



REPUBLIC OF NAMIBIA

**MINISTRY OF HIGHER EDUCATION,
TECHNOLOGY AND INNOVATION**

REVISED

NATIONAL SCIENCE, TECHNOLOGY AND INNOVATION POLICY (NSTIP)

(2020-2030)

WINDHOEK, NAMIBIA

Cabinet Number: 10th/22.06.21/008

Harnessing Knowledge and Innovation for
Sustainable Development

ACKNOWLEDGEMENT

The Revised National Science, Technology, and Innovation Policy (NTSIP), for implementation during the period 2020 - 2030, has been developed through a multi-sectoral approach. The document was developed through a participatory and consultative process involving all stakeholders that are fundamental to the development and promotion of research, science, technology, and innovation in Namibia. The Government of Namibia is therefore thankful to all its stakeholders for their invaluable contributions during the consultation process and ensuring the successful conclusion of the revised NTSIP (2020-2030) document.

The technical inputs of the Business Enterprises unit at the University of Pretoria are greatly acknowledged.

CONTENTS

ACKNOWLEDGEMENT	I
FOREWORD	IV
STATEMENT BY THE EXECUTIVE DIRECTOR	VI
ACRONYMS AND ABBREVIATIONS	VIII
GLOSSARY OF CONCEPTS	X
EXECUTIVE SUMMARY	XI
1. INTRODUCTION	1
2. BACKGROUND	2
3. RATIONALE	3
4. ALIGNMENT	4
5. GUIDING PRINCIPLES OF THE POLICY	4
6. POLICY DIRECTION	6
6.1 Vision	6
6.2 Mission	6
6.3 Goal	6
7. OBJECTIVES	6
8. STRATEGIES	7
Objective 1: To Improve Policy, Legislative and Regulatory Environment	7
Strategy 1: Align STI legislative and regulatory environment and frameworks to national, regional and international development policies	7
Strategy 2: Build national capacity to enhance the use of scientific data for evidence-based policy development	7
Strategy 3: Improve standards of Technology Support Institutions	7
Objective 2: To promote strategic partnerships and collaborations	8
Strategy 1: Engage with private sector and build public-private partnerships	8
Strategy 2: Strengthen national, regional and international partnerships	8
Objective 3: To improve scientific and technical competences in Science, Technology, Engineering and Mathematics (STEM)	8
Strategy 1: Strengthen human resources in STEM and increase full-time equivalent (FTE) researchers	8
Strategy 2: Build capacity in the creation, management and use of intellectual property works	8
OBJECTIVE 4: To improve gender equality and mainstreaming in Science, Technology, Engineering and Mathematics (STEM)	8
Strategy 1: Establish and improve programmes that support women's participation in Science, Technology, Engineering and Mathematics (STEM)	8

Strategy 2: Support the role of women in innovation systems	8
Objective 5: To increase the utilization of scientific and technical knowledge for societal advancement	8
Strategy 1: Build strategic technology prospecting, fore-sighting and procurement	8
Objective 6: To promote a culture of science, technology, innovation and entrepreneurship	8
Strategy 1: Promote public understanding of science, technology and innovation	8
Strategy 2: Promote technology audits by enterprises	9
Strategy 3: Establish national innovation promotion schemes	9
Strategy 4: Strengthen small and medium scale enterprises	9
Objective 7: To accelerate research in the areas of technological advancement in TVET	9
Strategy 1: Support technical and vocational research skills	9
Strategy 2: Promote research to bridge the gap between TVET and higher education	9
Objective 8: To improve research and innovation infrastructure provision	9
Strategy 1: Develop and improve effectiveness of research and innovation infrastructure	9
Strategy 2: Develop and improve national platforms of research and innovation excellence	9
Objective 9: To increase scientific productivity and technological output	9
Strategy 1: Increase research and innovation for manufacturing and industrial competitiveness	9
9. IMPLEMENTATION ARRANGEMENTS	10
9.1 INSTITUTIONAL ARRANGEMENTS	10
9.2 LEGAL AND REGULATORY ARRANGEMENTS	13
9.3 RESOURCE MOBILIZATION	17
9.4 MONITORING AND EVALUATING FRAMEWORK AND REPORTING	17
9.5 ADVOCACY AND DISSEMINATION (COMMUNICATION STRATEGY)	17
10. IMPLEMENTATION ACTION PLAN	18
11. CONCLUSION	18
12. BIBLIOGRAPHY	18
13. APPENDIX 1: POLICY IMPLEMENTATION	20
14. APPENDIX 2: POLICY STRUCTURE	32
NOTES	33



FOREWORD

The Government of the Republic of Namibia recognizes that Science, Technology and Innovation (STI) are key to economic growth and sustainable development. Indeed, any successful economy, particularly in today's quest for knowledge-based economies; National STI capacity and a functioning NSI are the basic prerequisites. For Namibia, STI is a strategic imperative for national development, and for the attainment of the national development aspirations as spelled out in Vision 2030, the National Development Plans (NDPs), the Harambee Prosperity Plan and the Sustainable Development Goals (SDGs).

In 2016 the Ministry responsible for Science, Technology and Innovation, in collaboration with all stakeholders launched a consultative process to comprehensively review the National Policy on Research, Science and Technology of 1999 (NPRST) and to identify strengths and weaknesses of the National System of Innovation (NSI) in an effort to develop a revised and updated National Science, Technology and Innovation Policy 2020-2030 (NSTIP). Several prior review initiatives, including the 2005 review of the National Science and Technology System by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and a draft Framework Policy on Innovation in 2011 also provided the basis for developing the Revised NSTIP.

The review gives more emphasis to coordination and management of the Science, Technology and Innovation (STI), sectoral developments, collaboration, funding and the need to address the institutional frameworks that should foster interaction among the various elements of the NSI. The review also incorporates a programmatic approach to policy formulation. It emphasises the need for a coherent, systematic and comprehensive approach to the determination of technological programmes.

The key emphasis of the Revised NSTIP (2020-2030) is to entrench the production and application of science, technology and innovation in all sectors of the economy in order to achieve Namibia's development aspirations. I want to assure the nation that this revised Policy articulates clear strategies designed to promote Research & Development (R&D), technology development and strengthen innovation capacities.

I wish to commend the Directorate of Research and Innovation working in sync with the National Commission on Research, Science and Technology (NCRST) and various key stakeholders for the production of this invaluable document. The participatory approach to the formulation of the Policy has created awareness and provided opportunities for various stakeholders to articulate their views and make inputs into the new policy. The approach also promoted collective ownership of the policy by all stakeholders.

MHETI is mandated to promote research, science and technology in the country and to create a conducive environment for innovation. In line with this mandate, MHETI presents this policy document as the fundamental basis of its endeavours. I am confident that this Policy will crystallize our efforts to produce a generally innovation-driven and scientifically advanced society, thus contributing greatly towards strengthening Namibia's competitiveness towards an industrialized nation. To facilitate the implementation of this Policy, the Implementation Action Plan of the National Science, Technology and Innovation Policy 2020-2030 (IAP) has been developed. On behalf of the Government of Namibia I would like to encourage all stakeholders to join hands towards the effective implementation of the Revised NSTIP (2020-2030).



Dr Itah Kandjii-Murangi (MP)

***Minister of Higher Education, Technology and Innovation
Republic of Namibia***



STATEMENT BY THE EXECUTIVE DIRECTOR

The Contemporary Development Paradigm is characterized by strong systems for knowledge creation, strategic utilization of development relevant knowledge underpinned by dynamic and accessible data and information systems. As articulated in Namibia's long-term development aspiration, human resources development, in particular scientific and technical human resources development, is critical for sustainable economic development of Namibia.

