

REPUBLIC OF RWANDA



NATIONAL COUNCIL FOR
SCIENCE AND TECHNOLOGY



REVISED STRATEGIC PLAN

2023–2029

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Abbreviations and Acronyms

Acronym	Description
3D printing	Three-dimensional printing
4IR	Fourth Industrial Revolution
5G	Fifth Generation (mobile telecommunications technology)
ACE-ESD	African Centre of Excellence in Energy for Sustainable Development
ACEIoT	African Centre of Excellence in Internet of Things
ACEITLMS	African Centre of Excellence in Innovative Teaching and Learning Mathematics and Science
ACEDS	African Centre of Excellence in Data Science
AI	Artificial Intelligence
AIMS	African Institute for Mathematical Sciences
AU	African Union
AUDA-NEPAD	African Union Development Agency – New Partnership for Africa’s Development
AMA	African Medicines Agency
BMGF	Bill & Melinda Gates Foundation
CEBE	Regional Centre of Excellence in Biomedical Engineering and e-Health
CMU-Africa	Carnegie Mellon University Africa
CoEB	Centre of Excellence in Biodiversity and Natural Resources Management
CoE	Centers of Excellence
EASTECO	East African Science and Technology Commission
ETR	End-Term Review
EU JRC	European Union Joint Research Centre
GDP	Gross Domestic Product
GII	Global Innovation Index
GERD	Gross Domestic Expenditure on Research and Development
GIS	Geographic Information Systems
ICT	Information and Communication Technology
IDRC	International Development Research Centre
IIDTAC	International Joint Initiative for Research Harnessing Disruptive Technologies to Address Global Challenges
IoT	Internet of Things
IP	Intellectual Property
KIC	Kigali Innovation City
KTH	KTH Royal Institute of Technology (Sweden)

M&E	Monitoring and Evaluation
MEL	Monitoring, Evaluation and Learning
MTEF	Medium-Term Expenditure Framework
MTR	Mid-Term Review
NCST	National Council for Science and Technology
NRIA	National Research and Innovation Agenda
NRIF	National Research and Innovation Fund
NIS	National Innovation System
NST2	Second National Strategy for Transformation
OECD	Organization for Economic Co-operation and Development
PASET	Partnership for Skills in Applied Sciences, Engineering and Technology
PSF	Private Sector Federation
RBM	Results-Based Management
R&D	Research and Development
REDCap	Research Electronic Data Capture system
RIF	Rwanda Innovation Fund
RIGMS	Research and Innovation Grant Management System
RCC	Research Coordination Committee
RSIF	Regional Scholarship and Innovation Fund
SDG	Sustainable Development Goals
SFA	Science for Africa Foundation
SIDA	Swedish International Development Cooperation Agency
SGCI	Science Granting Councils Initiative
SO1	Strategic Objective 1
SO2	Strategic Objective 2
SO3	Strategic Objective 3
STI	Science, Technology and Innovation
STRI	Science, Technology and Research Innovation
STISA	Science, Technology and Innovation Strategy for Africa
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TISCs	Technology and Innovation Support Centers
TRLs	Technology Readiness Levels
TÜBITAK	The Scientific and Technological Research Council of Türkiye
UGHE	University of Global Health Equity
UNCTAD	United Nations Conference on Trade and Development
UR	University of Rwanda
USD	United States Dollar

Foreword

The Mid-Term Review of National Council for Science and Technology (NCST) Strategic Plan 2023–2028 demonstrated significant progress in strengthening Rwanda’s science, technology, and innovation (STI) ecosystem, while identifying emerging national priorities and implementation lessons that informed this strategic update. Aligned with National Strategy for Transformation 2 (NST2), Vision 2050, and the Government’s evolving institutional architecture, the revised Strategic Plan positions NCST to accelerate achievement of its overall mandate, and the scale and impact of research and innovation in driving economic transformation, resilience, and sustainable development.

This Revised Strategic Plan extends the implementation period to 2023–2029 to ensure full alignment with the NST2 planning cycle. Following consensus deliberation, the NCST Secretariat Senior Management meeting of 29th May 2026 endorsed the one-year extension to 2029, while retaining the annual target data from 2023/24 onwards to preserve a continuous, auditable evidence trail for the final evaluation of the Strategy. The revised framework strengthens institutional accountability, promotes the translation of research and innovation into socio-economic impact, and advances an integrated national knowledge system capable of accelerating Rwanda’s development aspirations. Through effective implementation, robust monitoring and evaluation, and results-based management, NCST will ensure that investments through the National Research and Innovation Fund (NRIF) and other strategic initiatives generate measurable outcomes, strengthen national capabilities, and contribute to inclusive and sustainable development.

We are optimistic that implementation of the revised strategic plan 2023–2029 will support national development to harness the transformative role of science, technology and innovation to make real breakthroughs, create descent jobs and accelerate sustainable development.

We invite all national stakeholders, line ministries, academic and research institutions, the private sector, and the development partner community to participate in implementation of this strategic plan to improve the standard of living of Rwandan citizens.

Hon. Joseph Nsengimana

Minister of Education and Co-Chair NCST Council

Preface

The Revised National Council for Science and Technology (NCST) Strategic Plan 2023-2029 provides a strategic framework for guiding the Council's interventions during the remaining implementation period and strengthening its contribution to Rwanda's socio-economic transformation through science, technology, research and innovation.

The revision of the Strategic Plan 2023-2028 was informed by the findings of the Mid-Term Review, which assessed progress made during the first three years of implementation, identified emerging priorities and challenges, and generated lessons to strengthen implementation. The revised Plan also responds to the evolving national development context and ensures alignment with Vision 2050, the Second National Strategy for Transformation (NST2), and other relevant national STI policies and strategies.

A central feature of this revised Plan is the shift towards a stronger results- and impact-oriented approach. NCST will place greater emphasis not only on the generation of research and innovation outputs, but also on their uptake, technology transfer, commercialization, adoption, scaling and contribution to socio-economic development. This will be supported by strengthened monitoring, evaluation and learning, digital transformation, resource mobilization, institutional capacity development and strategic partnerships.

The Plan is anchored on three Strategic Objectives: strengthening STI policies, strategies and regulatory frameworks; enhancing national STI and R&D performance; and promoting cooperation, collaboration and community engagement in STI and R&D. These objectives provide a coherent framework for NCST to fulfil its statutory mandate and strengthen Rwanda's National Innovation System.

The successful implementation of this Plan will depend on strong institutional commitment, effective coordination, adequate and sustainable financing, accountability and active participation of stakeholders across the STI ecosystem. NCST will therefore continue to work closely with Government institutions, academia and research institutions, the private sector, development partners, civil society, the Rwandan diaspora and other stakeholders.

I am confident that this Revised Strategic Plan will provide clear direction for NCST's work through 2029 and contribute to strengthening Rwanda's research and innovation ecosystem, accelerating the translation of knowledge into practical solutions, and advancing national development priorities.

Dr Eugene Mutimura

Executive Secretary

National Council for Science and Technology

Executive Summary

The Government of Rwanda, through Vision 2050, aspires to become an upper-middle-income economy by 2035 with a GDP per capita of over USD 4,036, and a high-income economy by 2050 with a GDP per capita of over USD 12,476. Rwanda's goal is to achieve a high quality of life for all citizens by creating opportunities that enable them to contribute to national development. The Law No. 40/2017 of 16/08/2017 establishing the National Council for Science and Technology (NCST) provides it with the mandate among others to coordinate, promote, finance, and monitor science, technology and innovation (STI), advise Government on STI policies and priorities, mobilize resources, manage the National Research and Innovation Fund (NRIF), and cooperate and collaborate with regional and international institutions of excellence with similar mission.

This Revised Strategic Plan 2023–2029 builds on the achievements and lessons emerging from the Mid-Term Review of the NCST Strategic Plan 2023–2028. The review confirmed considerable progress in strengthening Rwanda's STI ecosystem while identifying opportunities to enhance implementation effectiveness, accelerate research translation into socio-economic impact, and strengthen alignment with the National Strategy for Transformation (NST2) and Vision 2050. The revised plan therefore refines strategic interventions, implementation approaches, and performance targets to maximize the contribution of STI to national development.

The revised strategy adopts a stronger results-based approach that places greater emphasis on measurable outputs, outcomes and long-term impact rather than activity completion. Success will increasingly be measured through improved research quality, technology adoption, innovation commercialization, evidence-informed policymaking, increased private-sector participation, and enhanced socio-economic benefits for Rwanda.

The revised Strategic Plan 2023–2029 is organized around three Strategic Objectives: (i) strengthening STI policies, strategies, and regulatory frameworks; (ii) enhancing national STI and R&D performance through fund management, capacity building, and the translation of research and innovation outputs into socio-economic impact; and (iii) promoting cooperation and collaboration and community engagement in areas of STI and R&D. These objectives will be delivered with a focus on strengthening accountability, reinforcing evidence-based monitoring and evaluation, and accelerating the translation and scaling of research and innovation through enhanced ecosystem collaboration.

These actions will ensure that NCST strengthens Rwanda's STI ecosystem and increases the contribution of research and innovation to national development, competitiveness, and sustainable growth.

Dr Eugene Mutimura

Executive Secretary

National Council for Science and Technology

1. INTRODUCTION

Science, technology, research, and innovation (STRI) are essential enablers of Rwanda's long-term aspiration to achieve economic growth and prosperity through a competitive, knowledge-based economy. In line with vision 2050¹, Rwanda aspires to attain upper-middle-income status by 2035 and to a high-income country status by 2050. This ambition requires the systemic integration of scientific research and technological applications across all sectors, ensuring that public and private investments generate localized productivity gains employment and economic competitiveness.

The National Council for Science and Technology (NCST) developed its original Strategic Plan 2023-2028² to execute its mandate by strengthening policy frameworks, raising research performance, mobilize research funding and expanding national and international collaborations. The Mid-Term Review conducted in 2026 indicated that while significant progress has been achieved, evolving NST2 priorities, rapid technological change, need to increase commercialization of research outputs and implementation lessons necessitated targeted adjustments to the Strategic Plan. To capture these opportunities and align with National Strategy for Transformation (NST2), this revised strategy establishes an analytical framework for the remaining period through 2029.

To explain the rationale behind this operational adjustment, the structural trajectory of the strategic re-baselining process is illustrated in Figure 1.



Figure 1: Strategic Reset Logic -Systemic evolution of the NCST revised strategic plan

As illustrated in Figure 1, the strategic reset is not an isolated administrative amendment but a sequential development process. The Mid-Term Review identified challenges affecting the performance of the National Innovation System, notably the gap between output generation and market adoption. By re-baselining the strategy, NCST has strengthened alignment of core interventions toward a transition to scale and impact, enabling science, technology and innovation to drive the productivity, job creation, and economic competitiveness indicators demanded by the national transformation agenda.

1.1. Strategic Orientation and NST2 Alignment

The revised Strategic Plan 2023-2029 is aligned with Rwanda's long-term development ambition articulated in Vision 2050, which aims to transform Rwanda into a knowledge-based, innovation-driven, upper-middle-income country by 2035 and a high-income economy by 2050. In addition, the revised Strategic Plan 2023-2029 is aligned with the Second National Strategy for Transformation (NST2), which emphasizes the central role of science, technology, and innovation (STI) in accelerating productivity, competitiveness, and sustainable economic growth. NST2 prioritizes knowledge-based development, digital transformation, research for impact and commercialization, and innovation-driven industrialization as key enablers of Rwanda's socio-economic transformation³.

¹ Republic of Rwanda, "Vision 2050", https://www.minecofin.gov.rw/fileadmin/user_upload/Minecofin/Publications/REPORTS/National_Development_Planning_and_Research/Vision_2050/English-Vision_2050_Abridged_version_WEB_Final.pdf

² National Council for Science and Technology (NCST), Strategic Plan 2023-2028, Kigali, Rwanda, available at: https://www.ncst.gov.rw/fileadmin/user_upload/NCST/Publications/Strategies/NCST_Strategic_Plan_2023-2028.pdf

³ Republic of Rwanda, "National Strategy for Transformation (NST2) 2024-2029", https://www.minecofin.gov.rw/fileadmin/user_upload/Minecofin/Publications/STRATEGIES/NST_2/NST2_2024-2029_Abridged.pdf

Through its strategic interventions, the NCST cross cut sectors aligned to NST2 and specifically contribute to NST2 priorities under Pillar 1: Economic Transformation by advancing Priority Areas, namely: i) Digital transformation through intervention to boost innovation ecosystem and invest R&D activities; ii) Industrial Development and Export Promotion by promoting research commercialization and technology transfer, including intervention to support to Technology and Innovation Support Centers (TISCs); and Creation of Sustainable and Decent Jobs through strengthening research capacity and developing talent for emerging national innovation ecosystem. This alignment ensures that NCST's programs directly support national priorities and enhance the contribution of STI to Rwanda's long-term development ambitions.

1.2. STI Policy Framework

The development of the revised Strategic Plan 2023–2029 has been guided by national strategies and policies that pursue the medium- to long-term goals of Rwanda's Vision 2050, namely economic growth, prosperity, and a high standard of life for Rwandans. These national strategies and policies include the STI Policy, the National Artificial Intelligence Policy, the Technology Transfer and Commercialization Strategy, the National Research and Innovation Agenda (NRIA), and others. These policy frameworks collectively recognize science, technology, and innovation as key drivers of socio-economic transformation, industrialization, and sustainable development. In particular, this Strategic Plan is aligned with the national STI Policy, which focuses on the utilization of STI and R&D programs to promote quality of life for Rwandan citizens and to support industrialization through collaboration with national, regional, and international partners.

