challenges

Grand Challenges initiative was established in 2003 by the Bill & Melinda Gates Foundation¹ as **Grand Challenges in Global Health** with a focus on 14 major scientific challenges² that, if solved, could lead to key advances in preventing, treating, and curing diseases and health conditions contributing most to global health inequity. Further, it was relaunched in 2014 as Grand Challenges (GC) as its new name reflecting its expanded scope encompassing challenges in global development. Grand Challenges initiatives

engage researchers and innovators from around the world to solve Science, Technology, and Innovation (STI), health, and developmental challenges with a focus on fostering innovations to solve key global health and development problems, as well as directing research to where it will have the most impact, and serving those most in need.

Moreover, GC supports collaborations in scientific and technological research and innovation addressing country-specific and global challenges and using bold mind ideas as innovation to address the challenge. In this regard, a thriving knowledge base is essential to provide the foundation of deep understanding, novel ideas, absorptive capacity, and highly skilled labor to drive and sustain innovation in the wider economy.

The global GC encourages partnerships that bring together investigators from governments, development partners, academic and research institutions, foundations, civil society, and diverse non- organizations including non- profit institutions. The GC family includes the Bill and Melinda Gates Foundation, Grand Challenges Canada, United States Agency for International Development, Grand Challenges Brazil, Grand Challenges India, Grand

Grand Challenges Africa

The Grand Challenges Africa program seeks to promote Africa-led scientific innovations to support countries better achieve sustainable development goals (SDGs) by granting and supporting R&D based big, bold impactful innovative ideas with potential for impact, scale, and sustainability³. The GC Africa is part of the global GC family of initiatives and is being implemented by Science for Africa

¹<https://grandchallenges.org/about>

²<https://gcgh.grandchallenges.org/challenges>

³<https://scienceforafrica.foundation/grand-challenges-africa>

Foundation (SFA Foundation) in partnership with the African Union Development Agency (AUDA-NEPAD).

Grand Challenges Africa prioritizes funding opportunities for high-level quality ideas by researchers and innovators with exciting groundbreaking innovative research projects leading to products and services as unique solutions. The emphasis is that research is from evolving industries, companies, and academic laboratories and using highly recognized labs, industries, innovation hubs, and other relevant settings for practical research to develop research along technology readiness level leading to products and services and transfer knowledge and technology, as well as strengthen the ties between global and African collaborators.

Since 2003, the Grand Challenges family has so far made investments in various African countries of >15 million USD. In the period 2015-2020, an additional \$15.9M has been invested to support research and development programs. The renewed science innovation and entrepreneurship strategy has resulted in GC having a coordination center at the Science Foundation for Africa (SFA) in Nairobi to coordinate efforts and to identify country-based Grand Challenges as integral for developing innovations on the African continent. Apart from sustainability for the support to scale up innovations, country-based support can focus on innovations addressing specific priority areas. As a result, NCST is working with SFA and AUDA-NEPAD to establish the Grand Challenges Rwanda.

NCST Readiness to Establish Grand Challenges Rwanda

To deliver on Rwanda's ambition to become a high-income economy, the Rwanda National Council for Science and Technology (NCST) is partnering with SFA, AUDA-NEPAD, the Bill and Melinda Gates Foundation, and other partners within the Grand Challenges Global and Africa family, to collaborate in scientific and technological research and innovation strengthening science and technology development programs in Rwanda. This collaboration has the potential to alleviate some of the world's most critical global health and

development issues, especially those identified to be pressing societal needs for Rwanda.

The purpose is for Rwanda to join a growing global network of innovation support and leverage the synergies from members of the Grand Challenges family. There will be collaborations for mutual research and innovation funding and research implementation on groundbreaking innovative research projects leading to products and services as unique solutions, and to develop innovations through research exchanges, best practices, and experiences with global and African researchers.

Initial steps to Establish Grand Challenges Rwanda

The NCST provides leadership for Grand Challenges Rwanda in partnership with Bill and Melinda Gates Foundation, SFA, AU-

DA-NEPAD, and other funding partners. By establishing Grand Challenges Rwanda, the country will join a growing global network of innovation support and leverage the synergies from members of the Grand Challenges family.

As an initial step for establishing GC Rwanda, there have been various consultative meetings in 2020 and 2021 including consultations between the National Council for Science and Technology (NCST) Secretariat and some of the NCST Council Members, with leadership from the Bill and Melinda Gates Foundation, the Science for Africa Foundation (SFA) and Grand Challenges Africa. Additional consultations have

Participation of NCST in the Grand Challenges Annual meeting 2022

As part of the preparation for establishing GC Rwanda, NCST has been invited and participated in the Grand Challenges Annual Meeting 2022.