The Ministry of Higher Education, Technology and Innovation is mandated to ensure that quality higher education as well as vocational and technical education are delivered to the Namibian nation through the advancement of quality projects and programmes. In addition, the Ministry is mandated to enhance Namibia's National System of Innovation. This would, in particular, included the provision of an adequate scientific and technical infrastructure; promotion and further development of innovation and a strong local research capacity. These functional areas are the cornerstones for sustainable economic growth and development as well as the reduction of poverty. The Ministry therefore has the critical role of promoting knowledge creation; skills development; equitable funding and access to quality tertiary education; and promoting research, science and technology and innovation activities.

In order for Namibia to remain on par with global scientific and technological developments and commitments, MHETI, in collaboration with NCRST and other key stakeholders, reviewed Namibia's 1999 Research, Science and Technology Policy, in order to give more emphasis to innovation capacity enhancement. The theme of the Research, Science, Technology and Innovation Policy is **"Harnessing Knowledge and Innovation for Sustainable Development"** and is aimed at entrenching the local production and application of science, technology and innovation in all sectors of the economy to achieve the goals as set out in Vision 2030, as well as responding to global Sustainable Development Goals. Furthermore, the explicit goal of the NSTI Policy is to "promote and foster the development and application of science, technology and innovation in all spheres of our society to advance socio-economic growth". In order to respond to the various challenges and opportunities of the

Fourth Industrial Revolution, which include big data and analytics, Internet of Things, Artificial Intelligence, among others; Namibia has to develop local high performance computing capacity and to enhance the creative and innovative thinking capacity.

The NSTI Policy is thus organized around six guiding principles, which are: (1) Ensuring NSTI Policy harmony; (2) Improve systems and institutional governance; (3) Promote strategic partnerships; (4) Develop human, institutional infrastructural capacity; (5) Ensure gender equity; and (6) Sustainable development. The Policy identifies nine key objectives to guide the process of implementation and in ensuring that Namibia develops a well-defined National System of Innovation.

The nine objectives include areas of improving the regulatory environment, strengthening partnerships, improving research and scientific competencies, ensuring gender equality, infrastructure development, and technological advances that are utilized for societal advancement.

Needless to say, that without strategic investment in higher education, technical vocational education and training as well as NSTI, Namibia's ability to transform the current raw/semi-processed driven economy to that of a knowledge-driven industrialized economy, will significantly be delayed.

In conclusion, I would like to call on all stakeholders to actively become engaged in the implementation of the NSTI Policy that shall have Namibia be a country that prides itself with a culture of science, technology, innovation and entrepreneurship.



Dr Alfred A. van Kent
Executive Director

ACRONYMS AND ABBREVIATIONS

AMT	Advanced Manufacturing Technologies
AU	African Union
BIPA	Business and Intellectual Property Authority
CRAN	Communications Regulatory Authority of Namibia
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GERD	Gross Expenditure on Research and Development
GRN	Government of the Republic of Namibia
HEI	Higher Education Institution
IAP	Implementation Action Plan of the Revised National Science, Technology and Innovation Policy (2019-2030)
ICT	Information Communication Technologies
IKS	Intellectual Knowledge Systems
IP	Intellectual Property
LA	Local Authorities
MAWLR	Ministry of Agriculture, Water and Land Reform
MDVA	Ministry of Defence and Veterans Affairs
MEAC	Ministry of Education, Arts and Culture
MEFT	Ministry of Environment, Forestry and Tourism
MF	Ministry of Finance
MFMR	Ministry of Fisheries and Marine Resources
MGEPEWSW	Ministry of Gender Equality, Poverty Eradication and Social Welfare
MHETI	Ministry of Higher Education, Technology and Innovation
MHSS	Ministry of Health and Social Services
MICT	Ministry of Information and Communications Technology
MIRCO	Ministry of International Relations and Cooperation
MIT	Ministry of Industrialisation and Trade
MME	Ministry of Mines and Energy
MPE	Ministry of Public Enterprises
NAS	Namibian Academy of Sciences
NCCI	Namibia Chamber of Commerce and Industry
NCD	Non-Communicable Diseases
NCHE	National Council for Higher Education
NCRST	National Commission on Research, Science and Technology

NDP	National Development Plan
NGOs	Non-Governmental Organizations
NIPAM	Namibia Institute of Public Administration and Management
NMA	Namibia Manufacturing Association
NPC	National Planning Commission
NPRST	National Policy on Research, Science and Technology of 1999
NQA	Namibian Qualification Authority
NRIF	National Research and Innovation Fund
NRST	National Research, Science and Technology
NRSTF	National Research, Science and Technology Fund
NRSTIF	National Research, Science, Technology and Innovation Fund
NSA	Namibian Statistics Agency
NSFAF	Namibia Students Financial Assistance Fund
NSI	National System of Innovation
NSTIP	National Science, Technology and Innovation Policy (2020-2030)
NTA	National Training Authority
NUST	Namibia University of Science and Technology
OAG	Office of the Attorney General
OP	Office of the President
OPM	Office of the Prime Minister
R&D	Research and Development
SADC	Southern Africa Development Community
SDG	Sustainable Development Goals
SMEs	Small and Medium Enterprises
STEM	Science, Technology, Engineering and Mathematics
STI	Science, Technology and Innovation
STISA	Science, Technology and Innovation Strategy for Africa
TB	Tuberculosis
TBA	To be announced
TVET	Technical and Vocational Education and Training
TVETCs	Technical and Vocational Education and Training Centres
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
WISETO	SADC Charter on Women in Science, Engineering and Technology Organization

GLOSSARY OF CONCEPTS

Commission: National Commission on Research, Science and Technology.

Entrepreneurship: Research, science or technological organisation, institute, society or other body, whether corporate or unincorporated, and whether in the public or private sector characterized by the taking of financial risks in the hope of profit; enterprising and the introduction and utilization of new products, processes, practices and services that create value in the economy and/or organization.

Enterprise: Any research, science or technological organisation, institute, society or other body, whether corporate or unincorporated, and whether in the public or private sector having or showing the ability or desire to try out new, unusual ways of doing or achieving business and or research.

Facility or facilities: To serve a specific function affording a convenience or service.

Fund: National Research, Science, Technology and Innovation Fund.

Innovation: The process of producing new or significantly improved goods, services, processes, marketing methods, organisational methods or the like; or translating an idea or invention into valuable goods, services, processes, marketing methods, organisational methods or the like, and includes social innovation.

National System of Innovation: Interactions between public and private sector institutions as well as linkages between policies and resources that enable the production and utilization of innovation in the country.

Research: An undertaking intended to generate, preserve, augment, improve or extend knowledge in the scheduled fields by means of scientific investigations and methods, but it excludes activities undertaken to which a legally recognised right of privilege applies.

Research and experimental Development (R&D): Comprises of creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge.

Research institute: An organisation, institute, society or other body, whether corporate or unincorporated, and whether in the public or private sector, which engages in research in any scheduled field of science or scheduled field of technology as a regular or ordinary feature of its business or activities and includes a 'researcher'.

Science: The systematic study of nature, society and behaviours of material and the physical universe based on observation, experimentation and formulation of laws to describe these facts in general terms, and includes applied science, formal science, natural science and social science.

Technology: The study, knowledge and application of scientific principles and discoveries in the design, production and utilisation of goods and services; in the organisation of human activities; and to meet the goals for sustainable development.

Technology Support Institutions: Institutions or bodies that directly or indirectly support technology development and innovation.

EXECUTIVE SUMMARY

Developing science, technology, and innovation (STI) capacity is one of the key enablers that promotes the ability of countries to deliver essential public goods, such as food, water and energy security, access to health and access to information and education for all. Promoting access to new and appropriate technologies should assist to achieve continuous improvements in living conditions, which are essential for the most vulnerable of the Namibian population, and drive productivity gains which ensure rising incomes.

STI serves as a crucial driver of attaining prosperity and improved national competitiveness. Identified technological gaps need to be closed by using existing technologies to promote competitiveness of enterprises and industries. Technological knowledge and skills are cumulative and depend on good education and research capabilities. STI is one of the important prerequisites to ensure a continuous process of structural change that leads to economic diversification, envisaged growth, poverty reduction, employment creation and prosperity for all.