The STI Policy sets out a range of system-level strategic imperatives for science and innovation, including the need for: (i) better coordination across research and innovation institutions, addressed under Policy Objective 1 on Effective STI Governance; (ii) an increase in research activity and output, addressed under Policy Objective 2 on Increased Scientific and Technological Output; (iii) increased R&D and STI investment from the public and private sectors, addressed under Policy Objective 3 on Increased R&D and Innovation Financing; (iv) growth in human resources and capacity, improved skills, and better communication, addressed under Policy Objective 4 on Improved STI Capacity and Knowledge Networks Development; and (v) engagement of national, regional, and international partners to support different levels of technology, research, and innovation development, addressed under Policy Objective 5 on Enhanced International STI Collaboration.⁴

The demands of Rwanda's Vision and of national policies and strategies dictate the need for the NCST to plan strategically and align its efforts to: strengthen STI governance and coordination; support research for impact and scale-up to market; foster national and global cooperation; enhance R&D and STI human capacity; and promote inter-institutional communication through a more coordinated framework and better-designed monitoring, evaluation, and learning (MEL) tools.

1.3. Key Drivers and Development Flagship Programs

The implementation of this Strategic Plan underscores the need for flagship programs that support the application of emerging technologies. The 2021 United Nations Conference on Trade and Development (UNCTAD)⁵ Technology and Innovation Report 'Catching Technological Waves: Innovation with Equity' predicts that by 2030 the frontier of technologies will contribute most to global market size. The report indicates that artificial intelligence (AI), robotics, biotechnology, 5G, data science and analytics, nanotechnology, gene editing, and 3D printing will contribute tremendous potential for sustainable development, expanding to over USD 3.2 trillion in market size, a tenfold increase from 2018 to 2030.

⁴ Science, Technology and Innovation Policy June 2, 2020, available at: https://www.ncst.gov.rw/fileadmin/user_upload/NCST/Publications/Policies/STI_POLICY_2020.pdf

⁵ Technology and Innovation Report on *Catching technological waves: Innovation with equity* by UNCTAD on *Technology and Innovation Report 2021* accessed at <https://unctad.org/publication/technology-and-innovation-report-2021>

Innovation and digitalization will increasingly play an important role in virtually all sectors and in the daily lives of Rwandan citizens. This Strategic Plan underscores programs that use digital frontier technologies to foster technological and R&D excellence in priority areas as defined in the National Research and Innovation Agenda (NRIA). This is important in order to develop technology and innovation that results in products and services that will transform the national economy and modernize the lives of Rwandans. The application and diffusion of frontier technologies are critical pillars for industrial growth and national development. They lead to job creation, urbanization, industrialization, export promotion, environmental protection, improved agricultural productivity, a healthy population, sustainable natural resource use, intensified R&D, stimulated innovation, and the development of competitive and capable Rwandans.

1.4. Leveraging Strategic Investments in STI and R&D

This Strategic Plan will leverage the unique strategic investments the Government of Rwanda has made to ensure that scientific research and technological innovation play a key role in the achievement of national development goals. These investments and achievements include Cabinet approval of the STI Policy in June 2020 and the establishment of various STI and R&D performing institutions. They include the establishment of Centres of Excellence (CoEs) at the University of Rwanda (UR), such as the African Centre of Excellence in Internet of Things (ACEIoT), the African Centre of Excellence in Energy for Sustainable Development (ACE-ESD), the African Centre of Excellence in Data Science (ACEDS), the African Centre of Excellence for Innovative Teaching and Learning Mathematics and Science (ACEITLMS), the Regional Centre of Excellence in Biomedical Engineering and e-Health (CEBE), the Regional Centre of Excellence for Vaccines, Immunisation and Health Supply Chain Management (RCESCM), the Centre of Excellence in Biodiversity and Natural Resources Management (CoEB), the Centre of Mental Health, and the Centre for Geographical Information Systems (GIS) and Remote Sensing.

In addition, the Government of Rwanda supports renowned universities and R&D institutions such as Carnegie Mellon University Africa (CMU-Africa), the African Institute for Mathematical Sciences (AIMS-Rwanda), and the University of Global Health Equity (UGHE), among others. Furthermore, Rwanda launched the National Research and Innovation Fund (NRIF) in 2018 as a funding instrument for R&D; established the Rwanda Innovation Fund (RIF) to support and boost innovations; and established Kigali Innovation City (KIC) with the aim of becoming a regional innovation hub accommodating world-class universities, R&D centres, technology companies, and innovation start-ups.

In 2013, Rwanda was among the countries that pioneered the African homegrown Partnership for Skills in Applied Sciences, Engineering and Technology (PASET) to fund and develop human resource capacity for STI and R&D in Rwanda and Africa, to offer Master's and PhD training through the Regional Scholarship and Innovation Fund (RSIF). Moreover, Rwanda has established a technology centre of excellence for the industrial revolution to enhance digitalization, R&D, and advanced technological solutions as products and services in areas of emerging technologies such as Artificial Intelligence (AI), big data analytics, and the security and protection of critical infrastructure. Rwanda hosts the African Medicines Agency (AMA) in collaboration with the African Union to enhance the capacity of State Parties and Regional Economic Communities to regulate medical products, in order to improve access to quality, safe, and efficacious medical products across the continent.

During the implementation of this Strategic Plan, the NCST and its stakeholders will leverage Rwanda's unique investments in STI and R&D to leapfrog and achieve industrial and economic capacity through academia-industry collaborations, while focusing on engineering and manufacturing technology and use of emerging technologies to make production faster, simpler, and more efficient. The NCST and its stakeholders will cooperate to leverage and advocate for increased R&D financing and strengthened excellence through the diversification of funding streams, development of human resources and a highly skilled workforce supported to perform R&D, alongside STI and R&D infrastructure and application of STI in frontier technologies. The goal is that these investments support and strengthen cutting-edge solutions for real industrial growth, strengthen national research and innovation ecosystem, for national economic growth.

2. SITUATIONAL ANALYSIS

The Situation Analysis provides an evidence-based assessment of the current NCST strategic plan to inform the revised NCST Strategic Plan 2023–2029. It draws on the Mid-Term Review, national STI reports, international benchmarks. The analysis shows notable progress in strengthening policy, institutional, and research systems, while also highlighting key challenges in financing, commercialization, coordination, and technology transfer. It provides the basis for refining strategic priorities to enhance the effectiveness and impact of Rwanda's STI ecosystem. The analysis further underscores the need to transition from an activity-based implementation model to an outcome and impact-driven STI system, where performance is measured not only by outputs but by adoption, and transition to scale and impact creation.

2.1. Mid-Term Review of the 2023–2028 Strategic Plan

The Mid-Term Review (MTR) was undertaken to assess implementation progress during the first three years of the NCST Strategic Plan 2023–2028, identify achievements and implementation challenges, and generate evidence to inform the revision of the Strategic Plan for the remaining implementation period.

2.1.1. Approach to the Mid-Term Evaluation

The evaluation of the 2023–2028 Strategic Plan adopted two complementary approaches. First, information was obtained from primary sources, namely departments and staff group discussions conducted during the NCST Staff Workshop Retreat held from 28 to 30 April 2026. Second, secondary information was obtained from institutional accountability reports and documents and from the NCST results-based management (RBM) system annual reports⁶⁷. Additional sources included national, regional and international strategies, NRIF project evaluation reports, stakeholder reports, and national documents and reports.

2.1.2. Key Achievements from the 2023–2028 Strategic Plan

The NCST Strategic Plan 2023–2028 defines strategic interventions to be implemented with the purpose of harnessing the transformative role of science, technology, and innovation to make real breakthroughs, create jobs, and accelerate national sustainable development. The strategic priorities, interventions, and identified outputs and indicators were executed through annual institutional work plans under the guidance of the NCST Council and implemented by the Secretariat.

Overall, during three years (from 1 July 2023 to June 2026) of implementation of the strategic plan, NCST has recorded remarkable progress and tangible achievements in strengthening the national research and innovation ecosystem; in institutional capacity strengthening; in supporting and implementing research and innovation funding programs focusing on national priorities to generate impactful solutions through monitoring and evaluation of program indicators against annually planned activities.

This progress is measurable through the key indicators that support the evaluation of programs undertaken. Key achievements include the mapping of national STI policies, the development of key strategies and regulatory frameworks, the digitization of research management systems, and the conduct of national STI, R&D, and innovation surveys with published reports. During this period, the NCST supported seventy one (71) research and innovation projects through different grant schemes and these projects drive novel technology development and innovation creation, mainly with the application of frontier or emerging technologies; strengthened national and international partnerships.

6 National Council for Science and Technology (NCST), Annual report 2024–2025 available at: https://www.ncst.gov.rw/fileadmin/user_upload/NCST/Publications/Reports/NCST_Annual_Report_FY_2024_2025.pdf

7 National Council for Science and Technology (NCST), Annual report 2023–2024 available at: https://www.ncst.gov.rw/fileadmin/user_upload/NCST/Publications/Reports/NCST_Annual_Report_FY_2023-2024.pdf

The NCST has established strategic partnerships with regional and international funders and secured over Frw 2.05 billion from partners. The NCST has contributed in strengthening the capacity of staff and other scientists and innovators through professional development programs; and expanded initiatives such as establishing and supporting Women in Science grants, academia industry collaboration to promote entrepreneurship, scale up of innovations and job creation. Visibility and awareness have been implemented through various STI and R&D dissemination and awareness programs.

While these achievements demonstrate strong progress in terms of outputs, observations highlight the need to strengthen mechanisms that track implementation through adoption, scaling, and impact creation, accelerate the implementation of interventions, strengthen stakeholder dissemination and validation of frameworks, harmonize indicators and targets, and address funding limitations affecting the achievement of some strategic targets.

2.1.3. Key Challenges Identified

The Mid-Term Review reveals that while the NCST Strategic Plan 2023–2028 remains relevant and broadly on track, challenges cut across need to leverage R&D investment and STI funding, institutional capacity, and national ecosystem coordination, among others. Addressing the identified challenges, particularly in resource mobilization, coordination, and capacity building, will be critical to achieving the Strategic Plan objectives. The lessons learned provide a strong foundation for refining implementation approaches in the remaining period and in future plans.

Challenge 1: The growing need to leverage R&D investment and STI funding



Although the National Research and Innovation Fund (NRIF) has supported 71 ongoing and new research and innovation projects, R&D funding is still limited compared to the initial planned targets and African Union (AU) target of 1% R&D investment as % of national GDP. Current data indicate that R&D investment as % of Rwanda's GDP is 0.79%. The national strategic target for R&D investment as a % of national GDP is 1.5% by 2035 and 3.0% by 2050. However, the rate of investment in R&D and overall funding for STI national is still limited. The implementation of research and innovation programs, particularly transition to scale and commercialization of research outputs has been constrained by limited funding relative to targets. This highlights the need to strengthen efforts towards a more strategic and sustainable resource mobilization approach to adequately support research and innovation..

Challenge 2: Policy and Strategies Implementation Gaps



While significant progress has been made in developing key STI policies and strategies, some are still under development, including the Research Resource Sharing Strategy; Science, Technology, Research and Innovation Skills and Capacity Building Strategy; National Research Incentives and Support Policy; NRIF Procedures Manual; Strategy to Promote Indigenous Knowledge and Technology; and Strategy to Support Gender-Sensitive and Inclusive Research and Innovation. Although some strategies, such as the Technology Transfer and Commercialization Strategy, have been developed and validated, their impact remains constrained by limited coordination among stakeholders.

2.2. System Analysis of the National Innovation System

Rwanda's National Innovation System (NIS) comprises Government institutions, higher learning institutions, research organizations, the private sector, development partners, innovation support organizations, and end users of research and innovation. Over the past decade, Rwanda has made significant progress in strengthening the institutional, policy and financing foundations for science, technology and innovation.

Key milestones include the operationalization of the National Research and Innovation Fund (NRIF), expansion of innovation support infrastructure, establishment of Centres of Excellence, strengthening of digital research management systems, and increased investment in science, technology and innovation. Continued investments in digital infrastructure, digital skills, and emerging technologies, including the Centre for the Fourth Industrial Revolution Rwanda, have further strengthened the national innovation ecosystem.

Evidence from national STI assessments, including Rwanda's R&D Surveys, Innovation survey, and international benchmarking demonstrates continued progress in strengthening the country's research and innovation capacity. Gross Domestic Expenditure on Research and Development (GERD) as a proportion of GDP increased from approximately 0.69% in 2018 to about 0.79% in 2022 according to Rwanda National Research and Experimental Development (R&D) Survey data. Similarly, the number of researchers per one million inhabitants increased significantly from approximately 14 researchers in 2016 to about 59 researchers in 2018 and further to approximately 130 researchers per one million inhabitants in 2022 and the proportion of female R&D personnel headcounts increased from 25.07% in 2016 to 31.9% in 2022⁸, reflecting sustained progress towards a more inclusive, diverse and gender-balanced national research and innovation system. The increasing trend reflects growing investments in higher education, STEM education programs, research institutions, innovation ecosystems, digital skills development, and partnerships supporting scientific research and technology advancement.