Global Leaders Panel Session (24 October 2022, Belgium) on "Catastrophic Contagion: A global Challenge Exercise"



Executive Secretary of NCST (Dr. Mutimura Eugene) presenting the readiness for launching Grand Challenges Rwanda during Grand Challenges Africa Side Event of the Grand Challenges Annual Meeting (25 October 2022, Belgium)

Participation in this Grand Challenges Annual Meeting 2022, 23rd – 26th October 2022 in Belgium the NCST team was to explore partnership opportunities with Grand Challenges Global and Africa family, through innovative collaboration engagement approaches.

Plan to establish Grand Challenges Rwanda

As ongoing efforts to establish the Grand Challenges Rwanda program, NCST continues to closely work with national and international partners in particular SFA and AUDA-NEPAD for the preparation of launching GC Rwanda on 17-18 May 2023. There have been a number of ongoing activities including:

- ▶ **Development of the joint concept note to establish Grand Challenges Rwanda:** the jointly developed concept note provides details of the funding approach, priority areas of focus, approach for partnership and agreement, and governance of the Grand Challenges Rwanda

- ▶ **Development of the Memorandum of Understanding (MoU) between NCST, SFA, and AUDA-NEPAD:** The draft MoU is under review by AUDA-NEPAD and the next step would be signing

- ▶ **Planning meeting on 20-21 March 2023:** A meeting between NCST, National Stakeholders, SFA, other African GC, and AUDA-NEPAD was held from 20-21 March 2023 in Kigali, to discuss details of the launch of GC Rwanda. The purpose was to learn from other Grand Challenges African countries such as Ethiopia, South Africa, and Botswana, on how successfully they established respective Grand challenges programs.



AUDA-NEPAD Representative, NCST Rwanda ES and NCST Malawi ES during the Preparatory Meeting of Launching the grand Challenge Rwanda



Planning meeting for launch of Grand Challenges Rwanda 20-21 March 2023, Kigali Rwanda

Conclusion

In summary, we believe that the establishment of Grand Challenges Rwanda is sustainable as the program will strengthen national R&D and innovation excellence through scaling efforts through linkage with African researchers and Rwandan Diaspora, and to mobilize renowned experts in various scientific fields to implement research in Rwanda. Additionally, they will attract different partners in the field of research and academia, philanthropists funding R&D and innovation, Rwandan Diaspora scientists, global renown scientists, and chairs to collaborate and improve R&D excellence in Rwanda. Improved R&D excellence resulting from scaling up collaborations with various partners will contribute to Rwanda becoming an African and global hub for innovation and economic growth.

Rwanda-Israel Cooperation on National Innovation System Analysis and Foresight

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¹National Council for Science and Technology (NCST)

²Senior Evaluation and Innovation Policy Specialist, Israel

Purpose and context

A thriving knowledge base is essential to provide the foundation of deep understanding, novel ideas, capacity and highly skilled labor to drive, sustain and scale innovation in the wider economy. Significant progress has been made in creating the prerequisite for industrial growth. Rwanda's leadership is commended for making unique investments for development such as high internet coverage, improved conditions of doing business and an increasing pipeline of critical mass trained through diverse national institutions specifically through centers of excellence. As a result, Rwanda is gaining an international reputation as an emerging knowledge hub. However, Rwanda currently risks creating a lag between the developments in the wider knowledge economy associated with limited research and technology development base.

From November 2021, some of the meeting resolutions made by the Rwanda NCST Council suggested that the NCST Secretariat should broaden collaborations in R&D, and increase funding opportunities for scientists and innovators in the African region and globally. To do this, detailed deliberations and analysis of the status of Rwanda's R&D and science, STI ecosystem is required to shape

and make recommendations for improved research output, technology and innovation development for better collaboration and benchmarking.

In this regard, a technical expert from Israel who is highly educated and a skilled leader in the field of science, technology and innovation with a PhD level of education, Dr. Aliza, was invited for the period of 20-24th November 2022 to assess Rwanda's national innovation ecosystem aimed at supporting national economic development and focusing on Global Innovation Index (GII) metrics.

This particular visit, focused on two main activities;

- i. Deliberations and recommendations on Rwanda's innovation system, and
- ii. Field visits to a few existing technologies, research and innovation resources/ infrastructure.