The Revised NSTIP is a policy that replaces the National Research, Science and Technology Policy of 1999. It aims at strengthening the country's National System of Innovation (NSI) and has been developed through a stakeholders' consultative process including all regions and sectors of Namibia. It served to review the relevance and effectiveness of the National Research, Science and Technology Policy of 1999, and strengths and weaknesses of the NSI. The review process identified specific policy measures and related institutional adjustments that are required to strengthen the NSI to spur scientific research, technological competence and innovation in the country.

The overall objective of this Revised NSTIP (2020-2030) is to grow Namibia's NSI into a dynamic and strong configuration of strategic partnerships that produce, use and govern STI for inclusive, technological and sustainable development towards societal advancement.

The objectives contain twenty strategies to promote the NSI and the Government of the Republic of Namibia aims to restructure the R&D institutional configuration and create mechanisms for strengthening links between public R&D and industry. The twenty strategies are sequenced in such a way as to ensure that there is a gradual improvement in the country's capacities to leverage STI to attain sustainable development and industrial development as envisaged in Vision 2030. The sequencing is not necessarily an indication of investment priorities, but rather a pragmatic approach to achieving realistic outcomes over the next five years.

The Policy will be implemented in 5-year cycles through the Implementation Action Plan, (IAP), of the Revised National Science, Technology and Innovation Policy 2020-2030 which is developed in tandem with the National Development Plans (NDPs). The IAP resembles a programme, or time bound intervention similar to a project, but which cuts across sectors, themes or geographic areas. It uses a multi-disciplinary approach, involves multiple institutions and may be supported by several different funding sources.

The IAP is essentially a 'toolbox' for realizing the NDPs and Vision 2030. The Ministry responsible for STI will provide technical and administrative leadership for the implementation of the IAP in collaboration with a cross section of stakeholders guided by the mandates and primary responsibilities of their respective Offices, Ministries and Agencies (OMAs), private sector institutions and civil society organizations.

1. INTRODUCTION

The Revised National Science, Technology and Innovation Policy (2020-2030) (NSTIP) has its core mission as to entrench the production and application of science, technology and innovation in all sectors of the economy to achieve the goals as set out in Vision 2030, national development plans and the global Sustainable Development Goals (SDGs).

The policy was specifically designed to promote investment in R&D, technology development and innovation activities. A sequenced range of policies will be instituted and implemented to build the nation's capabilities for scientific research, technology prospecting and development, and the introduction and application of new products, processes and services. Focus will be on investing in building a critical mass of fulltime researchers, technicians and engineers who will be dedicated to searching for and applying knowledge and innovation to address sustainable development challenges while also enhancing Namibia's contribution to the global pool of scientific and technical knowledge. The Revised NSTIP (2020-2030) will focus on R&D programmes funded by the government, industry, non-governmental organisations and donors to address national challenges of poverty eradication, youth unemployment, social inequalities and related sustainable development imperatives.

Namibia, like many countries, faces social, economic, environmental and developmental challenges such as climate change, loss of biological diversity, water scarcity and drought, food insecurity, malnutrition and HIV&AIDS. Designing and implementing effective policies to address the challenges require scientific evidence and technical information. Evidence-based policy is indeed critical for sustainable development in Namibia. This Policy outlines specific measures that will guide the country to build and use capacity for evidence-based policymaking. Emphasis is put on actions that will increase the participation of Namibian scientists in policy processes, improve government's abilities to handle socio-economic aspects or issues associated with new technologies, particularly biotechnology and nanotechnology. This would build national capacities to undertake technology fore-sighting and procurement.

Section 2 will give a background to the policy review, while Section 3 indicates the rationale for replacing the NRSTI Policy of 1999 and the formulation in the context of Namibia's Vision 2030, NDPs and the Harambee Prosperity Plan (2016/2017 - 2019/2020). Section 4 includes to the alignment to legal frameworks/instruments be it national, regional, international, protocols and conventions ratified by Namibia. Section 5 elaborates on the key fundamentals on which the policy is anchored in regard to the aspirations of the country.

Section 6 clearly states the Vision, Mission and Goals of the Revised NSTIP (2020-2030). It states the desired end results that the policy aims to achieve to make Namibia an innovation-driven and knowledge-based economy. Section 7 and 8 outline the nine objectives and twenty strategies to achieve the above goal.

Section 9, the Implementation Arrangements, outlines the different frameworks and arrangements for the implementation of the policy. This includes the administrative and institutional structures, legal and regulatory arrangements as well as Monitoring and Evaluation plan. The roles and responsibilities of each of the stakeholders are also carefully looked at and assigned accordingly. Sub-sections will deal with Institutional Arrangements/Framework,

Legal and Regulatory, Resource Mobilisation, Monitoring and Evaluation framework and Reporting and Advocacy and Dissemination (Communication Strategy) sections.

Section 10 deals with the Implementation Action Plan of the National Science, Technology and Innovation Policy (2020-2030) IAP (2020-2030) which state the outputs, key indicators, baseline data and time frames that cut across sectors, themes or geographic areas, as well as use multi-disciplinary approaches. It involves multiple institutions supported by several different funding sources to achieve the achievements of the objectives. Section 11 will be the conclusion of the Revised NSTI Policy which is followed by the annexure and bibliography.

2. BACKGROUND

Although Namibia's National System of Innovation (NSI) has grown in size and complexity, the institutional landscape has not stimulated scientific growth and technological dynamism. The current links between universities, R&D institutes and industry are weak. Private sector participation in R&D is limited while a weak entrepreneurial and innovation culture is a barrier to job creation and economic diversification. Whereas Namibia has various sectoral policies for STI, these are not well coordinated and implemented, hence the failure to impact the country's development priorities. The NSI also lacks a well-defined information management system, with reliable STI indicators and statistics that facilitate performance monitoring and impact evaluation over the short-, medium-, and long-terms.

Namibia has a wide range of opportunities to attain its Vision 2030—to become an industrialized, prosperous and high growth economy—and secure the global (SDGs) and aspirations of the African Union (AU) as articulated in Agenda 2063.

Firstly, the country experiences political stability and relatively good governance¹. Since becoming independent in 1990, Namibia adopted a progressive Constitution and held peaceful presidential and parliamentary elections.

Secondly, Namibia is an upper middle-income country with good macroeconomic conditions. The economy has performed relatively well over the past two decades despite shocks and a slowdown attributed to the global economic crisis of the past decade.

Thirdly, Namibia has deepened its participation in the Southern Africa Development Community (SADC), AU and the United Nations (UN). It has also established numerous bilateral arrangements with many countries around the world. The country's trade and economic relations have grown considerably and Foreign Direct Investment (FDI) inflows increased over the past two decades. This has exposed Namibia's economy to a global pool of scientific knowledge and new technologies; and has widened possibilities of spurring industrialization and export-led development.

Lastly, there has been a resurgence of attention to science, technology and innovation (STI) as critical components in national economic change and development. The Government of Namibia recognizes that Vision 2030 will not be attained without investments in STI. This is manifested in the integration of STI considerations into Vision 2030, and the National Development Plans (NDPs) as well as organizational developments associated with the operationalization of the National Commission on Research, Science and Technology

(NCRST) in 2013, the transformation of the former Polytechnic of Namibia into the Namibia University of Science and Technology (NUST) and the creation of the Business and Intellectual Property Authority (BIPA).

Namibia also adopted a number of regional and continental strategies that emphasize the role of STI in sustainable development. These include the African Union (AU), Agenda 2063 and the related Science, Technology and Innovation Strategy 2012-2024 (STISA 2024) as well as the Southern Africa Development Community (SADC) Protocol on Science, Technology and Innovation (2008).