Despite these positive trends, the National Innovation System continues to face structural challenges. Business-sector investment in R&D remains relatively limited, technology transfer and commercialization of research outputs are still weak, and collaboration between research institutions and industry requires further strengthening. Fragmented STI data systems and limited interoperability also constrain evidence-based planning and coordinated implementation. Addressing these gaps will be essential to enhance productivity, industrial competitiveness, and the contribution of research and innovation to Rwanda's socio-economic transformation.

2.3. External Environment Analysis

The implementation of the revised NCST Strategic Plan takes place within a rapidly evolving regional and global environment characterized by technological advances, changing economic conditions, emerging policy priorities, and increasing international collaboration in science, technology and innovation. Understanding these external dynamics is essential for positioning Rwanda's National Innovation System to respond effectively to emerging opportunities and risks. Accordingly, this section examines the global and continental STI landscape.

2.3.1. Global Science and Technology Trends

The global science, technology and innovation (STI) landscape is being reshaped by rapid advances in frontier technologies such as artificial intelligence, biotechnology, robotics, quantum technologies, data science, and digital platforms⁹. These technologies are transforming productivity, industrial competitiveness, public service delivery, and economic growth, while redefining development pathways and creating new opportunities for countries that invest strategically in research, innovation, and human capital. Evidence shows that countries with strong STI systems, particularly high-income economies, achieve faster economic transformation due to sustained investment in research and innovation capacity.

The Fourth Industrial Revolution (4IR) is accelerating these changes but also introducing structural challenges, including widening digital and technological divides between high-income and low- and middle-income countries, as well as uncertainties in the future of work.

⁸ National Council for Science and Technology (NCST), Rwanda National Research and Experimental Development (R&D) Survey 2022/2023: Final Analysis Report (Kigali: NCST, 2024), available at: https://www.ncst.gov.rw/fileadmin/user_upload/NCST/Publications/Reports/Final_Analysis_Report_2022-23_R_D_Survey.pdf

⁹ OECD (2023), *OECD Science, Technology and Innovation Outlook 2023: Enabling Transitions in Times of Disruption*, OECD Publishing, Paris, <https://doi.org/10.1787/0b55736e-en>

This requires adaptive policy and regulatory frameworks, strengthened digital skills, ethical governance, intellectual property systems, and sustainable innovation financing.

Global development frameworks, particularly Sustainable Development Goal (SDG) 9, emphasize the need to build resilient infrastructure, promote inclusive and sustainable industrialization, and strengthen scientific research and innovation capacity, especially in developing countries.

International evidence from organizations such as the OECD, UNCTAD, and UNESCO underscores that effective STI systems depend on strong governance, high-level political commitment, coordinated public-private collaboration, continuous evaluation, and efficient innovation ecosystems¹⁰. These institutions further highlight that frontier technologies such as AI, robotics, 5G, and the Internet of Things will be key drivers of global economic growth towards 2030 and beyond. However, unequal access to these technologies could widen existing development gaps if countries fail to strengthen national innovation systems, promote open science and enhance international scientific collaboration.

2.3.2. Science, Technology and Innovation in Africa

Science, technology and innovation are increasingly recognized across Africa as fundamental drivers of industrialization, economic diversification, productivity growth and sustainable development. The Science, Technology and Innovation Strategy for Africa (STISA 2025–2034), together with Agenda 2063 and the Digital Transformation Strategy for Africa (2020–2030), positions STI at the centre of Africa's transition to a knowledge-based, innovation-led economy. The Strategy prioritizes (i) Accelerating sustainable and inclusive industrialization, (ii) Building human capital, infrastructure, and skills, (iii) Building African capabilities in frontier and emerging technologies, (iv) Strengthening science diplomacy and partnerships in STI, (v) Private sector engagement and (vi) Addressing inequalities for youth and gender.¹¹

However, Africa's STI performance continues to face significant constraints despite these continental ambitions. Investment in research and development remains low, averaging approximately 0.4 percent of Gross Domestic Product (GDP) compared to a global average exceeding 2 percent¹². The continent also accounts for less than 1.5 percent of global R&D expenditure and only a small share of the world's researchers¹³. Limited private-sector investment, weak research-to-market linkages, inadequate innovation financing, and shortages of highly skilled human capital continue to constrain innovation-driven growth and development across many African countries.

Addressing these gaps requires stronger national innovation systems, increased and sustained investment in R&D, capacity development, enhanced regional collaboration, strengthened technology transfer systems and deeper partnerships among government, academia, industry and development actors.

2.3.3. Rwanda STI Priorities and Strategic Positioning

The national policy frameworks collectively position STI as a strategic catalyst for increasing agricultural productivity, accelerating industrialization, strengthening healthcare systems, advancing digital transformation, improving environmental sustainability and climate resilience, supporting quality education and skills development, and enhancing evidence-based policy formulation and public service delivery. Consequently, Rwanda's STI agenda increasingly emphasizes stronger research systems, greater adoption of emerging technologies, innovation-driven entrepreneurship, commercialization of research outputs, enhanced collaboration among academia, industry and Government, and increased investment in research and development as essential drivers of national competitiveness and inclusive economic growth.

10 UNESCO (2021), *UNESCO Recommendation on Open Science*, UNESCO, Paris, <https://unesdoc.unesco.org/ark:/48223/pf0000379949>.

11 African Union Commission. (2025). *Science, Technology and Innovation Strategy for Africa (STISA 2025–2034): Driving Africa's Future*. Available at [45087-doc-AU-STISA_2025-2034_Strategy_ENGLISH.pdf](https://au.int/sites/default/files/2025-01/45087-doc-AU-STISA_2025-2034_Strategy_ENGLISH.pdf)

12 UNESCO Institute for Statistics (UIS), R&D expenditure as a proportion of GDP in Sub-Saharan Africa, available at <https://uis.unesco.org/en/news/rd-and-culture-fall-2025-data-release>.

13 UNESCO Institute for Statistics (UIS), Africa accounts for global R&D expenditure, <https://uis.unesco.org/sites/default/files/documents/fs59-global-investments-rd-2020-en.pdf>.

In response to national priorities and strategic positioning, the revised NCST Strategic Plan focuses on strengthening STI policies, strategies and regulatory frameworks; enhancing governance and coordination of the national STI ecosystem; improving research and innovation financing; transition to scale and impact; strengthening STI monitoring and evaluation; and expanding strategic partnerships and public engagement.

Through these priorities, the Plan contributes to the implementation of Vision 2050, NST2 and the National STI Policy while reinforcing NCST's mandate to coordinate and promote science, technology and innovation in Rwanda. In addition, the Plan introduces a deliberate operational shift toward an integrated STI delivery system that moves away from fragmented coordination and output-based tracking to outcome-based performance management, strengthened commercialization pathways, real-time decision-support systems, and enhanced accountability.

2.4. SWOT Analysis

To establish an accurate, evidence-backed assessment of the institutional environment, the NCST's operational capacities and environmental realities have been synthesized into a structured SWOT matrix (Table 1). The matrix integrates the consolidated Strengths, Weaknesses, Opportunities, and Threats identified at the institutional- level, together with the strategic position of the Council within Rwanda's evolving STI ecosystem. Also, the implementation of the Strategic Plan 2023–2029 is taking place within a rapidly evolving national and global STI environment, in which emerging technologies such as Artificial Intelligence, Blockchain, and global economic shifts directly influence, the relevance and execution of the strategy.

Table 1: Consolidated SWOT Matrix

Strengths	Weaknesses
• Institutional Legitimacy: NCST benefits from a clear legal and institutional mandate, positioning it as a central authority in shaping STI policies and enabling strong influence over national priorities and convening power. • Operational Infrastructure: Functional digital systems (research management systems, innovation portals, e-government tools) have streamlined data collection, project tracking, and stakeholder engagement, improved transparency and reducing administrative delays. • Established Core Fund Management Systems: Effective and efficient management of NRIF • Growing Research and Innovation Ecosystem: Increased participation from universities, research institutions, innovation hubs, and start-ups creates a stronger pipeline for knowledge generation and application, technology development, and commercialization. • Strong International Collaboration: Partnerships with international organizations, donors/funders, and research institutions provide access to diversified funding, technical expertise, global best practices, and capacity-building opportunities. • Good governance and strong political will: Strong, continuous executive support for leveraging STI and R&D technology as key drivers for national transformation and knowledge-based growth.	• Limited Support for the development of regulatory frameworks alongside innovation growth. • Transition to scale and Commercialization Deficit: Absence of a structured research-to-commercialization infrastructure, leading to low conversion rates from laboratory prototypes to viable competitive market products. • Disbursement Frictions: Documented administrative delays in fund disbursement that affect research execution timelines and target achievement. • Data Fragmentation: Incomplete data integration across national research entities, limiting the operational utility of foresight and data analytics systems.

Opportunities	Threats
• Institutional Commitment to STI Investment: A high number of national institutions are committed to investing in and supporting STI, with national commitment recorded at over 84.8 percent in the STI Status Report FY 2019/2020. • High Cooperation on Innovation Activities: Cooperation between firms on innovation activities scored 85 percent in the STI Status Report FY 2019/2020. • Established Use of Emerging Technologies: Emerging technologies used for more than three years achieved scores of 85.9 percent for data analytics and 84.7 percent for telemedicine. • Increasing R&D Investment: Gross Domestic Expenditure on R&D (GERD) increased from over Frw 44.4 billion in 2015/2016 to Frw 70.6 billion in 2018/2019, with R&D intensity rising from 0.66 percent of GDP in 2015/2016 to 0.69 percent in 2018/2019, and the number of researchers reaching 152 per one million inhabitants, with women researchers accounting for 35.73 percent — a commendable progression from 25.07 percent in 2015/2016. • Diaspora Expertise: A broad range of STI expertise within the Rwandan diaspora willing to support projects in Rwanda; increased number of universities; and the establishment of regional and national STI Centres of Excellence. • NST2 Alignment: National focus on productivity, digital integration, and high-value jobs provides an entry point to embed STI criteria across ministerial budgets. • Emerging Technologies: Rapid expansion of 4IR technologies (AI, biotechnology, data governance) that can be integrated into agriculture and healthcare delivery.	• Inadequate R&D Incentives: Limited incentives to boost and spur R&D productivity and outputs, for example intellectual property rights, trademarks, and patents. • Slow R&D Investment Growth: A relatively low increasing trend in R&D investment as a percentage of GDP—a change of only 0.03 percentage points from 0.66 percent in 2015/2016 to 0.69 percent in 2018/2019—implies that, at current pace, it would take 30 years to reach the African Union 1 percent target. • Limited Private and Donor Funding: Limited funding by the private sector and development partners in STI and R&D. • Coordination Fatigue: Risk of institutional disengagement from line ministries if multi-sectoral platforms lack binding decision-making authority. • Funding Uncertainty: High reliance on public treasury ceilings and fluctuating international development assistance grants. • Human Capital Constraints: Critical shortages of specialized local talent in STI policy analytics, intellectual property management, and commercialization coaching.

For the coming years, the NCST will build upon its achievements and continue to deepen and strengthen STI and R&D excellence. The following key recommendations need to be considered:

- Optimize R&D and innovation productivity towards the development of technological products and services that feed into Global Innovation Index indicators, by increasing the number and quality of R&D outputs such as intellectual property, patents, copyrights, and trademarks.
- Enhance strategic national, regional, and international partnerships with stakeholders to leverage NRIF funding and improve academia-industry collaboration.
- Provide continuous support to human and institutional capacity for STI and R&D.
- Strengthen STI and R&D community outreach activities.
- Improve monitoring, evaluation, and learning and reporting across the National Innovation System.

2.5. Lessons Learned

The implementation experience over the first half of the Strategic Plan provides valuable insights into what has worked well and several important lessons that inform the strategic recalibration for the remaining period to 2029. The primary operational lesson derived from the implementation of the strategy since 2023 is that an institution can maintain a high rate of activity completion while generating minimal system-wide outcome delivery.

Secondly, the evaluation of funded research projects indicates that the historical focus on academic metrics such as publication counts and citations does not automatically lead to research impact, commercial application or employment generation. Without dedicated technology transfer and commercialization structures, intellectual property management protocols, and formal early-stage private-sector matching platforms, technologies and laboratory prototypes will remain stuck at low Technology Readiness Levels hampering the newly developed products or service to the local, national, or global marketplace and promotion of entrepreneurship and job creation. Future funding allocations out of the NRIF must therefore incorporate transition to scale and commercialization of research outputs and promotion of industry collaboration structures at the application stage.

Lesson 1: NRIF Competitive Research Funding Model

Competitive, transparent funding mechanisms drive quality and accountability and should be expanded with increased funding. The use of competitive grants has improved the quality and relevance of funded research, increased participation from universities and research institutions, and encouraged interdisciplinary and applied research as well as academia-industry linkages.

Lesson 2: Strong Alignment with National Priorities

Strategic alignment enhances support and resource mobilization potential. Alignment with national frameworks (Vision 2050 and NST2) has ensured policy coherence and government support, and has secured the relevance of research to national development challenges including health, agriculture, climate change, and artificial intelligence.