The main goal of the visit was to **share** Israel's experience on how to enhance national innovation system and support industrial growth. Based on field visits and meetings with various stakeholders on research and innovation projects, she shared her observations which can help to identify and develop new ideas based on societal challenges into unique innovative ways leading to products and services for economic develop-

ment. She also recommended, based on Israeli and global experience, good practice to NCST to support research-based innovation growth from technology level of conceptualization to commercialization.

Expected Outcome

Deliberations and recommendations on Rwanda's innovation system

In the first meeting with Dr Aliza and team with Israel Embassy in Kigali led by HE.Ron Adam, the ambassador of Israel to Rwanda, NCST team presented its activities, progress and future priorities and the status of Rwanda innovation ecosystem. From different exchanges and discussions, Dr Aliza mentioned that even though Israel's ecosystem is more developed than Rwanda's at present, they still face several of the same challenges, including the need to better integrate innovation and R&D activities in low- and medium technology industries and the aspiration to address skilled manpower shortages by targeted programs to rapidly upgrade relevant technology skills. To add to that, she believes that Israel has some very worthwhile models for supporting academic-industry collaboration and university-based, commercialization, technology innovation and knowledge transfer.



Field visits by Dr. Aliza Belman Inbal in different STI institutions / Innovation Lab Musanze



Field visits by Dr. Aliza Belman Inbal in different STI institutions / Leapr Lab and Horizon SOPIRWA Musanze

Feedback on the Field visits conducted to some existing technology, research, and innovation infrastructure

Dr Aliza and NCST team visited different institutions in Kigali and outside Kigali; Musanze Innovation Hub (under MINICT/RISA), Horizon SOPYRWA (Musanze), Leapr Labs and Grid Innovation Incubation hub. These institutions have showed that they are doing what it takes to do research that leads to products and services which can be commercialization.

Their aims are to foster partnerships between innovators, industry players, and government agencies to promote the commercialization of innovative products and solutions. By providing a supportive ecosystem for innovation in science and technology, the government has the potential to drive economic growth and social impact in Rwanda and beyond.

Israel's innovation system journey

Israel's innovation system journey can be traced back to the establishment of the country in 1948, when the government prioritized investing in education and scientific research. However, it wasn't until the 1990s that Israel's innovation system began to flourish.

During this time, the government implemented policies and programs aimed at encouraging entrepreneurship and innovation, such as tax incentives for R&D, and the creation of technology incubators and accelerators. These efforts, combined with a highly educated workforce and a culture of risk-taking, led to the growth of a vibrant startup ecosystem.

Today, Israel is often referred to as the "Startup Nation," and is home to more than 6,000 startups, with a concentration of high-tech companies in



areas such as cybersecurity, artificial intelligence, and biotechnology.

In addition to government support, Israel's innovation system is also driven by collaboration between academia, industry, and the military, which has led to the development of cutting-edge technologies with both civilian and military



applications.

Despite its success, Israel's innovation system also faces challenges, such as a shortage of skilled workers and a lack of diversity in the tech sector. However, ongoing efforts to address these issues, such as increased investment in STEM education and programs to promote diversity and inclusion,



suggest that Israel's journey as an innovation hub is far from over.

Future Directions

Building a strong Innovation system in Rwanda is one of the ways to put in practice what the expert from Israel shared with the team in Rwanda. Another plan is to deliberate on specific areas for further cooperation to fund R&D and innovation

1

Virtual workshops: A series of virtual workshops in which managers of Israeli programs that might be relevant for Rwanda was proposed, using a background case study that the World Bank prepared for the 2016 World Development Report. Each workshop should have different participants from the Rwandan side to ensure a high-quality discussion between Rwandans and Israelis for whom the topic is directly relevant.

2

Cooperation to enhance coordination: A 3-day ecosystem-building event which would engage and enlist diverse actors and institutions from across the ecosystem with the goal of building a common roadmap; this event should include actors from across the ecosystem, academia, government, private sector and prominent Rwandan ecosystem support organizations. The event could produce a foundational document, endorsed by all participants, presenting a common vision for the ecosystem and the role of various actors in achieving that vision, as well as providing a forum for exploring ways to increase collaboration. The event could also elaborate longer-term institution-building projects to be undertaken jointly between the Rwandan ecosystem actors. To develop an Innovation Authority type structure in Rwanda so that this structure will ultimately be informed not only by a good understanding of innovation policy theory but also by the unique constellation of organizations which presently contribute to Rwanda's innovation ecosystem.