The MHETI in collaboration with the NCRST are facilitating the review of the country's national policies for STI and strengthening the National System of Innovation (NSI). In 2013, the NCRST operationalized the National Research, Science and Technology Fund (NRSTF), which is established in terms of the Research, Science and Technology Act (Act 23 of 2004) and coordinated the development of the National Programme on Research, Science, Technology and Innovation (NPRSTII) for the period 2014/2015 to 2016/2017. The Commission is also investing in a wide range of other measures, including conducting the national Research and Development (R&D) survey.

This policy is based on the review of the NRST Policy of 1999 and the NSI. The NSTIP policy aims at mainstreaming STI considerations into all facets of Namibia's socio-economic structure and activities. It will be a core part of the tools that the country will use to achieve Vision 2030: "a prosperous and industrialized Namibia, developed by her human resources, enjoying peace, harmony and political stability."² The Vision 2030 document emphasizes the role of STI in the achievement of the nation's aspirations or goals. It states that by 2030 Namibia will have an education and training system that is geared to developing relevant skills in fields of science, mathematics and engineering; and having a highly skilled technical workforce to drive industrialization. The development framework also outlines a range of measures that will be instituted to build a strong research and innovation system. The measures include increased financing of research in national institutions, incentives for enterprises to engage in research and technological innovation; and strengthening of regional and international cooperation in science and technology.

3. RATIONALE

Since its adoption of the National Policy Research, Science and Technology Policy (NPRST) of 1999, many changes have taken place within the nation's socio-economic and political fabric, as well as in the global geopolitical setup. The Revised NSTIP policy replaces the National Research, Science and Technology Policy of 1999 to ensure sets of policy instruments and institutional arrangement integrate STI in national socio-economic development processes in accordance to the highest priority.

The Revised NSTIP is formulated in the context of Namibia's Vision 2030, NDPs and the Harambee Prosperity Plan (2016/2017 - 2019/2020) and provides comprehensive national STI policy to respond to changes taking place within the nation's socio-economic and political fabric, as well as in the global geopolitical setup.

The Revised NSTIP is a policy covering three interrelated domains: science policy, technology

policy and innovation policy. The NSTIP is founded on a conceptual framework espousing the National System of Innovation (NSI) approach—a metaphor that enables the policy to deal with the systemic nature of science, technology and innovation activities and related institutional arrangements. This eschews the linear approach to organizing national activities around stand-alone research programmes and places emphasis on improving the quality and intensity of interactions of all institutions—public and private, formal and informal—engaged in the production, procurement, introduction and application of economically valuable knowledge.

Thus, a national system of innovation can only be judged as healthy if the knowledge, technologies, products, services and processes have been converted into increased wealth by industry and business, and into an improved quality of life of society.

4. ALIGNMENT

The Revised NSTIP (2020-2030) has been developed and adopted to respond to imperatives emerging from Vision 2030, the NDPs, SDGs, the national policies, National Acts such as the Research, Science and Technology Act of 2004 (Act 23 of 2004), various sectoral plans and the regional, international, protocols and conventions ratified by Namibia as well as alignment to Southern African Development Community (SADC), the African Union, the New Partnership for Africa's Development (NEPAD) United Nations, and the Commonwealth bodies.

The NRST Policy of 1999 is founded on a clear conceptual framework and contains explicit policy measures for the promoting and governing of technological development and innovation. The Revised NSTIP (2020-2030) has articulated specific policy measures that will ensure that investments in scientific research have a direct focus on addressing national socio-economic challenges and taking advantage opportunities that exist both nationally and internationally. Government recognizes that there is a wide range of desirable but not necessarily feasible policy measures. The Revised NSTI Policy outlines those measures that the Government will be able to efficiently and effectively implement over the next eleven years. It is not about statements of intent, of what is desirable to develop the NSI but what is achievable given Namibia's current and projected human resource, institutional and infrastructural capacities. The implementation of the Revised NSTIP will be inspired by gains made over the past two decades. While the Revised NSTIP replaces the NRST Policy of 1999, there will be a gradual introduction of new policy measures to reduce unnecessary discontinuation of effective policy activities initiated prior to the implementation of the Revised NSTIP.

5. GUIDING PRINCIPLES OF THE POLICY

The design and implementation of the Revised NSTIP (2020-2030) is guided by the following principles:

1) Policy harmony

Policy coherence and effective policy implementation are critical to the attainment of the goals set in this policy and Vision 2030 in general. Therefore, it is important to build coherent

policy, legislative and regulatory frameworks that are needed for a strong dynamic national research and innovation system. This will require constant up to date policy instruments for education and training in STEM, intellectual property protection, specific technology policies for new and emerging technologies, and sectoral policy frameworks that promote scientific research and technological innovation. Key to this are the reconfiguration and strengthening of the current institutions, the creation of effective mechanisms that promote inter-ministerial articulation and synergies, the strengthening of executive leadership for STI, and the building of active participation of the legislature in ensuring executive accountability.

2) Governance

To achieve policy coherence and ensure that measures articulated in this policy are implemented, it is important for the Government to establish appropriate institutional arrangements between regional councils, local authorities, public and private sector institutions. A functioning and productive national research and innovation system is largely characterized by intense institutional linkages and collaborations between public research institutes and universities, between university and private companies, between public research institutes and companies, and intensified collaborations among public institutions in general. The development of a common platform and formal procedures for communication, consultation and participation between all role players is required to plan, implement, monitor and manage STI, R&D and innovations nationally.

Research and innovation thrive if there is adequate, predictable and sustainable or long-term funding. Namibia needs adequate increased financial resources dedicated to research and innovation. Its gross expenditure on R&D is less than 0.5% of the GDP, way below the target of 2% of the GDP that was set by the strategies of the African Union and SADC.

3) Partnerships

Globalization, relatively high costs of scientific research and the increasing convergence of technologies make it almost mandatory for countries, both developed and developing, to invest in STI partnerships and cooperation in general. For developing countries such as Namibia partnerships in research and innovation are crucial for leveraging and using the growing pool of scientific knowledge, have access to modern technologies and build endogenous capabilities.

4) Human, institutional and infrastructural Capacity

Research and innovation infrastructure, including equipment, facilities and networks, and technology standards are crucial for the growth and performance of the National System of Innovation. STI, R&D and innovation require new facilities, particularly laboratories, and equipment of different kinds, as well as, depend on integration of various networks. Related to infrastructure, technology and technical standards are important to spur innovation and industrial competitiveness. Developing, efficiently utilizing and maintaining good STI infrastructure and technical standards are thus critical for a country such as Namibia.

The existence of an adequate number of fulltime equivalent researchers and technicians well as practicing engineers is critical to the productivity and dynamism of any national research and innovation system. TVET can make an important contribution to skills, as well as to human resource development in a scientific productivity and technological economy.

5) Gender equity

A gender and equity sensitive approach has the potential to define appropriate interventions for men and women, youth, children, the elderly, and other previously disadvantaged, marginalized and vulnerable communities and people with disabilities. All STI interventions shall aim to systematically address their concerns through gender and equity analysis and planning. The interventions shall be designed to enable an inclusive equal participation in, and benefit from STI development efforts.

6) Sustainable development

The economic competitiveness and industrialization of Namibia are to a large measure based on building the country's manufacturing capabilities. Manufacturing, which is much about the transformation and value-addition of Namibia's natural assets, as well as exploitation of new advanced manufacturing technologies to produce goods and services efficiently, is key to creating new jobs or youth employment, increasing high value technology exports, diversifying economic activities, and lifting many households out of poverty.

The successful transition to a knowledge-based, industrialized and prosperous country will address a wide range of societal challenges. The national development intervention should prioritize the attainment of SDGs with emphasis on ending poverty and hunger, improving human health and wellbeing, improving access to clean water and sanitation facilities, access to environmentally sound energy, and enhancing environmental sustainability.

6. POLICY DIRECTION

6.1 Vision

Namibia is an innovation-driven, scientifically advanced and industrialized nation by 2030.