Lesson 3: Stakeholder Engagement Platforms

Continuous stakeholder engagement remains essential for inclusive and adaptive implementation. Existing consultations, workshops, and collaborative platforms have strengthened relationships across the STI ecosystem and informed policy and program development. Experience also indicates that early, continuous, and well-structured engagement enhances alignment and facilitates smoother validation processes. In addition, effective implementation requires robust follow-up mechanisms, clear accountability arrangements, and strengthened inter-institutional coordination to ensure that strategies are effectively translated into measurable results and impact.

Lesson 4: Growing Culture of Innovation and Research

Early investments in ecosystem building are yielding positive behavioral and institutional shifts. There is increasing awareness and participation in research and innovation activities, evidenced by a growing number of institutions actively applying for grants.

Lesson 5: Strengthening the Use and Policy Translation of STI Metrics and Digitalization

The implementation of R&D and innovation surveys has demonstrated that producing STI data alone is not sufficient; its value depends on systematic use, interpretation, and integration into policy and planning processes. When effectively interpreted and utilized, R&D and innovation

survey data can become a strategic tool for evidence-based policymaking, guiding resource allocation, tracking progress toward the SDGs, and positioning STI as a central driver of Rwanda's socio-economic transformation. Digital systems enhance efficiency but require continuous optimization: the progress made in digitization, including RIGMS upgrades and the use of REDCap, demonstrates the value of digital tools in improving efficiency and service delivery; however, sustained investment for required equipment and system optimization is necessary to maximize their benefits.

Lesson 6: Future Planning Should Align Strategic Targets with Resources and Implementation Capacity

Future strategic planning should effectively align targets with available resources, implementation capacity, and realistic delivery timelines. This requires prioritization of interventions, phased implementation of complex and emerging initiatives, and sustained investment in institutional and human capacity to improve implementation effectiveness and achievement of strategic results.

Lesson 7: Strengthen Private Sector Participation in STI Funding

Engagement strategies must move beyond consultations to structured incentives, partnerships, and co-financing models. Efforts to engage the private sector have not translated into substantial co-investment in R&D and innovation.

Lesson 8: Insufficient Capacity for Commercialization Pathways

Research funding has largely supported knowledge generation and product development. Future interventions must embed transition to scale and commercialization, technology transfer, and entrepreneurship support.

3. STRATEGIC FRAMEWORK

The Strategic Framework defines the long-term direction of NCST for the remainder of the Strategic Plan period (2023–2029). It articulates the institutional mandate, vision, mission, values, strategic objectives and implementation logic that guide delivery and ensure alignment with national development priorities.

3.1. Statutory Mandate

The National Council for Science and Technology (NCST) was established by Law No. 40/2017 of 16/08/2017 establishing the National Council for Science and Technology and determining its mission, organization and functioning. The Law mandates NCST to coordinate and promote science, technology, research and innovation, and assigns the Council the following core functions:

- To advise the Government on policies, legislation, and regulation in the fields of science, technology, research, and innovation, and to monitor the implementation of such policies and legislation.
- 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.
- To identify and promote new sectors of activity that require special means and measures for innovation through technology and research essential for the country.
- To carry out an analysis of the nature and efficient use of national resources and infrastructure in order to support science and technology and their innovative use in a sustainable manner.
- To regulate science, technology, innovation, and research.
- To mobilize funds and manage the National Research and Innovation Fund.
- To promote science and technology community outreach activities.
- To prepare and disseminate an annual report on the status of science and technology.
- To cooperate and collaborate with other advanced regional and international institutions of excellence with a similar mission.

3.2. Vision

Strive to contribute to Rwanda's transformation into a country where the potential of Science Technology and Innovation is fully harnessed and integrated to enhance people's wellbeing, sustainable national economic growth, entrepreneurship and competitiveness.

3.3. Mission

To enable Rwanda to become a country based on science, technology and innovation as tools for promoting social welfare and sustainable socio-economic development of the country and competitiveness on the market.

3.4. Core Values

NCST is guided by a set of core values that govern professional conduct, institutional culture, and the manner in which the Council engages with partners, stakeholders, and the public. These values are operational standards against which institutional and individual performance will be assessed throughout the remaining strategic period.



Professionalism: Maintaining the highest standards of competence, ethics, and conduct in all institutional activities.



Institutional Integrity: Upholding transparency, honesty, and the public trust in the management of national resources and the conduct of national STI affairs.



Accountability for Results: Taking ownership of institutional commitments and delivering measurable outcomes within agreed timelines and budgets.



Industriousness, Innovation, and Problem-Solving: Cultivating a results-oriented work ethic that prioritizes creative solutions to national development challenges.



Commitment: Demonstrating sustained dedication to the national STI agenda and to the public good.

3.5. Theory of Change

The Theory of Change provides the conceptual framework for this revised Strategic Plan by illustrating how NCST's interventions are expected to contribute to the achievement of the Plan's intended outcomes and long-term impact. Figure 2 presents a representative example of this results pathway.

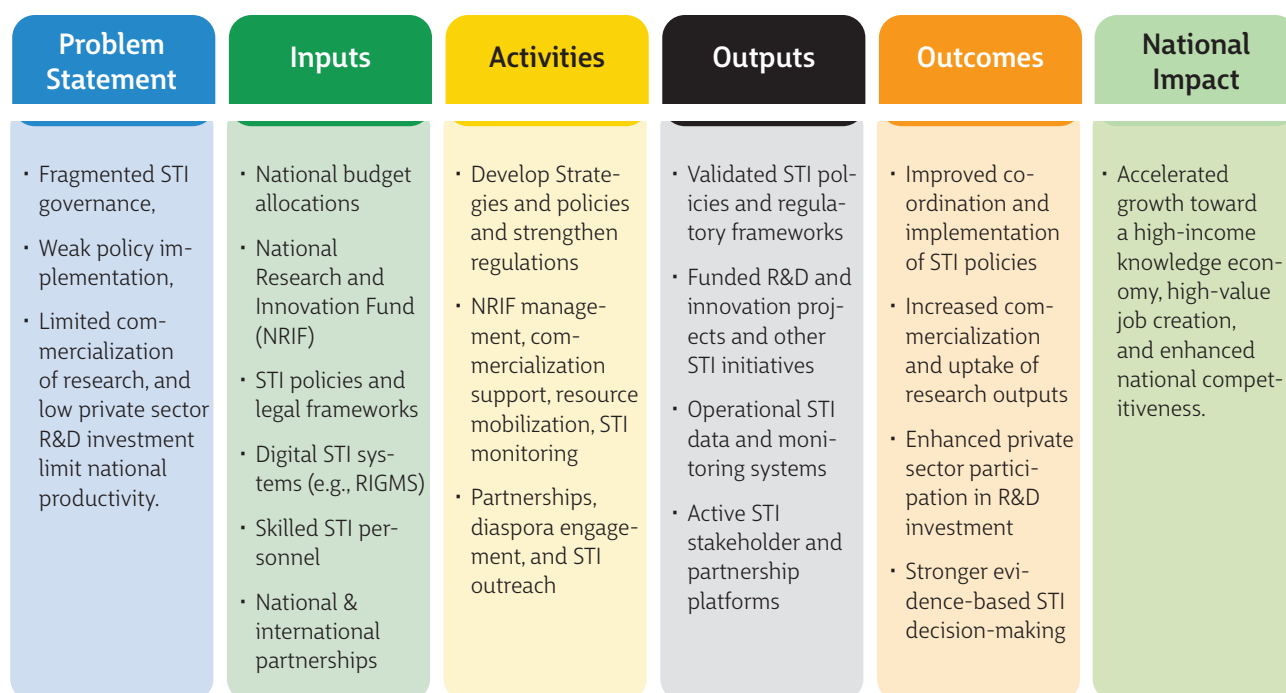


Figure 2: NCST Theory of Change – Linking Inputs, Activities, Outputs, Outcomes, and Impact.

3.6. Results Chain

The Results Chain provides a complementary operational view of the Theory of Change by illustrating an example of the causal pathway from inputs to impact. The example shown in Figure 3 represents the Strategic Objectives, Strategic Priorities, and Strategic Interventions contained in this Strategic Plan, and demonstrates the logical sequence through which implementation is expected to contribute to the intended development outcomes. It will serve as the primary instrument used by the M&E function to monitor implementation progress on an annual basis.

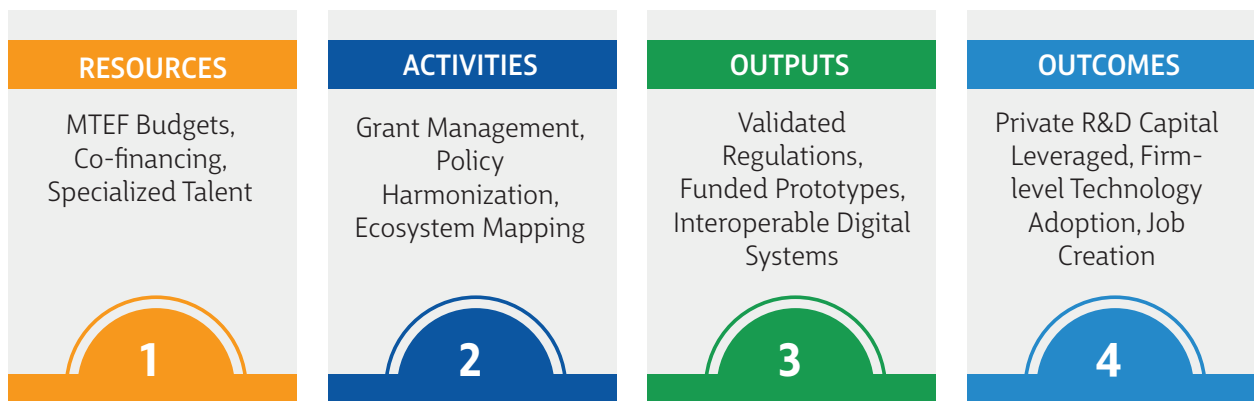


Figure 3: NCST Results Chain: Linking Resources, Activities, Outputs, and Outcomes

3.7. Strategic Alignment Matrix

Figure 4 below illustrates the alignment between the NCST mandate, Strategic Objectives, NST2 priorities and international STI commitments, demonstrating the contribution of the Strategic Plan to national and global development agendas.

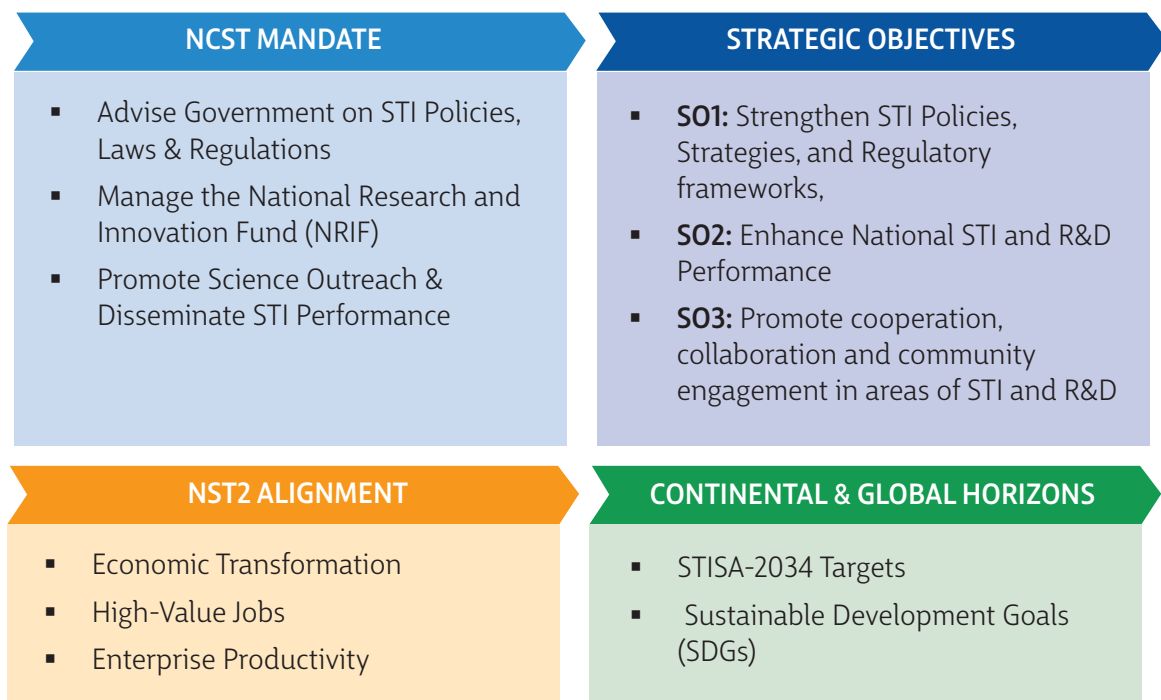


Figure 4: Strategic Alignment Matrix: Linking NCST Mandate, Strategic Objectives, NST2 Priorities, and Global STI Commitments.

3.8. Strategic Objectives

The Strategic Plan is anchored on three Strategic Objectives that comprehensively reflect the NCST's mandate and respond directly to the key constraints identified through the Situational Analysis and SWOT analysis. Each Strategic Objective is further articulated through a set of Strategic Priorities, which provide focused areas of emphasis, and is operationalized through clearly defined Strategic Interventions outlined in the Logical Framework to ensure coherent implementation, results-based management, and effective delivery of intended outcomes.