3

Tools to evaluate NCST funding achievements: The expert from Israel offered support to develop survey tools to evaluate the extent to which NCST funding programs are properly configured to achieve results.

Celebrating International Day for Women and Girls in Science: Key Takeaway Message

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Background

National On 10th February 2023, the National Council for Science and Technology (NCST), in collaboration with the Ministry of Gender and Family Promotion (MIGEPROF), Rwanda Association for Women in Science and Engineering (RAWISE), African Institute of Mathematical Sciences (AIMS) - Rwanda, the Organization for Women in Science for the Developing World Rwanda Chapter (OWSD-Rwanda), Rwanda National Commission for UNESCO (CNRU), and other co-organizing institutions, anticipated the celebration of the International Day of Women and Girls in Science, (IDWGS), a day usually celebrated on 11th February of every year.



Panel discussion on Strategies to Enhance Career Development and Excellence in Science for Women and Girls

NCST hosted the event in the form of a **Breakfast Gathering** at Marriott Hotel Kigali and the main purpose was to promote and support the role of women and girls in science, technology, and innovation. The Hon. Minister of Gender and Family Promotion, Prof. Jeannette Bayisenge, officiated the celebration. The theme of the day was "Innovate, Demonstrate, Elevate, Advance & Sustain–I.D.E.A.S.: Bringing Everyone Forward for Sustainable and Equitable Development".

The event was attended by esteemed members of the scientific community from different backgrounds and all ages, including renowned scientists, researchers, policymakers, and students. The event presented an opportunity to celebrate the contribution of women and girls in the fields of science and to recognize the importance of their participation in the development of science and technology. Overall, the 8th celebration of the IDWGS was a great success and has left participants with a strong message to ensure that women and girls are provided with the necessary support to



Hon. Minister Prof. Bayisenge with other distinguished guests following the conversation

Key takeaway message from the celebration



Hon Minister Prof. Bayisenge deliverig her closing Remarks

A key takeaway message from the event was “a call to action, to ensure that women and girls are given equal opportunities to pursue careers in science and contribute to the advancement of science and technology in Rwanda”. The participants were also urged “to continue to work together to create an enabling environment for women and girls to access resources, education, and support”.



Inspire Me Talk speakers with students

As the gathering provided engaging platforms and inspiring discussions/talks for participants to share experiences and ideas on how to promote gender equality in science, technology, and innovation for socio-economic sustainable development, in line with the 2030 agenda and its SGDs at large and learn about the work of successful women scientists in Rwanda and elsewhere, it is worth mentioning specific takeaway messages that were noted throughout the celebration. Starting from the remarks by the Hon. Minister of Gender and Family Promotion who was the Guest of Honor, Prof. Jeannette Bayisenge, she gave the following takeaway message:

“Women and girls have long been underrepresented in science and face significant barriers to entry. We must actively work to overcome these barriers by providing equal opportunities and resources, creating a workplace culture that is inclusive and welcoming to all, promoting equal pay, providing support for working mothers, and focusing on providing resources and support to marginalized communities. By empowering women and girls in science, we do not only improve their lives but also benefit society as a whole”.



NCST Executive Secretary giving Opening Remarks

The message from the Minister of Gender and Family Promotion is in perfect agreement with the takeaway message from the Executive Secretary of the National Council for Science and Technology (NCST), Dr. Eugene Mutimura, who, in his opening remarks, delivered the following takeaway message:

“We need to come together to remove the barriers that prevent women and girls from entering and staying in the field of science. We must create a culture where women and girls in science are respected, valued, and recognized for their contributions and provide them with access to education and training opportunities, mentorship, and networking opportunities”



Dr Jenniffer Batamuliza delivering a motivational talk

The 8th celebration of International Day of Women and Girls in Science involved a session of inspiring and motivating talks by Rwandan women recipients of national and international awards. The session which comprised talks by Dr. Jenniffer Batamuliza⁴, Dr. Aurore Nishimwe⁵, and Dr. Annette Uwineza⁶ who all shared their insights and experiences with the audience.