6.2 Mission

To entrench the application of science, technology, and innovation in all sectors of the Namibian economy to achieve the goals of Vision 2030.

6.3 Goal

The goal of this Policy is to promote and foster the development and application of science, technology and innovation in all spheres of our society to advance socio-economic growth.

7. OBJECTIVES

The overall objective of this Revised NSTIP (2020-2030) is to grow Namibia's NSI into a dynamic and strong configuration of public and private institutions that produce, use and govern science, technology and innovation for sustainable development. This policy contains nine objectives:

1. To improve policy, legislative and regulatory environment
2. To promote strategic partnerships and collaborations
3. To improve scientific and technical competences in Science, Technology, Engineering and Mathematics (STEM)

4. To improve gender equality and mainstreaming in Science, Technology, Engineering and Mathematics (STEM)
5. To increase the utilization of scientific and technical knowledge for societal advancement
6. To promote a culture of science, technology, innovation and entrepreneurship
7. To accelerate research in the areas of technological advancement in TVET
8. To improve research and innovation infrastructure provision; and
9. To increase scientific productivity and technological output.

8. STRATEGIES

Namibia aspires to be a prosperous, industrial and high growth economy by 2030 that is driven by manufacturing of high value export. Recent studies show that Namibia has a relatively small national system of innovation (NSI) characterized by a few public R&D institutions, higher education institutions comprising of two public universities, a few vocational training centres, industry that is largely foreign owned and local Small and Medium Scale Enterprises. The attainment of Vision 2030 goals will involve a transitioning into a knowledge-based economy, investment in R&D by national science and technology enterprises and through enhancing scientific and technological innovations in its public, private and academic sectors. The strategies for this Revised NSTIP (2020-2030) should involve the promotion of linkage and collaboration between public and the private sector working to complement each other, to make the NSI function and productive.

The objectives contain twenty strategies to grow the NSI and the Government of the Republic of Namibia will restructure the R&D institutional configuration and create mechanisms for strengthening links between public R&D and industry.

Objective 1: To improve policy, legislative and regulatory environment

Strategy 1: Align STI legislative and regulatory environment and frameworks to national, regional and international development policies

Develop and review public policies pertaining to STI to ensure that they are aligned to national, regional and international development policies. Policy awareness will be raised through advocacy and public awareness campaigns.

Strategy 2: Build national capacity to enhance the use of scientific data for evidence-based policy development

Establish programmes for training in science, technology, and innovation policy development. Develop guidelines on the procurement and use of scientific evidence in policymaking and development of national plans through the national academy of sciences.

Strategy 3: Improve standards of Technology Support Institutions

Assess and improve standard setting mechanisms of technology support institutions to improve technology prospecting and procurement quality.

Objective 2: To promote strategic partnerships and collaborations**Strategy 1: Engage with private sector and build public-private partnerships**

Invest in programmes that support collaborations that directly add value to R&D and innovation activities of Namibian institutions, particularly public universities, R&D institutes and companies.

Strategy 2: Strengthen national, regional and international partnerships

Support and increase funding R&D and innovation activities through building effective national, regional, and international partnerships.

Objective 3: To improve scientific and technical competences in Science, Technology, Engineering and Mathematics (STEM)**Strategy 1: Strengthen human resources in STEM and increase full-time equivalent (FTE) researchers**

Invest in post-graduate training and fellowship programmes dedicated to STEM, focusing on national development priorities.

Strategy 2: Build capacity in the creation, management and use of intellectual property works

Develop and implement programmes that support researchers, technicians, legal practitioners, and entrepreneurs in the management and use of intellectual property rights.

Objective 4: To improve gender equality and mainstreaming in Science, Technology, Engineering and Mathematics (STEM)**Strategy 1: Establish and improve programmes that support women's participation in Science, Technology, Engineering and Mathematics (STEM)**

Establish and improve programmes that support women's participation in science education, science careers and as leaders and decision makers.

Strategy 2: Support the role of women in innovation systems

Design, develop and implement gender-responsive innovation support programmes.

Objective 5: To increase the utilization of scientific and technical knowledge for societal advancement**Strategy 1: Build strategic technology prospecting, fore-sighting and procurement**

Strengthen institutions to facilitate multi-disciplinary scientific research. Establish technology parks and information centres with a focus on national priorities in STI.

Objective 6: To promote a culture of science, technology, innovation and entrepreneurship**Strategy 1: Promote public understanding of science, technology and innovation**

Develop and conduct programmes geared towards the promotion of STI among the youth and communities. Establish STI demonstration centres to popularize and sensitize STI in society and promote public dialogues between scientist and citizens.

Strategy 2: Promote technology audits by enterprises

Establish initiatives that promote techno-preneurship to increase the creation and growth of technology-based enterprises. Capacitate and invest in SMEs to conduct audits and develop technology strategies.

Strategy 3: Establish national innovation promotion schemes

Establish national and regional platforms, incubation centres and technology transfer offices to spur innovation and entrepreneurship. Encourage universities and TVETCs to offer tertiary education programmes on innovation and entrepreneurship at certificate, diploma and degree levels.

Strategy 4: Strengthen small and medium scale enterprises

Provide incentives to enterprises that procure new ideas and R&D services from research institutions and TVETCs. Increase the support to enterprises that introduced new products, practices, and services into the economy, as well as those that export locally developed new products.

Objective 7: To accelerate research in the areas of technological advancement in TVET**Strategy 1: Support technical and vocational research skills**

Provide incentives to industry to increase bilateral and multilateral capacity-building cooperation in TVET to enhance high level TVET skills, resources, facilities, productivity and international competitiveness in a scientific productivity and technological economy.

Strategy 2: Promote research to bridge the gap between TVET and higher education

Develop and implement programmes that are aimed at using of evidence-based research to bridge the gap between TVET and higher education.

Objective 8: To improve research and innovation infrastructure provision**Strategy 1: Develop and improve effectiveness of research and innovation infrastructure**

Conduct a comprehensive assessment of the current state of R&D infrastructure. Strengthen support for infrastructure improvement for existing R&D institutions and development of new R&D institutions.

Strategy 2: Develop and improve national platforms of research and innovation excellence

Establish a network of excellence in science and innovation, located in regions of strategic importance based on regional needs and comparative advantages.

Objective 9: To increase scientific productivity and technological output**Strategy 1: Increase research and innovation for manufacturing and industrial competitiveness**

Increase manufacturing output by providing support to institutions that harness the use of technology in manufacturing. Encourage SMEs to use advanced manufacturing technologies to improve output and competitiveness.

9. IMPLEMENTATION ARRANGEMENTS

Policy coherence and effective policy implementation are critical to the attainment of the goals set in this policy and Vision 2030 in general. To achieve policy coherence and ensure that measures articulated in this policy are implemented, it is important for the Government to establish appropriate institutional arrangements. The most crucial arrangements are the reconfiguration and strengthening of the current implementing agencies, the creation of effective mechanisms that promote inter-ministerial articulation and synergies, the strengthening of executive and presidential leadership for STI, and the building of active participation of the legislature in ensuring executive accountability. In this regard the Government of the Republic of Namibia will implement the following institutional reforms:

9.1 Institutional Arrangements

The Ministry responsible for RSTI and the pre-existing agencies, together with the public universities facilitate the implementation, monitoring and evaluation of the Revised NSTIP and promotion of inter-sectoral policy implementation coherence, as the Revised NSTIP will require the active participation of all role players of the National System of Innovation (NSI). The main actors in the NSI are from:

INSTITUTION	ROLE
Ministry of Higher Education Technology and Innovation	As custodian and implementing authority, the institution will provide technical and administrative leadership in collaboration with a cross section of stakeholders guided by the mandates and primary responsibilities of their respective Ministries, Offices and Agencies (OMAs), private sector institutions and civil society organizations.
National Commission on Research, Science and Technology	Provides for coordination, promotion and development of Science, technology and innovation and facilitate linkages/collaborations.
Business and Intellectual Property Authority	Focal point for registration of business and industrial property, and to administer and protect business and intellectual property rights.
Communications Regulatory Authority of Namibia	Contributes to the protection of Intellectual Property Rights in the electronic communication sector.
Local Authorities	Providing public/government land and infrastructure to companies that establish R&D and technology development facilities in the country.
Ministries with STI components: Ministries of Agriculture, Water and Land Reform; Ministry of Defence and Veterans Affairs; Ministry of Fisheries and Marine Resources; Ministry of Health and Social Services; Ministry of Information and Communications Technology; Ministry of Mines and Energy and Ministry of Safety and Security	Directorates responsible for RSTI and/or engineering to contribute to determining national R&D and innovation priorities for implementation programmes.