Strategic Objective 1: Strengthen STI Policies, Strategies, and Regulatory frameworks



This objective seeks to ensure that Rwanda's STI policy framework is comprehensive, current, harmonized across sectors, and effectively implemented. The objective is delivered through four Strategic Priorities: (1.1) Enhance and align existing STI and related policies; (1.2) Develop and promote STI policies and strategies development and harmonization of STI frameworks; (1.3) Develop and strengthen STI legal and regulatory instruments and (1.4) Promote STI coordination, planning and governance.

Strategic Objective 2: Enhance National STI and R&D Performance



The purpose of Objective 2 is to improve research management and productivity as well as monitor STI and R&D status towards socio-economic transformation. The objective is delivered through four Strategic Priorities (2.1); Promote effective Management of National Research and Innovation Fund (NRIF); (2.2) Promote and support technology transfer and commercialization of research outputs; (2.3) Mobilize and leverage resources for research and innovation projects funding and (2.4) Promote and monitor national STI and R&D performance and needs.

Strategic Objective 3: Promote cooperation, collaboration and community engagement in areas of STI and R&D



The objective is delivered through two Strategic Priorities: (3.1) Enhance STI and R&D outreach and engagement; and (3.2) Promote and strengthen partnership & cooperation with national and international stakeholders.

3.9. Logical Framework

The logical framework has been consolidated into the revised Implementation Matrix 2023–2029 (Annex 1), which is retained as the authoritative operational framework for the Plan. The matrix disaggregates strategic interventions, outputs, indicators, baselines, achievements as per the MTR, annual performance targets, anticipated budgets, and funding sources. To preserve readability in the main body, the summary implementation logic is presented in Section 4 and the full matrix is provided in Annex 1.

4. IMPLEMENTATION FRAMEWORK

The Implementation Framework translates the above Strategic Objectives, Priorities, and Interventions into an executable operational program. The Framework specifies the delivery instruments, governance arrangements, human-resource configuration, financial requirements, coordination mechanisms, and risk-management protocols that will govern institutional performance through to June 2029. The Framework is built on the explicit recognition — derived from the Mid-Term Review — that delivery discipline, rather than the volume of activity, will be the principal determinant of institutional success.

4.1. Operational Delivery Matrix

The detailed Revised Implementation Matrix (2023–2029), presented in Annex 1, serves as the primary operational framework and includes strategic interventions, outputs, indicators, baselines, annual targets, indicative budgets, and funding sources. Table 2 provides a high-level summary of the implementation framework for executive reference.

Table 2: Summary of Revised Implementation Matrix 2023–2029

Strategic Objective	Implementation focus and detailed reference
S01: Strengthen STI policies, strategies, and regulatory frameworks	Policy mapping and assessment; STI policy and regulatory instruments; coordination, M&E, digitalization, research repository, inclusion, indigenous knowledge, skills, and resource-sharing frameworks.
S02: Enhance National STI and R&D performance	Research and innovation projects; NRIF/resource mobilization; capacity building; funded-project monitoring; R&D and STI surveys; emerging-technology assessment; foresight; innovation incubation and commercialization schemes.
S03: Promote cooperation, collaboration and community engagement in areas of STI and R&D	STI dissemination and awareness; diaspora and global expert engagement; private-sector partnership frameworks and co-financing flows.

4.2. Governance Structure

The governance of the Strategic Plan is anchored in NCST's established institutional structure, and implemented in collaboration with national and global stakeholders. NCST is supervised by the Office of the President of the Republic of Rwanda and operates through two management organs: the Council and the Executive Secretariat. The Council remains the top governance body, providing strategic oversight, policy direction, fiduciary management, and performance accountability. The Executive Secretariat, headed by the Executive Secretary, is responsible for the day-to-day implementation of the Strategic Plan, supported by two technical departments and the Administration and Finance Unit. The Executive Secretary also oversees legal, procurement, planning, and internal audit functions, provides overall leadership and management of the Executive Secretariat and report on Strategic Plan implementation and performance to the Council. The organizational structure of NCST is presented in Annex 3.

4.3. Human Resource and STI Capacity Development

NCST will strengthen institutional and national STI capacity through continuous human resource development, organizational strengthening, and strategic partnerships. Priority will be given to building competencies in STI policy and strategy development, research and innovation management, monitoring and evaluation, STI performance monitoring, resource mobilization, partnership management and policy advisory services, complemented by continuous professional development delivered in collaboration with national, regional, and international partners to enhance the effective implementation of the Strategic Plan.

4.4. Coordination, Partnership, Stakeholder Engagement and Global Collaboration Framework Mechanisms

The implementation of this Strategic Plan will be supported through coordinated engagement and partnerships across the national and global STI ecosystem. NCST will leverage existing national coordination platforms and sectoral and multi-stakeholder mechanisms to align research and innovation priorities, strengthen collaboration, and promote efficient use of resources.

NCST will coordinate engagement with Government institutions, academia and research institutions, the private sector, development partners, international organizations, and the Rwandan diaspora to advance joint research and innovation, technology transfer and commercialization, knowledge exchange, and capacity development. NCST will also maintain and expand strategic partnerships with bilateral and multilateral partners, including SGCI, IDRC, BMGF, Science for Africa Foundation, AUDA-NEPAD, EASTECO, NCST Malawi, Rwanda Diaspora engagement and other cooperation frameworks, while strengthening its engagement in regional and global STI platforms. These partnerships and coordination mechanisms will support research funding, policy development, institutional capacity strengthening, international collaboration, mobilization of expertise, investment, facilitate knowledge and resource sharing and strengthen linkages between national priorities and global STI opportunities.

4.5. Strategic Communication and Stakeholder Engagement

Strategic communication and stakeholder engagement serve as cross-cutting implementation mechanisms that support the delivery of all Strategic Objectives, with particular emphasis on Strategic Objective 3 on cooperation, collaboration, and community engagement. NCST will strengthen collaboration with government institutions, academia, industry, development partners, and the Rwandan diaspora through established coordination platforms, national STI forums, and bilateral and multilateral engagements. Communication and stakeholder engagement will be coordinated by the Executive Secretariat under the oversight of the Council and integrated into the institutional planning, monitoring, and accountability framework.

5. DIGITAL TRANSFORMATION AND KNOWLEDGE SYSTEMS

Digital transformation is a cross-cutting enabler of the Strategic Plan, providing integrated systems that strengthen research management, evidence-informed decision-making, institutional learning, and performance monitoring across the national STI ecosystem. To support the implementation of strategic interventions, NCST will leverage an integrated digital ecosystem comprising the Research and Innovation Grants Management System (RIGMS), the Research Electronic Data Capture (REDCap) system, and the Rwanda Research and Innovation Repository. The digital transformation approach will strongly contribute for implementation of the revised strategic plan, including: (i) reduced administrative burden on researchers and NRIF applicants; (ii) increased transparency and auditability of the grants-management process; (iii) enhanced quality and timeliness of STI performance data; (iv) improved discoverability and accessibility of national STI outputs; and (v) institutionalization of evidence-based decision making across the Council and the Executive Secretariat.

5.1. Research and Innovation Grants Management System (RIGMS)

The Research and Innovation Grants Management System (RIGMS) is the principal digital backbone of the NRIF and the broader research-funding architecture, and research permit applications. RIGMS provides the digital infrastructure through which Research calls are published, applications are submitted and reviewed, grants are awarded and disbursed, reporting and progress is monitored. The continuous upgrade and optimization of RIGMS is a defined priority of the revised Strategic Plan, with the upgrade to encompass the full grants lifecycle and research permit application and integration of AI where possible.

5.2. Research Electronic Data Capture (REDCap)

The Research Electronic Data Capture system (REDCap) provides the standard data-capture infrastructure for STI surveys. REDCap enables the capture, validation, and aggregation of project-level performance data across the research portfolio, and provides standardized data feed for the integrated STI dashboard. The expansion of REDCap deployment across STI surveys is a defined priority of the revised Strategic Plan.

5.3. Rwanda Research and Innovation Repository

Rwanda Research and Innovation Repository is the standard national archive of STI outputs, datasets, research products, and policy documents. The Repository serves three principal functions: (i) the preservation of the national STI knowledge base; (ii) the discoverability and accessibility of national STI outputs for researchers, policy makers, and the public; and (iii) the institutionalization of open-science protocols across publicly funded research. The operationalization of the Rwanda Research and Innovation Repository will be taken into consideration for the revised Strategic Plan.

6. RESEARCH UPTAKE, TRANSITION OF RESEARCH OUTPUT, TECHNOLOGY TRANSFER AND IMPACT PATHWAY

The research uptake, translation and impact bridges the gap between the generation of research outputs and their practical application and in informing and shaping policy, improving practice, driving innovation, and advancing socio-economic development. Although Rwanda has made considerable investments in research and innovation, the transition of research outputs into scalable solutions, evidence-based decision-making, and measurable development outcomes remains limited. To address this gap, there is a need for a coordinated institutional approach that strengthens research uptake, transition of research output, and impact through a well-defined and structured pathway, strategic partnerships, stakeholder engagement and effective coordination mechanisms.

The mechanism will guide research outputs from knowledge generation, Proof of concept and prototype validation through uptake, technology transfer, adoption, scaling, and sustained application and impact, while ensuring alignment with national development priorities. Technology Readiness Levels (TRLs) will guide the assessment of research maturity and readiness for uptake and deployment, supported by the National Research and Innovation Fund (NRIF). This mechanism will facilitate the translation and transition of research output into evidence-informed policies, technologies, services, and practical solutions, ensuring that publicly funded research generates measurable value through improved policymaking, service delivery, productivity, innovation, and socio-economic transformation.

7. FINANCIAL REQUIREMENTS AND SOURCES OF FUNDS

The financial requirements outline the estimated resource envelope and financing arrangements needed to implement the revised Strategic Plan for FY 2023/24-2028/29. The total indicative financing requirement is Nine billion, five hundred fifty-two million, fifty-nine thousand, nine hundred sixty-two Rwandan Francs (9,552,059,962 Frw), to be financed through two major complementary sources: Government of Rwanda funding from the National Treasury and external grants from development partners and stakeholders. These financing sources support institutional operations, policy implementation, research and innovation, commercialization, coordination, monitoring and evaluation, and strategic partnerships.

Resource mobilization will prioritize alignment with national planning and budgeting processes, diversification of funding sources, and stronger partnerships to enhance the sustainability and predictability of financing for strategic interventions. Government financing will be aligned with the Medium-Term Expenditure Framework (MTEF) and annual budget processes, while external resources will be mobilized through development partners and strategic stakeholders, including SGCI, IDRC, BMGF, Science for Africa Foundation, AUDA-NEPAD, and other bilateral and multilateral partners. Additional opportunities for co-investment will be pursued through private-sector, industry, diaspora, and other strategic partnerships. The National Research and Innovation Fund (NRIF) will continue to provide a key mechanism for financing competitive research and innovation initiatives. These financing and resource mobilization mechanisms will be supported by effective planning, execution, monitoring, and accountability arrangements to maximize the use and impact of available resources. Table 3 provides the detailed cost estimates linking required resource to each of the strategic interventions.

Table 3: Required Financial Costs by Strategic Intervention, 2023–2029

No	Strategic Interventions for 2023 – 2029	Amount (FRW) required
Strategic objective 1: Strengthen STI Policies, Strategies, and Regulatory frameworks		
Outcome 1: Coherent national STI policy and framework strengthened to drive research and innovation		
1	Map the existing STI policies across all 6 priority areas	0
2	National Research Incentives & Support Policy approved	10,000,000
3	Develop Technology Transfer and commercialization strategy	50,000,000
4	Develop STI for SDGs roadmap (Focus areas: food system and transformation)	0
5	Develop and validate a research resource sharing strategy	30,000,000
6	Develop and validate a strategy on Science, Technology, Research and Innovation skills and capacity building	15,000,000
7	Establish a strategy to support gender sensitive and inclusive research and innovation	20,000,000
8	Develop Strategy to promote indigenous knowledge and technology	15,000,000
Outcome 2: Transparent and digitally enabled STI governance system strengthened to improve coordination, compliance, and accountability.		
9	Establish Guidelines for Governing Research-Performing Institutions in Rwanda	20,000,000
10	Develop regulations governing research	0
11	Develop National STI M&E Framework	30,000,000
12	Develop STI coordination framework	20,000,000
13	Develop and optimize digitalization of NCST systems	150,000,000
14	Develop and operationalize Rwanda Research and Innovation Repository	29,155,000
Strategic objective 2: Enhance National STI and R&D Performance		
Outcome 3: Sustained and growing R&D investment with diversifying funding sources to promote research performance and productivity		
15	Coordinate and support research and innovation projects with measurable downstream effect	6,226,694,962
16	Increase R&D funding through resource mobilization	73,000,000
17	Enhance research capacity for improved research and innovation performance and excellence	170,000,000
18	Conduct and strengthen monitoring, evaluation and learning of funded research and innovation projects	120,000,000
19	Regular Review of NRIF Procedures manual to ensure it remains effective, relevant, and aligned with its intended objectives	10,000,000
Outcome 4: National STI ecosystem enhanced through informed decision, R&D and innovation promotion		
20	Conduct and report on national STI, R&D and innovation Surveys	500,000,000
21	Assess the implementation of the STI Policy	15,000,000

22	Assessment of the status, adoption, application & impact of existing emerging technologies for national development.	280,000,000
23	Conduct foresight and STI data analytics studies to inform decision making	40,000,000
Outcome 5: Technology readiness levels strengthened to support measurable commercialization success		
24	Strengthen research to impact pathways for market-ready products	1,000,000,000
25	Establish a framework to support innovation growth through incubation services	100,000,000
26	Support projects through the innovation growth and incubation services	100,000,000
27	Establish competitive STI and R&D awards to build excellence	150,000,000
Strategic objective 3: Promote cooperation, collaboration and community engagement in areas of STI and R&D		
Outcome 6: Public awareness, scientific literacy and engagement in science, technology, research and innovation strengthened.		
28	Enhance STI and R&D performance dissemination and awareness programs.	408,210,000
Outcome 7: Active and visible Rwandan STI diaspora and global expert network contributing to national priorities.		
29	Develop a partnership strategy to engage Rwandan scientists in Diaspora and other STI global experts	50,000,000
30	Develop and operationalize an STI partnership framework to strengthen private-sector partnerships and co-financing.	20,000,000
Total		9,552,059,962

8. MONITORING AND EVALUATION FRAMEWORK

The Monitoring and Evaluation (M&E) Framework constitutes the operational support of the revised Strategic Plan. The framework departs from the traditional output-counting orientation that characterized the first half of the plan period and reorients institutional measurement toward outcomes, decision support, and adaptive management. This shift reflects the central finding of the Mid-Term Review: while the institution achieved a high rate of activity completion, it generated limited system-wide outcomes. The framework therefore ensures that every monitored output is linked to an outcome indicator that supports institutional decision-making.