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⁵Dr. Aurore NISHIMWE is a Lecturer in the Health Informatics Program, College of Medicine and Health Sciences, East African Regional Centre of Excellence in Biomedical Engineering, and eHealth (CEBE), University of Rwanda (UR)

⁶Dr. Annette Uwineza is the Director of Allied Health Sciences at the University Teaching Hospital of Kigali (CHUK) and Associate Professor of Human Genetics at the School of Medicine and Pharmacy, in the College of Medicine and Health Sciences, University of Rwanda (UR)



Dr Aurore delivering an inspirational talk



Dr Annette delivering an inspirational talk

The key takeaway message from these inspirational talks is that “promoting equality in science, technology, and innovation can lead to sustainable and equitable development. To achieve this, capacity-building and innovative mentorship programs can be put in place to remove the encountered barriers for individuals from underrepresented and marginalized groups to participate

in and contribute to technological advancements. Furthermore, access to well-equipped labs, the establishment of prestigious awards, and public-private partnerships for technology transfer and innovation can also aid in supporting improved career development. By providing equal access to education and training in STI fields, individuals can have the opportunity to contribute to and benefit from technological advancements”.

The celebration featured a panel discussion on the theme **"Strategies to Enhance Career Development and Excellence in Science for Women and Girls"** and was moderated by Ms. Eva Liliane Ujeneza⁷.

The panel was composed of two individuals with wide expertise on the topic – Prof. Eugénie Kayitesi⁸, and Mrs. Rica Rwigamba⁹, and two high school students - Euphemie Bijyumbu Mwizerwa¹⁰ and Teta Mutega Nikki¹¹.

The key takeaway message from the discussion was that “to achieve gender parity and women excellence in science, career development, initiative & support programs for women in STEM should be intentional to solving challenges faced by women in STEM, raising the public awareness of women capacity to excel, as well as provide support in terms of both technical and soft skills. Equally important is the development and implementation of policies that address societal and historical obstacles/barriers that hinder the engagement, retention, and success of women in science”. Finally, the 8th celebration of International Day of Women and Girls in Science has been a great opportunity for women and girls to learn and discover new technologies that can help them reach their full potential in the field of science and technology through the exhibition of various science and technology products.

⁷Ms. **Eva Liliane Ujeneza** is the Director of Quality Assurance and a Senior lecturer (Mathematics) at Rwanda Institute for Conservation Agriculture (RICA). She is also a doctoral student at the University of Stellenbosch, South Africa.

⁸Prof. **Eugénie Kayitesi** is an Associate Professor in the Department of Consumer and Food Science University of Pretoria

⁹Mrs. **Rica Rwigamba** is the Country Head for Master Card Foundation in Rwanda

¹⁰Ms. **Euphemie Bijyumbu Mwizerwa** is a S6 MPG student at Lycée de Kigali

¹¹Ms. **Teta Mutega Nikki** is a S5 PCM student at FAWE Girls school, Kigali



Hands on activity at Creativity Labs

Exhibitors showcased a wide range of products, from robotic systems to mining technologies, from internet of things solutions to innovations in agriculture and education, which demonstrates the breadth of possibilities for women and girls to make an impact in the scientific and technological world.



This event also highlights the importance of investing in women and girls in science and technology, which will help shape our collective future. The key takeaway message from this exhibition is that “technology has the power to empower women and girls to be at the forefront of innovation and change in science and technology”.



We cannot ignore the “Inspire Me” TV talk show which took place immediately after the breakfast gathering. Nearly 50 young girls from High School attended the talk where they had an opportunity to discuss and get insights from renowned scientists: Prof Eugénie Kayitesi, Dr. Solange Uwituze¹², Dr. Alice Ikuzwe¹³, Dr. Esperance Munganyinka¹⁴, and Ms. Assumpta Umwali Ujeneza¹⁵.



Vote of thanks

The National Council for Science and Technology (NCST) and co-organizing institutions would like to express their gratitude to the Hon. Ambassadors of Israel and Sweden to Rwanda, Vice-Chancellors, CEOs, MDS, various officials, and all the Guests for attending the 8th celebration of International Day of Women and Girls in Science at Marriott Hotel. It was truly an honor to have such important personalities grace the occasion. We are truly thankful for their presence and the knowledge they shared with us.

¹²Dr. Solange Uwituze is currently serving as the Deputy Director-General in Charge of Animal Resources Research and Technology Transfer at Rwanda Agriculture and Animal Resources Development Board (RAB)

¹³Dr. Alice Ikuzwe is the Deputy principal in charge of Academics and Training at Integrated Polytechnic Regional College (IPRC), Kigali

¹⁴Dr. Esperance Munganyinka is a head of the Department of National Research and Innovation Fund (NRIF) at National Council for Science and Technology (NCST)-Rwanda

¹⁵Ms. Assumpta Umwali Ujeneza is a student at Rwanda Institute for Conservation Agriculture (RICA), in Y3 of Food Processing and Technology (NCST)-Rwanda