INSTITUTION	ROLE
Ministry of Education, Arts and Culture	Increases gender equity in STEM in school curricula.
Ministry of Environment, Forestry and Tourism	Directorates responsible for RSTI to contribute the Bio-economy strategy and to determining national R&D and innovation priorities for implementation programmes.
Ministry of Finance	Provides for incentives and financial directives towards funding science, technology and innovation. Provide support/facilitate import and or export of scientific research equipment, customs and excise duties.
Ministry of Gender Equality, Poverty Eradication and Social Welfare	Increases gender equity in STEM careers, governance, strategies and STI decision-making positions.
Ministry of Industrialization and Trade	Providing infrastructure and resources to increase the creation and growth of technology-based enterprises for developing technologies and/ or techniques for value addition and advanced manufacturing technologies in priority sectors as in the national Growth at Home strategy.
Ministry of International Relations and Cooperation	Increasing the focus on science and innovation into the Ministry of International Relations and the country's foreign policy in general.
Ministry of Public Enterprises	Promotes best practices of creating and growing enterprises that generate and commercialize technology. Supporting public sector to conduct technology audits and design firm-level innovation plans.
Namibia Chamber of Commerce and Industry	Supporting research and innovation projects that aim at developing technologies and/or techniques for value addition in priority sectors as in the national Growth at Home strategy. Increasing local industrial engineering companies using advanced manufacturing technologies.
Namibia Institute of Public Administration and Management	Promotes STI policies advocacy and public dialogues on STI between scientists and citizens.
Namibia Manufacturing Association	Promotes SMEs in-house R&D and forge collaboration with public research institutes to introduce scientific output into the economy. Increasing local industrial engineering companies using advanced manufacturing technologies.
Namibia Students Financial Assistance Fund	Funds students pursuing multi-disciplinary scientific research.
Namibian Qualification Authority	Evaluates and accredits courses on innovation and entrepreneurship at certificate, diploma and degree levels.

INSTITUTION	ROLE
Namibian Statistics Agency	Conducts biennial national R&D and Innovation surveys to cause the production of appropriate and relevant indicators for use to monitor the state of and trends in NSI developed.
Namibia Training Authority	Science, technology, innovation and engineering sections to contribute to determine national research and development priorities for implementation programmes. Supporting research and innovation projects that aim at developing technologies and/or techniques for value addition in priority sectors as in the national Growth at Home strategy. Designs and offers courses on innovation and entrepreneurship at certificate, diploma and degree levels.
National Council for Higher Education	Increases representation of private companies in the governance of STI, increase international bilateral and multilateral STI cooperation agreements, active participation in SADC and AU processes and programmes. Develop and maintain databases on international and national STI cooperation agreements, external funding for domestic research and innovation secured and number of Namibians trained in postgraduate studies in STEM subjects in partner countries.
Non-governmental Organizations	Enhance multi-disciplinary scientific research. Establish technology parks and information centres with a focus on national priorities in STI.
Private Sector	Supporting research and innovation projects that aim at increasing local industrial engineering using advanced manufacturing technologies by bilateral and multilateral capacity-building cooperation in TVET and research institutions. Conduct technology audits and design firm-level innovation plans.
Public Universities (Namibia University of Science and Technology and University of Namibia)	Universities should promote, monitor and evaluate joint research projects among public institutes, and joint technology development and transfer activities between public and private sector institutions, exchange and mobility of scientists and engineers, technology licensing agreements, and sharing of information and technology infrastructure.

INSTITUTION	ROLE
Regional Councils	Providing public/government land to companies that establish R&D and technology development facilities in the country. Establish technology parks, information centres and platforms for innovation and entrepreneurship focusing on areas of science, technology, and innovation in areas of national priority.
SADC WISETO - Namibia Chapter Governing Body	Accelerates gender equity in STEM careers, governance, strategies and STI decision-making positions.
Small and Medium Enterprises	Promote SMEs in-house R&D and forge collaboration with public research institutes to introduce scientific output into the economy.
Technical and Vocational Education and Training Centres	Design and offer courses on innovation and entrepreneurship at certificate, diploma and degree levels to engage in applied research. Establish platforms for innovation and entrepreneurship and technology transfer offices which should aim at commercializing R&D results.
The Development Bank of Namibia	Creating incentives for private companies that promote STI and invest in R&D and technology development. Programme developed for supporting technology-based SMEs that introduce new products, practices and services into the economy as well as those that export locally developed new products.

9.2 Legal and Regulatory Arrangements

The National Science, Technology and Innovation Policy is primarily anchored on the Constitution of the Republic of Namibia. The implementation of this Policy is to provide guidance on investments in, to align the strategies of the different stakeholders in, and to ensure optimal impact of STI, R&D and innovation in various sectoral plans. Additionally, the policy recognises existing national laws and legislations, and thus it was developed in alignment with pertinent laws and legislations as listed in the table below.

LEGISLATION / FRAMEWORK	CUSTODIAN	RELEVANCE TO THIS POLICY
Disaster Risk Management Act (Act 10 of 2012)	Office of the Prime Minister	Provides for an integrated and coordinated disaster management approach that focuses on preventing or reducing the risk of disasters, mitigating the severity and emergency preparedness as well as post disaster recovery.
Basic Education Act (Act 3 of 2020)	Ministry of Education, Arts and Culture	To ensure equitable inclusive quality education and lifelong learning; to promote and protect the right of learners to education.

LEGISLATION / FRAMEWORK	CUSTODIAN	RELEVANCE TO THIS POLICY
Environmental Management Act (Act 7 of 2007)	Ministry of Environment and Tourism	Promotes sustainable management of the environment and utilization of natural resources.
Growth at Home (Namibia's Execution Strategy for Industrialisation) 2012	Ministry of Trade and Industry	Growth at Home provides a road map for the execution of Namibia's Industrial Policy.
Harambee Prosperity Plan (2016/2017 - 2019/2020)	Office of the President	The targeted action plan to accelerate development in STI and R&D priority areas
Higher Education Act (Act 22 of 2003)	Ministry of Higher Education, Technology and Innovation	Coordinates and supervises the higher education system and promote establishment and development of higher education institutions of national interest.
Namibia Students Financial Assistance Fund Act (Act 26 of 2000)	Ministry of Higher Education, Technology and Innovation	Availing financial assistance to eligible Namibian students at approved institutions of higher learning.
Namibia University of Science and Technology Act (Act 7 of 2015)	Ministry of Higher Education, Technology and Innovation	To contribute to knowledge, economic and social development through globally relevant, professional, technological and career-focused higher education, and effective community engagement, with an emphasis on industry involvement.
Namibia's Industrialization Policy (2012)	Ministry of Trade and Industry	Defines the role, incentives, skills development and financing of the government and stakeholders towards STI, R&D and industrialisation, regional integration and policy coordination, implementation and evaluation.
National Development Plans	National Planning Commission	Directives towards achieving inclusive, sustainable and equitable growth for the Namibian society and economy to change from an input-dependent economy into a knowledge-based economy.
National Energy Policy, (2017)	Ministry of Mines and Energy	To enable access to modern, clean, environmentally sustainable, and affordable energy services for all Namibian inhabitants.