8.1. M&E System Architecture

The M&E system architecture rests on five interlocking mechanisms: (i) a comprehensive M&E Plan that specifies indicators, baselines, targets, frequencies, data sources, data collection methods, reporting arrangements, and responsibilities; (ii) M&E tools and digital systems, mainly RIGMS, for data collection, management, analysis, and reporting; (iii) Annual Action Plans that operationalize strategic targets into quarterly outputs, milestones, and performance targets; (iv) Quarterly and Annual Progress Reports that track implementation progress against planned targets and communicate results to Senior Management, the Council, the supervising authority, and partners; and (v) structured Learning Reviews that assess implementation performance, analyse variances, capture lessons learned, and inform evidence-based decision-making, adaptive management, and corrective actions.

8.2. Reporting and Learning Cycle

The reporting and learning cycle comprise three principal review instruments and operationalizes a continuous decision-support process that transforms monitoring data into evidence-based insights, corrective actions, and institutional learning. Annual Performance Reviews, conducted each July, will inform the Annual Performance Report and the subsequent Annual Action Plan. A Mid-Term Review of the Strategic Plan will be undertaken in the fourth quarter of FY 2025/26 to assess implementation progress and recommend strategic adjustments, while the End-Term Evaluation, scheduled for June 2029, will provide an independent assessment of overall strategic performance and guide the development of the next Strategic Plan.

Table 4: MEL Plan-Review Instruments, Frequencies, Lead Authorities, and Primary Outputs.

Review Instrument	Frequency	Lead Authority	Primary Output
Annual Performance Review	Annually (July)	Executive Secretariat	Annual Performance Report submitted to Senior Management Meeting
Mid-Term and End-Term Evaluations	June 2026 (MTR); & June 2029 (ETR)	Executive Secretariat with external evaluators	Evaluation report submitted to Council and stakeholders

8.3. STI Performance Indicators

STI performance will be monitored using a set of key indicators designed to track the performance of Rwanda's STI ecosystem and inform evidence-based policy and foresight. These indicators are organized across eight categories-R&D, Invention, Innovation, Diffusion, Linkages, Commercialization, Outcomes, and Impact-and collectively measure the inputs, activities, outputs, outcomes, and impacts of the national STI system. They will be monitored through periodic R&D and Innovation Surveys, as well as other official administrative data sources. NCST implementation performance will be tracked separately through the Strategic Plan Results Framework and Implementation Plan. The indicators enhance accountability, enable performance assessment, and support evaluation across priority STI domains, as summarized in Table 5, which presents the primary indicators, baselines, targets, and means of verification.

Table 5: STI Performance Indicators-categories, indicators, data source and means of verification.

Category	Primary Indicators	Data source and means of Verification
R&D	- GERD as a share of GDP - R&D spending by sector and source of funds - Basic, applied and experimental R&D - Researchers per million inhabitants - R&D personnel by level of qualification, gender (headcount and full-time equivalent) - Researchers by field of science - Share of female researchers	- R&D Surveys - UNESCO Institute for Statistics (UIS) - Higher Education Statistics - Institutional Administrative Data
Invention	- Number of patent applications - Number of IP applications - Number of trademark applications - Number of copyright registrations	- RDB Intellectual Property Registry - R&D Surveys

Innovation	• Innovation intensity • Number of new product and process innovations • Number of innovations created • Current, ongoing or abandoned innovation activities (specify reasons) • Amount of expenditure on innovation activities	• National Innovation Survey
Diffusion	• Number of papers published annually • Field Weighted Citation Impact • Number of publications per capita • Distribution of publications by field/priority areas	• National Innovation Survey • NISR
Linkages	• Number of active academia–industry collaborations • Number of collaborative projects • Bibliometric data with more than one author across institutions and countries	• R&D Surveys
Commercial-ization	• Number of commercialized STI outputs • Value of commercialized STI outputs • Grants awarded on transition to scale and commercialization • Number of projects with prototypes • Innovations, patents, copyrights or trademarks associated with specific projects	• NCST project tracking sheet • RDB Intellectual Property Registry
Outcomes	• Number of doctorate holders within the region in STEM related fields • Number of STEM degrees awarded by type and field • Number and amount of spending on tertiary institutions • Research permits issued and permit revenues • % Funding to women-led projects	• Institutional Reports
Impact	• Contribution of STI to GDP growth • Contribution of STI to employment • Value added of knowledge-intensive and high-technology industries • Value added of education, health, business and financial services • Researchers per million population (FTE) • GERD as % of GDP • Private-sector share of GERD	• STI Surveys National • National Accounts (NISR)

9. RISK MANAGEMENT FRAMEWORK

The Risk Management Framework identifies the principal residual risks that may impede the delivery of the revised Strategic Plan, assesses their likelihood and impact, and specifies the mitigation actions to be deployed by the Council and the Executive Secretariat. The Framework is integrated with the Logical Framework set out in Section 3 and with the Operational Delivery Matrix set out in Section 4, and will be reviewed periodically as part of the M&E reporting cycle. The principal risk categories and mitigation actions are summarized in Table 6.

Table 6: Risk Analysis and Mitigation Framework – Risks, Impacts, and Mitigation Actions

Risk Category	Risk Description	Likelihood / Risk Level	Impact	Mitigation Actions
Financial risk	Inadequate financial resources	Medium	Failure to implement NCST programs	Develop mechanisms for resource mobilization. Prioritize activities and undertake budget review/cutting where required.
Policy and legal risks	Updated national policies, laws and strategic priorities	Low	Policy and strategies may shift focus to other priority areas	Adapt and align the Strategic Plan to new national policies and strategies.
Human capital risk	Limited human resources to achieve NCST mandate	Low	Failure to implement activities as planned	Recruit additional adequate and skilled staff.
Human capital risk	Limited attraction and retention of skilled human resources	Low	Failure to attract and retain professional and skilled staff	Improve the human resource environment.
Collaboration and partnership risk	Partners shift priorities and change co-funding modalities due to the global economic environment		Failure to implement agreed activities	Review and align cooperation and collaboration agreements.
Collaboration and partnership risk	Stakeholder disengagement	Medium	Failure to meet stakeholder requirements	Maintain continuous engagement with all stakeholders and provide timely feedback to stakeholder requests.
Collaboration and partnership risk	Limited funds mobilized	Low	Failure to implement some planned activities	Implement the resource mobilization strategy. Continue fundraising and responding to requests for applications from different funders.
Brand, reputation and visibility risk	Limited visibility of NCST programs	Medium	Failure to effectively ensure the visibility, attractiveness and relevance of NCST programs for stakeholders	Implement the communication strategy, outreach plan, and digital engagement with stakeholders. Continue updating and digitally publishing NCST programs. Maintain quality assurance of NCST programs.
Global risk	Continued impact of COVID-19 and future global pandemics	Low	Low staff performance and productivity	Adapt to national and global pandemic measures. Promote remote working where appropriate. Digitalize NCST services and programs.

10. CONCLUSION

The Revised NCST Strategic Plan (2023–2029) provides a coherent roadmap for strengthening Rwanda's science, technology and innovation ecosystem and enhancing the contribution of STI to national socio-economic transformation. Informed Building on the findings of the Mid-Term Review and aligned with Vision 2050, NST2, and the National STI Policy, the Plan prioritizes strengthening STI governance, research and innovation performance, technology transfer and commercialization, strategic partnerships, digital transformation, and evidence-based decision-making to deliver measurable and sustainable results.

Successful implementation of the Plan will require sustained political commitment, adequate financing, effective coordination, strong accountability, and active collaboration among Government, academia, research institutions, the private sector, development partners, civil society, and the Rwandan diaspora. NCST will continue to provide strategic leadership in coordinating and promoting the national STI ecosystem while applying results-based management, continuous learning, and adaptive implementation to maximize impact.

Through collective commitment and effective execution, this Strategic Plan will strengthen Rwanda's National Innovation System and position science, technology and innovation as key drivers of evidence-based policymaking, productivity, competitiveness, and sustainable socio-economic transformation in support of Rwanda's Vision 2050.

Annex 1: Revised Implementation Matrix 2023–2029

Table 7: Annex presenting the full Revised Implementation Matrix 2023–2029

No	Revised Implementation Matrix				Performance Targets/ Yearly					Anticipated budget (Fw)	Funding sources
	2023 - 2029 Strategic Intervention	Output	Indicator	Baseline 2022/2023	Achievements as of June, 2026	2023/ 2024	2024/ 2025	2025/ 2026	2026/ 2027	2027/ 2028	2028/ 2029
	Strategic objective 1: Strengthen STI Policies, Strategies, and Regulatory frameworks										
	Outcome 1: Coherent national STI policy and framework strengthened to drive research and innovation										
1	Map the existing STI policies across all 6 priority areas	Mapping report of existing STI policies developed	Number of mapping reports produced and disseminated	0	1 report produced in (FY 24/25)		1				
2	National Research Incentives & Support Policy approved	National Research Incentives & Support Policy approved	Cabinet approval	Draft policy						1	
3	Develop Technology Transfer and commercialization strategy	Strategy on technology transfer and commercialization developed and approved	Number of strategies validated	0	1		1				
4	Develop STI for SDGs roadmap (Focus areas: food system and transformation)	STI for SDGs roadmap on food systems and transformation developed and validated.	Number of roadmaps validated	0	1	1					
5	Develop and validate a research resource sharing strategy	Research resource sharing strategy developed and validated	Number of strategies validated	0	0			1			
6	Develop and validate a strategy on Science, Technology, Research and Innovation skills and capacity building	National STRI skills and capacity building strategy developed and validated.	Number of strategies validated and disseminated	0	0			1			

7	Establish a strategy to support gender sensitive and inclusive research and innovation	Gender-responsive and inclusive research and innovation strategy developed and operationalized.	Number of strategies validated and disseminated	0	0	0						1		20,000,000	GoR
8	Develop Strategy to promote indigenous knowledge and technology	Indigenous knowledge and technology promotion strategy developed and validated	Number of strategies validated and disseminated	0	0	0						1		15,000,000	GoR
Outcome 2: Transparent and digitally enabled STI governance system strengthened to improve coordination, compliance, and accountability															
9	Develop Guidelines for Establishing or Governing Research-Performing Institutions in Rwanda	Guidelines for establishing or Governing Research-Performing Institutions in Rwanda established and validated	Number of guidelines established validated	0	0	0					1			20,000,000	GoR
10	Develop regulations governing research	Regulations governing research developed, disseminated and awareness enhanced among stakeholders.	Number of regulations validated	0	1	1								0	GoR
11	National STI M&E Framework developed	National STI M&E Framework developed, adopted, and operational	Framework validated and adopted	0									1	30,000,000	GoR
12	Develop STI coordination framework	National STI coordination framework developed, approved and operationalized.	Framework approved and adopted	0	1	1								10,000,000	GoR
		STI Coordination Committee established	Operationalization report of the STI Coordination Committee										1	10,000,000	GoR
13	Develop and optimize digitalization of NCST systems	NCST systems digitalized and operationalized	Number of systems digitalized and operationalized		2	1	1							150,000,000	GoR
14	Develop and operationalize Rwanda Research and Innovation Repository	Rwanda Research and Innovation Repository developed and operational	Number of Rwanda Research and Innovation Repository platforms developed and operational	0								1		29,155,000	GoR, RISA