LEGISLATION / FRAMEWORK	CUSTODIAN	RELEVANCE TO THIS POLICY
National Health Policy Framework 2010-2020	Ministry of Health and Social Services	To provide equitable access to basic social welfare and health care as a right of every citizen.
National Human Resources Plan (2010 – 2025)	Office of the Prime Minister	To develop human capital and build institutional capacity to absorb the labour force necessary to meet the demands of the economy and address the problem of human resources skills shortages across all industrial sectors.
Overarching ICT Policy (2009)	Ministry of Information & Communication Technology	To strengthening Namibia's position in the dissemination and use of ICT.
Renewable Energy Policy for Namibia, (2017)	Ministry of Mines and Energy	To enable access to modern, clean, environmentally sustainable, and affordable energy services for all Namibians to meet its short-term and long-term national development goals.
National Intellectual Property Policy and Strategy 2019 -2024	Ministry of Industrialization, Trade and SME Development	To establish the framework conducive for innovation and competitiveness through IP generation, protection and commercialization. It defines the parameters of the use of IP as a strategic catalyst to accelerate transformational growth at home. The Policy sets Namibia's vision for IP, identifies objectives and key strategies and establishes an institutional framework to serve as the coordinating body in IP related policy and strategic matters.
Research Science and Technology Act (Act 23 of 2004)	Ministry of Higher Education, Technology and Innovation	To provide for the promotion, co-ordination and development of research, science and technology in Namibia.
SADC STI Protocol (2008)	Southern African Development Community	The aim is to promote development and harmonisation of science, technology, and innovation policies, advocating investment in research and development and promoting public awareness of science and technology.
STISA 2024	African Union	To commit to building and/or upgrading research infrastructures; enhancing professional and technical competencies; promoting entrepreneurship and innovation; and providing an enabling environment for STI development in the African continent.

LEGISLATION / FRAMEWORK	CUSTODIAN	RELEVANCE TO THIS POLICY
Sustainable Development Goals (SDGs)	United Nations	To address global challenges Namibia faces, including those related to poverty, inequality, climate change, environmental degradation, peace and justice.
The Constitution of the Republic of Namibia, Adopted on February 9, 1990	Republic of Namibia	The fundamental law of a sovereign independent Namibia.
National Policy on Micro, Small and Medium Enterprises in Namibia 2016 -2021	Ministry of Industrialization, Trade and SME Development	To create an enabling business environment for Namibian MSMEs, thus fostering sustainable employment creation and income generation through training; improved access to finance, technology and markets; enhanced capacity to innovate; and improved entrepreneurial skills.
UN Framework Convention on Climate Change, (1994)	United Nations	Implement commitments towards mitigation of climate change mitigation and financial resources and transfer of technology to enhance economic and social development and poverty.
University of Namibia Act (Act 18 of 1992)	Ministry of Higher Education, Technology and Innovation	To provide higher education, undertake research, advance and disseminate knowledge both nationally and internationally.
Vision 2030	Office of the President	The long-term planning framework of government and is based on the concept of total and balanced development. It will guide all planning mechanisms, which consist of the national development plans, medium- term reviews and the national budget.
Vocational Education and Training Act (Act 1 of 2008)	Ministry of Higher Education, Technology and Innovation	Regulates provision of vocational education and training.

9.3 Resource Mobilization

The Government of Namibia recognises that adequate resources, both human and financial, are required in order to effectively implement the RNSTI Policy, as per its commitment in the Fifth National Development Plan (NDP 5) to contribute 1% of GDP to research and innovation by 2022. The following strategies have been identified to achieve efficient resource mobilization:

- Make adequate budgetary provision based on the identified needs in achieving the objectives of the RNSTI Policy and the NDP5 in terms of research and innovation.
- Mobilise adequate human and financial resources through partnerships with development partners (international, regional and national) and private actors.
- Attract multilateral and/or bilateral, donor funding opportunities and establish collaborations with funding organisations.
- Promote the establishment of Public and Private Partnerships (PPP) and engage the private sector to contribute to science and technology funding incentives.
- Establish a tax incentives programme to leverage private sector investment in research and innovation.
- Increase efficiencies in resource allocation and utilization by streamlining funding of research and innovation projects to avoid unnecessary redundancies and duplication.
- Ensure that funds collected through levies from existing Statutes are consolidated and allocated to the National Research, Science, Technology and Innovation Fund.
- Role players identified as key stakeholders towards the implementation of the RNSTI Policy shall mobilise necessary resources for fulfilling their roles and responsibilities.

9.4 Monitoring and evaluating framework and reporting

To realize the objectives of this Revised NSTIP, the following activities will be undertaken under the supervision of the MHETI in collaboration with the NCRST:

- Development of monitoring and evaluation indicators at all levels of policy implementation
- Carrying out continuous data collection, analysis and periodic reporting to the custodian and implementing ministry and the National Planning Commission of Namibia, as well as the public media; and
- The Revised NSTIP will have a clear logical framework designed for each strategic objective showing the expected outputs, activities, Monitoring and Evaluation (M&E) tasks, means of verification, the implementing agencies and/or networks, timeframe and resource requirements to help track and monitor progress in the implementation of the NSTIP.

9.5 Advocacy and dissemination (communication strategy)

The Revised NSTIP will be popularized among all national, regional and international research and innovation stakeholders. The MHETI in collaboration with the NCRST will develop an appropriate plan for STI communication and outreach activities. A key aspect of communication and outreach is to regularly report progress and showcase achievements through examples that have relevance and potential impact.

10. IMPLEMENTATION ACTION PLAN

The Revised NSTIP is intended to serve as the national strategic framework for the country's STI development up to the year 2030. The achievement of its objectives and targets will depend upon success of its implementation by all stakeholders. In order to facilitate the implementation of this policy, an implementation plan will be developed every five years through a stakeholder's consultative process. The implementation plan is attached as Appendix 1.

11. CONCLUSION

The Revised NSTIP is an outcome a broad-based participatory process that involved stakeholders from many backgrounds. It is one of the instruments that Namibia will use to realize Vision 2030 and National Development Plans. It is not a stand-alone policy but forms part and parcel of the country core regimes. The Revised NSTIP will also enable the country to domestic continental and regional strategies, STISA and SADC Science, Technology and Innovation (STI) Strategy. The Revised NSTIP is the basis on which Namibia will engage in international and bilateral cooperation on STI.

12. BIBLIOGRAPHY

AU (2014) Science, Technology and Innovation Strategy for Africa (STISA-2024).

AUC (2015) Agenda 2063 Final Edition, The Africa We Want.

NEPAD (2014), African Innovation Outlook 2014. New Partnership for Africa's Development and African Union.

OECD (2006), Governance of Innovation Systems, Volume 3: Cases Studies in Cross-Sectorial Policy. Organization for Economic Cooperation and Development, Paris.

Republic of Namibia (2004), Namibia Vision 2030: Policy Framework for Long-term National Development. National Planning Commission, Windhoek, Namibia.

Republic of Namibia, Harambee Prosperity Plan 2016/17-2019/20.

Republic of Namibia (2012), Namibia's Fourth National Development Plan, NDP4 2012/23-2016/17. National Planning Commission, Office of the President, Windhoek, Namibia.

Republic of Namibia (1999), National Policy on Research, Science and Technology. Ministry of Higher Education, Vocational Technology, Science and Technology, Windhoek, Namibia.

Republic of Namibia (1999), Enabling Safe Use of Biotechnology. Ministry of Education, Vocational Training, Science and Technology. Windhoek, Namibia.

Republic of Namibia (2012), Namibia's Industrial Policy. Ministry of Trade and Industry, Windhoek, Namibia.

Republic of Namibia (2019), National Intellectual Property Policy and Strategy 2019-2024. Ministry Of Industrialization, Trade and SME Development, Windhoek, Namibia.