Strategic objective 2: Enhance National STI and R&D Performance													
	Outcome 3: Sustained and growing R&D investment with diversifying funding sources to promote research performance and productivity												
15	Coordinate and support research and innovation projects with measurable downstream effect	Research and innovation projects supported	Number of ongoing and new research and innovation projects supported through different funding schemes	111(completed and ongoing)	68; (43 completed and 25 still ongoing)	46	16	8	10	10	10	6,226,694,962	GoR, IDRC, BMGF
			Number of research and innovation projects led by youth and women supported	34			5				5		GoR, IDRC, BMGF
			Number of progress reports with documented outcome (publication, prototype, firm adoption, market entry) produced								1		GoR, IDRC, BMGF
16	Increase R&D funding through resource mobilization	Financial resources for STI programs mobilized and leveraged	Number of resources mobilization manual developed and strengthened approved	0	0			1				13,000,000	GoR
			Number of resource mobilization plan developed and implemented						1				GoR
			Amount (FRW) of funds mobilized	1,000,000,000	FRW 2.05bn;	1.1m	885.1m	500m	500m	500 m	500m	60,000,000	GoR, Development partners and funding organizations
17	Enhance research capacity for improved research and innovation performance and excellence	Capacity-building trainings conducted to improve research capacity and excellence	Number of trainings implemented	2	14	4	4	4	4	4	2	170,000,000	IDRC, GoR

25	Establish a framework to support innovation growth through incubation services	Framework to support innovation growth through incubation services established	0	1													100,000,000	GoR, ACTS, IDRC and development partners
26	Support projects through the innovation growth and incubation services	Projects supported through the innovation growth and incubation services	0	13									12					GoR, ACTS
27	Establish competitive STI and R&D awards to build excellence	Research and innovation excellence promoted through competitive STI and R&D annual prestigious awards	17	12	7	5							5				150,000,000	GoR, EAST-ECO
Strategic objective 3: Promote cooperation, collaboration and community engagement in areas of STI and R&D																		
Outcome 6: Public awareness, scientific literacy and engagement in science, technology, research and innovation strengthened.																		
28	Enhance STI and R&D performance and dissemination and awareness programs.	STI and R&D performance dissemination and awareness program enhanced	2	15	1	1	1	1	1	1	1	1	1	1	1	1	408,210,000	GoR, IDRC, BMGF
Outcome 7: Active and visible Rwandan STI diaspora and global expert network contributing to national priorities.																		
29	Develop a partnership strategy to engage Rwandan scientists in Diaspora and other STI global experts	Partnership strategy for engaging scientists in the diaspora and other global STI experts developed and operationalized.	0												1		50,000,000	GoR and development partners
30	Develop and operationalize an STI partnership framework to strengthen private-sector partnerships and co-financing.	STI framework with documented private-sector partnerships and co-financing developed and approved	0													1	20,000,000	GoR

Annex 2:

Table 8: summary of key achievements for the first three years 2023-2026 of the Strategic Plan

NCST Strategic Plan 2023-2029 Details of key achievements from 01 st July 2023 to June 2026									
Legend: 80-100% is green, 60-79 is yellow, and <60 is red									
N0	Strategic intervention	Output	Indicator	Baseline	End period cumulative target for 3 years (up to June 2026)	Timeline for each intervention	Key Achievements realized during the July, 2023- April, 2026 period	Color rating and %	Observations
1.	Map the existing STI policies across all 6-priority areas	One (1) Mapping of existing STI policies developed	Mapping report of existing STI policies	None	1	June, 2025	Mapping report of existing STI policies conducted and report produced		
2.	Assess the implementation of the STI Policy	Two (2) assessment reports produced on STI Policy implementation	Number of assessment reports produced	STI Policy	1	June 2024	A mid-term assessment of STI policy implementation was conducted, and the report was produced and validated by the SMM: Stakeholder consultations were conducted Data was collected and analyzed. A mid-term assessment report was produced.		
3.	Assess existing emerging technologies, their adoption, application and impact on national development	One (1) assessment report on existing emerging technologies, their adoption, application and impact produced	Assessment report on existing emerging technologies produced and disseminated	None	1	June 2027	- Stakeholder consultations and literature review conducted to refine the assessment concept note and questionnaire. - Questionnaire developed (English and Kinyarwanda), digitized in REDCap, and approved for data collection. - Inception report, report structure, and dummy tables prepared. - NISR visa obtained. - Enumerators and supervisors recruited and trained. - Data collection completed, covering approximately 910 institutions (86.4% of the target). - Data analysis and report preparation initiated.		The remaining activities on this intervention will be completed in FY 2026/2027 including data analysis, validation and dissemination of the assessment report to the stakeholders

NCST Strategic Plan 2023-2029 Details of key achievements from 01st July 2023 to June 2026
Legend: 80-100% is green, 60-79 is yellow, and <60 is red

4.	Develop the National Research Incentives and Support Policy	One (1) National Research Incentives and Support Policy developed and approved	Validated and approved policy	Draft Policy	Policy approved	June 2024	Drafted National Research and Incentives Support Policy produced and submitted for Cabinet approval	Follow-up for Cabinet approval
5.	Develop STI for SDGs roadmap (Focus areas: food system and transformation)	Approved STI for SDGs roadmap	Validated Roadmap	None	Strategy approved	Jun-24	STI for SDG Roadmap developed in collaboration with NCST and Joint Research Centre (JRC) focusing on leveraging STI for transforming food systems in Rwanda	The report was disseminated to stakeholders through various websites e.g., joint research center of EU
6.	Develop Technology Transfer and commercialization strategy	One (1) report on strategy on knowledge and technology transfer (IP skills capacity) strategy developed and approved	Validated strategy	None	1	June, 2025	Developed, validated, launched and disseminated and approved Technology Transfer and Commercialization Strategy (2025-2030)	Interventions developed in will continuously be implemented in yearly action plan
7.	Develop and validate a research resource sharing strategy	One (1) report on strategy to enhance research resource sharing developed and approved	Validated resource sharing strategy and National Infrastructure Inventory report	None	1	June, 2026	Prepared a concept note, Conducted Stakeholder consultation for the development of the Rwanda Research Resource Sharing Strategy and report including key discussions, findings, recommendations to be implemented in the strategy of the workshop was prepared.	Remaining activities for this intervention will be completed in FY 2026/2027
8.	Develop and validate a strategy on Science, Technology, Research and Innovation skills and capacity building	One (1) report on strategy on research and innovation skills capacity to adopt and utilize emerging technologies developed and approved.	Validated strategy	None	1	June, 2025	Prepared a concept note, Conducted Stakeholder consultation for the development of the STI Skills and Capacity Building Strategy and report including key discussions, findings, recommendations to be implemented in the strategy of the workshop was prepared.	Remaining activities for this intervention will be completed in FY 2026/2027

NCST Strategic Plan 2023-2029 Details of key achievements from 01 st July 2023 to June 2026							
Legend: 80-100% is green, 60-79 is yellow, and <60 is red							
9.	Establish a strategy to support inclusive research & innovation, specifically for youth & women	A strategy to support inclusive research & innovation for youth & women developed and approved.	Validated strategy	None	1	June 2027	Not yet implemented
10.	Develop accreditation and quality assurance framework for research institutes	A strategy for accreditation and quality assurance framework for research developed & approved	Validated framework	None	1	June 2025	- During the annual plan, suggested changes to the naming of the initial intervention named "Develop accreditation and quality assurance framework for research institutes" to "Guidelines for Establishing or Governing Research-Performing Institutions in Rwanda" - Draft guidelines was not validated by stakeholders
11.	Develop and raise awareness on Regulations Governing research	Rules and regulations on research activities in Rwanda developed and approved	Validated rules and regulations	None	1	June 2024	Regulations of the Executive Secretary No 001/NCST/2024 of 07/11/2024 governing research in Rwanda validated, disseminated and published in the Official Gazette n° Special of 12/11/2024 One intervention as per Rwanda law Reform Commission (RLRC) recommendations

NCST Strategic Plan 2023-2029 Details of key achievements from 01 st July 2023 to June 2026								
Legend: 80-100% is green, 60-79 is yellow, and <60 is red								
12.	Develop the National STI M&E framework	One (1) Framework on National STI M&E developed and approved	Validated framework	Implement plan of STI policy	1	June 2025	Not yet developed. However, NCST benchmarks on the following existing manuals when preparing STI reports: Frascati Manual 2015 Oslo Manual 2018 National Monitoring Evaluation and Learning (NMELE) guidelines developed by MINECO-FIN in 2021	This has to be discussed at institutional level to decide whether we can consider Frascati Manual 2015 and Oslo Manual 2018 as National STI M&E framework
13	Develop STI coordination framework.	One (1) Framework on STI coordination developed and approved	Validated framework	Research Coordination Committee	1	June, 2025	Stakeholders' consultation conducted. STI coordination framework developed and validated by the SMM.	
14	Develop and optimize digitalization of NCST systems	RIGMS upgraded STI and R&D survey digitalized (REDCap tool)	Number of online services Number of digital platforms upgraded and developed Number of digitalized tools	Research and Innovation Grant Management Systems (RIGMS) REDCap tool for STI and R&D survey		June, 2024	• RIGMS was upgraded to improve its efficiency, security, and scalability (Workflow, Reporting) • Leveraged REDCap to digitize the 2022-2024 National Innovation Survey • 227 research permits which generated 76,299,985.22rw in revenue. • Online Repository for Scientific Research and innovation output in Rwanda was developed and operationalized	There is a need to harmonize indicators to ensure it measures the intended output and also harmonized with baseline related targets
15	Advocate for establishment of a national research budget line	National research budget line established	Research budget line established	None		June, 2025	NCST initiated advocacy for the needs to create a dedicated National Research budget line to track R&D allocations across all sectors during the Planning and budget consultations	There is a need of continuous follow-up on the advice to establish national research budget line. However this should not be captured as an intervention in NCST's revised strategic plan.

NCST Strategic Plan 2023-2029 Details of key achievements from 01 st July 2023 to June 2026						
Legend: 80-100% is green, 60-79 is yellow, and <60 is red						
16	Coordinate and support research and innovation projects	At least a total of 100 research and innovation projects funded and supported by the next 5 years	No. of new and ongoing projects supported	111	80 projects	June 2026
17	Enhance research capacity for improved grant management	At least 20 training efforts (workshops, mentorships programs, courses) are implemented	No. of training conducted	2	16 trainings	Jun-26
				Seventy-one (71) research and innovation projects supported with over 3,226,694,962Frw disbursed to host institutions in different instalments 43 projects completed while 28 are still ongoing and are good track. Trainings conducted include: Trainings were conducted on grant management, coordination, monitoring and evaluation (MEL), reporting, and accountability. Five NCST staff attended the Project Management Professional (PMP) training. Training workshop conducted on knowledge synthesis and writing policy briefs and scientific manuscripts. One NCST staff attended a certified short course in Monitoring and Evaluation for Development Projects in Nairobi, Kenya (4-15 November 2024). Eleven NCST staff participated in Tender Process and Management training (9-13 September 2024). A Strategic Management and Leadership Workshop was attended by 43 participants, including researchers, grant managers, and NCST staff. Fundraising and Resource Mobilization training was conducted 14-16 May 2025, attended by 51 participants including staff, researchers, trainers, and innovators. Training on Science Communication conducted 25-27 June 2025. Two analysts enrolled in the Associate Big Data Analyst (ABDA™) certification program. A User Requirements Workshop was conducted to develop requirements for the Research and Innovation Repository. RIGMS training was conducted for NCST staff to enhance system use and operation. A technical assistance visit (9-11 June 2025) supported by SARIMA through SGCI partnerships involved staff from NCST, RBC, and UR. A Virtual STI Foresight Training was conducted on 19 June 2025 in collaboration with AUDA-NEPAD.		
				There is a need to harmonize targets in implementation matrix with target in Logical framework work to make them 20		

NCST Strategic Plan 2023-2029 Details of key achievements from 01st July 2023 to June 2026
Legend: 80-100% is green, 60-79 is yellow, and <60 is red

18.	Conduct and strengthen monitoring and evaluation of funded research and innovation projects	At least 20 M&E assessments are conducted for a total of 105 projects to improve the quality and % of projects efficient grant management systems	No. of projects evaluated	111	80 projects thought 16 M&E field visits (Quarterly M&E plan prepared and reports produced)	Jun-26	- Quarterly M&E field visits were conducted on Sixty-eight (68) projects supported hosted to various institutions during thirteen periods covering fiscal year (FY 2023-2024, FY 2024-2025 and FY 2025-3026) - M&E reports were prepared and to track progress which informed decision-making to the NCST management - Strengthened M&E through regular follow-up with principal investigators and host institutions to ensure timely submission of technical and financial reports	- There is a need to revise this indicator on how many M&E that were conducted) 1. Regular 2. Specific/special 3. Joint M&E between NCST and external Funders - M&E Tools drafted -Assessment of technical and financial reports for NCST funded Projects - Leadership meetings for projects with challenges - Feedback to Pls after M&E activities	
19.	Review of NRIF Procedures manual	At least two (2) times review reports of NRIF Procedure Manual developed and approved	Revised NRIF procedure manual validated	NRIF Procedure manual available & approved	Report	June 2025	Organized and conducted an assessment and review of the existing procedures manual to ensure that the manual remains a robust, effective tool that supports the NRIF's goals while meeting the needs of applicants and maintaining compliance with broader requirements	Manual reviewed but still waiting for approval from Council members	

NCST Strategic Plan 2023-2029 Details of key achievements from 01 st July 2023 to June 2026							
Legend: 80-100% is green, 60-79 is yellow, and <60 is red							
20	Establish specific grant projects to support youth and women with evidence-based innovations and ideas	At least 15 projects funded over 5 years, monitored and supported to improve quality and % of proto-types & innovations created by youth and women	Number of projects supported	36	15 projects	Jun-26	- Established and operationalized Women in Science Research and Innovation Grant Scheme supporting 5 projects with total budget of 569,950,874Frw for 5 projects 90% (511,339,114Frw) of the projects budget already disbursed to host institutions and implementation of the 5 projects are on good track - Limited budget compared to the set targets of 15 projects expected to have been supported - There is a need to review targets and harmonize targets set in implementation plan vs targets set in Logical framework and also align yearly targets to the overall targets of five years
21	Establish and support research implementation scheme toward commercialization	At least 40 projects with products and services commercialized	Number of projects supported	0	20 projects	Jun-26	- Established and supported the operationalization of a scheme to implement Research and innovation grant and program for commercialization scheme that supported and managed 5 projects with total budget of 285,000,000frw. 4 projects supported towards commercialization under support RISA Fund - A report on potential projects for commercialization produced in collaboration with MINICT and University of Rwanda and submitted to the line ministry of NCST - Business plans developed by grantees potential for commercialization through support by NCST (trainings) - Opportunities explored with RSSB for potential funding for commercialization - Round table with Private sector clusters to explore opportunities for commercialization of innovations - Limited budget compared to the set targets of 40 projects expected to have been supported. There is a need to review targets and harmonize targets set in implementation plan vs targets set in Logical framework and also align yearly targets to the overall targets of five years

NCST Strategic Plan 2023-2029 Details of key achievements from 01st July 2023 to June 2026
Legend: 80-100% is green, 60-79 is yellow, and <60 is red

22	Establish a framework to support innovation growth through incubation services	At least 25 projects are supported through one (1) framework developed and approved to support innovation growth through incubation services	Number of projects supported through incubation services	0	15 projects	Jun-26	13 projects potential for commercialization supported through pre-incubation services		
23	Establish competitive STI and R&D awards to build excellence	At least 40 awards are provided to improved quality and % of research and innovations to improve quality and excellence.	Number of Competitive awards	17	40 awards	Jun-26	Twelve (12) STI and R&D prestigious awards provided to the best researchers and innovators during 2nd Rwanda STI conference and during Women in Science event and during pre-council symposium		There is a need to review yearly targets and align them to the overall targets of five years
24	Develop and strengthen resource mobilization strategy	At least one (1) Strategy developed and approved	Strategy approved	Draft strategy	1	June, 2026	Concept note to develop and strengthen resource mobilization manual has been prepared, the resource mobilization manual was developed		The resource mobilization manual was developed pending for approval
25	Mobilize funding from various national and international development partners	At least 5 billion FRWs mobilized from development partners and funding organizations	Amount of funds (frw) mobilized	1,000,000,000	3,000,000,000	Jun-26	2,050,272,086 Frw mobilized from the range of July, 2023 to April, 2026 from different donors including: · RISA: 572,000,000 RWF · IDRC (new): 444,395,075 RWF · BMGF: 368,571,588 RWF · NRF-SA: 306,487,880 RWF supporting collaborative research. · ACTS: 285,000,000 RWF · IDRC: 43,800,000 RWF intended to support scaling and knowledge translation activities. · SFA: 23,339,282 RWF intended to support grand challenges Rwanda · East African Science and Technology: 6,678,261 RWF Potential future resource mobilization: IDRC, Welcome trust, GIZ, Master Card Foundation, Horizon EU (Mobility Grants) and others		Potential future resource mobilization: IDRC, Welcome trust, GIZ, Master Card Foundation, Horizon EU (Mobility Grants)

NCST Strategic Plan 2023-2029 Details of key achievements from 01 st July 2023 to June 2026							
Legend: 80-100% is green, 60-79 is yellow, and <60 is red							
26	Establish strategy for Private sector participation and investment in STI and R&D	A strategy Private sector participation and investment in STI and R&D developed	Strategy approved	0	1	June 2025	This was not yet however, the intervention is no more needed as there are other alternative guiding framework engaging private sector participating in investing in STI and R&D (Signed MoU between PSF and NCST, etc.)
27	Conduct and report on national STI, R&D and innovation Surveys	At least 3 reports on status of national STI and R&D have available data	Number of reports	3	3	June 2026	Two (2) reports on STI and R&D prepared and disseminated
28	Conduct foresight and STI data analytics studies to inform decision making	At least 2 STI foresight papers are published	Number of STI foresight papers	0	1 STI foresight papers are published	June, 2025	Draft paper submitted for review on Rwanda's projected research and development (R&D) growth towards innovation-driven social economic development: Insights from current innovation proxies has been developed
29	Develop and maintain a database of national researchers, innovators, scientists and R&D performers in all sectors	At least a report is developed, approved and regularly reviewed on the database information on national scientists, researchers and innovators	Database	0	1	June, 2026	Online Repository for Scientific Research and innovation output in Rwanda was developed and operationalized
							Name of intervention was reviewed as Online Repository for Scientific Research and innovation output in Rwanda

NCST Strategic Plan 2023-2029 Details of key achievements from 01st July 2023 to June 2026
Legend: 80-100% is green, 60-79 is yellow, and <60 is red

30	Develop STI and R&D communication strategy	One least one (1) communication strategy report is available, approved and regularly reviewed on STI and R&D.	Strategy approved	Draft communication	1	June, 2025	STI and R&D Communication Strategy was developed with the following strategic objectives: - Conduct Community Assessment to Support Outreach - Leverage Community Resources to Support Outreach - Promote Collaborative Partnerships and Networks - Recognize and Reward Excellence in Science Engagement - Implement Engaging Science Awareness Programs - Expand National Reach through Inclusive and Innovative Event	There is a need to do a follow up of the implementation of interventions in the implementation matrix of the strategy
31	Conduct community outreach and awareness programs	At least 15 programs on STI and R&D awareness are developed, approved and implemented	Number of Programs developed	7	9	Jun-26	Programs developed and implemented on STI and R&D awareness includes: - Organized live TV and radio talk shows to promote STI, including coverage during the 2nd STI Conference and a two-hour national broadcast on science and technology. - Conducted public awareness sessions on organic fertilizers and battery functioning, hazards, and mitigation, highlighting findings from NCST-funded research projects. - Produced and aired short documentaries showcasing impactful NCST-funded research projects under the Grand Challenges Rwanda initiative. - Developed an AI public awareness program, "Ubwenge Bukorano," for national broadcast to enhance understanding of emerging technologies.	The intervention looks as an activity rather than an intervention and it need to be reformulated and merged with intervention no 34

NCST Strategic Plan 2023-2029 Details of key achievements from 01 st July 2023 to June 2026						
Legend: 80-100% is green, 60-79 is yellow, and <60 is red						
32	Strengthen and promote sharing of research and innovation outputs through dissemination programs	At least 15 STI and R&D dissemination activities/ programs are conducted	Number of Programs developed	2	8	Jun-26
						- Disseminated The Regulations of the Executive Secretary N° 001/NCST/2024 of 07/11/2024 Governing Research" as published in the Official Gazette on 12/11/2024. - Disseminated reports on the RI-SA-funded project to strengthen Rwanda's research and innovation ecosystem. - Disseminated NCST activities through quarterly newsletters (Issues 007-018) - Organized a live TV and radio talk show celebrating achievements in science, technology, research, and innovation, with a focus on women in science. - Disseminated findings from field visits for monitoring and evaluation of funded projects. - Broadcast the "Biyogazi" documentary on biogas project innovations funded by NCST.
33	Develop a partnership strategy and framework for Public Private Partnership in STI	At least one (1) strategy on partnerships developed and approved	Partnership plan developed and approved	0	1	June, 2025
						Partnership plan developed and approved with national, regional and global partners to strengthen national STI and R&D performance including: - NCST collaborated with MINAGRI and RAB to co-organize the 2nd Rwanda STI Conference with the theme "Resilient Agriculture through STI for Improved Food Security and Nutrition" - Letter of Intent signed between NCST and MDU on 03rd April 2025. - NCST and UR-ACEIoT jointly secured a RI-SA-funded grant to implement a project titled "Strengthening Rwanda research and Innovation Ecosystem through Training, Coordination and Collaboration"
						This intervention looks as an activity rather than an intervention and it needs to be reformulated and merged with intervention no 33
						This intervention is no more needed as the resource mobilization strategy will cover the components of this intervention.

NCST Strategic Plan 2023-2029 Details of key achievements from 01st July 2023 to June 2026
Legend: 80-100% is green, 60-79 is yellow, and <60 is red

35	Develop a partnership framework to engage Rwandan scientists in Diaspora and other STI global experts	At least one (1) partnership framework is developed to engage Rwandan scientists in Diaspora and other STI global experts in STI and R&D programs.	Partnership strategy developed and approved	0	1	June, 2025	A draft Partnership Strategy to Engage Rwandan Scientists in Diaspora and Other STI Global Experts was developed with these objectives: - Map and Connect: Develop and maintain an updated database to identify diaspora scientists and match them with national priorities. - Strengthen Research & Innovation: Facilitate joint research, capacity-building, mentorship, and knowledge/technology transfer. - Foster Collaboration & Communication: Create inclusive platforms, associations, and networks to sustain engagement and inform policy and strategy design.	Need to conduct internal reviews and stakeholder consultations Launch a national diaspora database
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Annex 3: NCST Organizational Structure

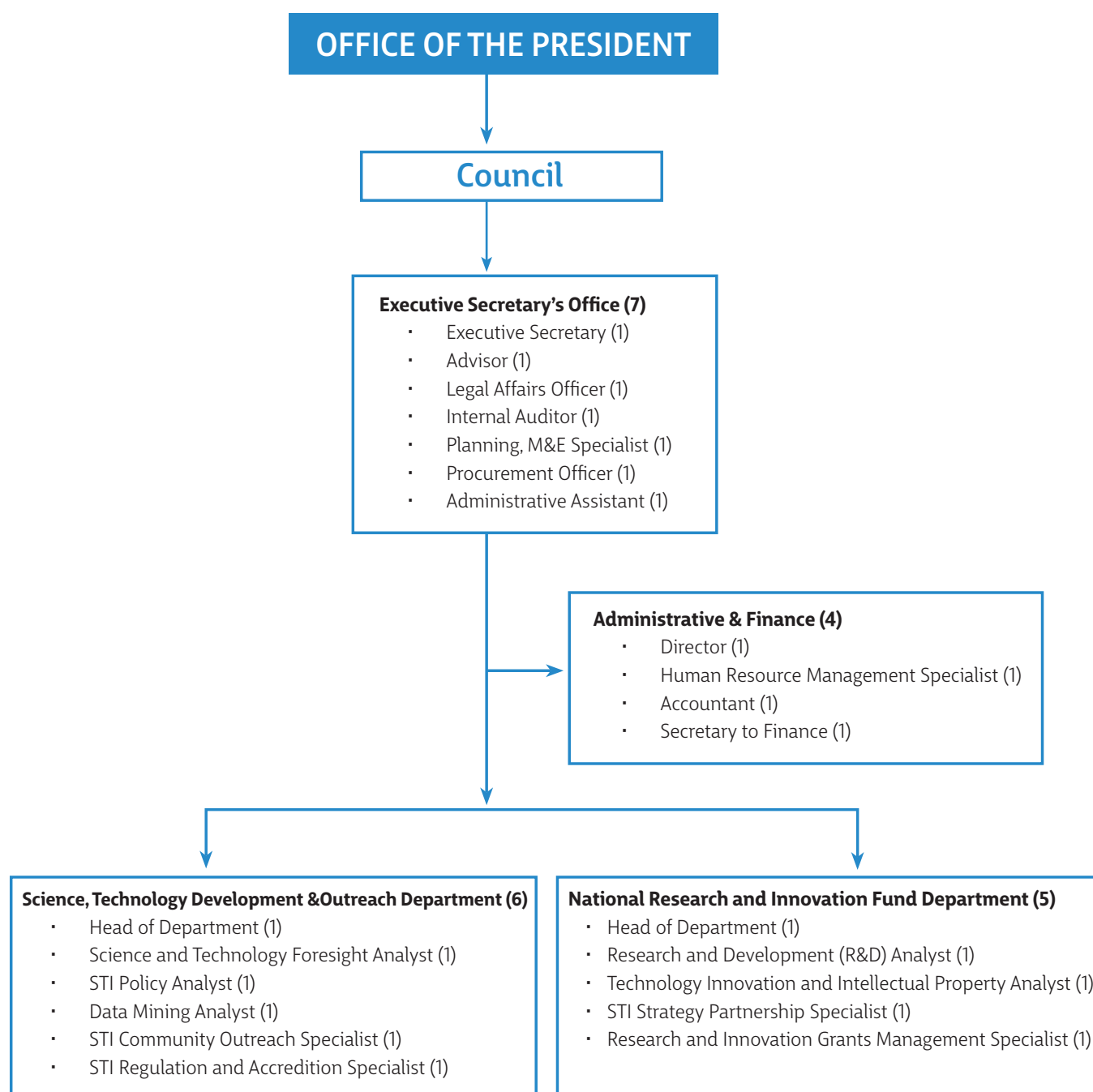


Figure 5: NCST Organizational Structure