Republic of Namibia (undated), Growth at Home: Namibia's Execution Strategy for Industrialization. Ministry of Trade and Industry, Windhoek, Namibia.

Republic of Namibia (2004), Research, Science and Technology Act, 2004. Government Gazette 23 December 2004, No. 3356.

Republic of Namibia (2011), Research, Science and Technology Regulations: Research, Science and Technology Act, 2004. Ministry of Education, Government Gazette, 11 November 2011, No. 4828.

Republic of Namibia (2014), The National Programme on Research, Science, Technology and Innovation 2014/15-2015/16, p. 69. NCRST, Windhoek, Namibia.

Republic of Namibia (2016), Namibia's National System of Innovation: A Review of Policy Regimes and the Institutional Landscape, NCRST, Windhoek, Namibia.

SADC (2008) Protocol on Science, Technology and Innovation, https://www.sadc.int/files/3013/5292/8367/Protocol_on_Science_Technology_and_Innovation2008.pdf.

UN (2013) United Nations Partnership Framework (UNPAF) 2014-2018-A Partnership for Growth, Job Creation and Equity. United Nations Development Programme, Windhoek, Namibia.

13. APPENDIX 1: POLICY IMPLEMENTATION

Policy Objective 1: To improve policy, legislative and regulatory environment

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR					BUDGET (NAD '000)					CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	
1. Align STI legislative and regulatory environment and frameworks to national, regional and international development policies	1. Develop IKS policy & implementation plan	Approved national IKS policy	% of IKS policy developed (milestone completed/ progress made)	50%***	100%	100%	100%	100%	100%	50	250	100	0	0	MHETI, NCRST
	2. Develop space science and technology policy & implementation plan	Approved national space science and technology policy	% of space science and technology policy developed (milestone completed/progress made)	50%***	100%	100%	100%	100%	100%	50	250	100	0	100	MHETI; NCRST
	3. Develop public sector innovation policy	Approved public sector innovation policy	% of public sector innovation policy developed***	0%***	100%	100%	100%	100%	100%	1 000	0	0	0	0	OPM; UNAM
	4. Develop bio-economy strategy	Bio-economy strategy developed	% of bio-economy strategy developed	10%***	100%	100%	100%	100%	100%	10	500	0	0	0	MHETI; NCRST; MEFT
	5. Develop national science, technology, and innovation infrastructure strategy	Approve national science, technology, and innovation infrastructure strategy	% of national infrastructure strategy developed**	50%	100%	100%	100%	100%	100%	50	250	0	0	0	MHETI; NCRST
	6. Develop national research ethics policy	Approved national ethics policy	% of Ethics policy developed***	0%***	80%	100%	100%	100%	100%	0	400	0	0	0	MHETI; HEI, NCRST
	7. Develop IP policy	Approved national IP policy	% of IP policy developed***	20%***	50%	100%	100%	100%	100%	50	200	0	0	0	MHETI; BIPA
	8. Identify local R&D needs	Identify and articulate R&D priorities in the NPRSTI	R&D priorities in each five-year NPRSTI (3 in total)	0	1	1	2	3	3	0	0	0	0	0	MHETI; NCRST, OMA with research components
	9. Invest 50% of the national annual R&D budget on sustainable development priorities	Plan developed to invest 50% of the national annual R&D budget dedicated to regional and community sustainable development priorities	Plan developed	0	0	0	1	1	1	0	0	0	100	0	MHETI; NCRST, OMA with research components
	10. Develop national innovation challenge	List of the R&D institutes in the sectoral ministries and the public universities should be required to participate in the national innovation challenge	List of the R&D institutes in the sectoral ministries and the public universities	0	0	1	1	1	1	0	0	0	0	0	MHETI; NCRST, HEI and OMA with research components
	Developed national innovation challenge with implementation action plan	National innovation challenge implementation action plan	0	0	0	1	1	1	0	0	0	150	TBA	MHETI; NCRST	

*** Assessment of progress made: Benchmarking and Drafting of Zero-draft Proposal (30%), Consultation (50%) and Validation (70%), Cabinet Submission (80%), Approval and Publication (100%)

Policy Objective 1: To improve policy, legislative and regulatory environment

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR						BUDGET (NAD '000)						CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026			
					30%	50%	70%	80%	100%	0	250	250	0	100	100		
2. Build national capacity to enhance the use of scientific data for evidence-based policy development	1. Develop strategic documents for the establishment of the Academy of Sciences	Strategic documents developed	% of strategic documents developed	0%	50%	70%	80%	100%	0	250	250	0	100	100	MHETI; NCRST		
	2. Increase national fellowship for training in science, technology, and innovation policy analysis	National fellowship for training in science, technology and innovation policy analysis developed	National fellowship developed	0	0	0	1	0	0	0	0	100	TBA	MHETI and HEI			
	3. Conduct biennial national R&D and innovation surveys	Biennial national R&D and innovation surveys conducted	Biennial national R&D surveys reports completed	1 R&D report	2	2	3	3	0	1 000	0	1 000	3 000	MHETI; NSA, NCRST,			
			Biennial national innovation surveys report completed	0 Innovation report	2	2	3	3	70	1 000	0	1 000	3 000				

*** TORs and Minutes of Meetings 20%, Concept note approved 30%, Statutes approved 100%

Policy Objective 1: To improve policy, legislative and regulatory environment

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR						BUDGET (NAD '000)						CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026			
					0	0	0	1	1	0	0	0	10	0			
3. Strengthen Technology Support Institutions	1. Review of regulatory agencies and related legislation for standards setting and enforcement, technology assessment	Report on review of regulatory agencies and related legislation for standards setting and enforcement, technology assessment, and importation of equipment to identify completed	Report completed	0	0	0	1	1	0	0	0	0	10	0	MHETI, NCRST and HEI		
	2. Strengthen Namibia's technology prospecting and procurement capacity	Strategy for Namibia Standards Institution's capacity to become a key node for technology prospecting and procurement implemented	Strategy implemented	0	1	1	1	1	0	500	0	0	0	0	MHETI, HEI, MIT, MPE, MF, NSI		
		Implementation plan for technology prospecting and procurement completed	Implementation plan completed	0	0	1	1	1	0	50	200	0	0	0	MHETI, HEI, MIT, MPE, MF		

Objective 2: To promote strategic partnerships and collaborations

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR					BUDGET (NAD '000)					CUSTODIAN/ RESPONSIBLE ENTITY	
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026		
1. Engage with private sector and build public-private partnerships	Representation of private sector on STI governance committees and councils increased	% of private sector representation	11.4%***	15%	20%	25%	40%	50%	TBA	TBA	TBA	TBA	TBA	TBA	MHETI; NCRST	
	1. Increase representation of private sector on STI governance committees and councils	Doubled research institutes-industry collaborations	TBA	-	-	50%	100%	150%	TBA	TBA	TBA	TBA	TBA	TBA	MHETI; NCHE	
	2. Create incentives for private companies that promote STI and invest in R&D and technology development	Annual roundtables on public private STI partnerships to enable HEI, R&D institutes, and industry to develop common agendas and joint R&D and innovation programmes	Workshops conducted	0	1	1	5	3	100	100	100	500	300		MHETI, HEI	
	3. Provide government land to companies that establish R&D and technology development facilities in the country	Incentives for private companies that promote STI and invest in R&D and technology development created	Incentives created	0	0	3	3	4	0	0	0	0	0	0	0	OPM, MHETI, MIT, MPE, MF
	4. Establish scheme for allocation towards R&D and Innovation activities	Public/private R&D facility established	Public/private R&D facility established	0	0	0	1	1	0	0	0	500	500	500	0	OPM, MHETI, HEI, MIT, MPE, MF, Regional Councils
	5. Provide innovation vouchers to companies, particularly SMEs, to procure R&D services from HEI and R&D institutions.	Establishment of tax relief scheme	0	0%	100%	100%	0	0	0	0	0	0	0	0	OPM, MHETI, MIT, MPE, MF	
		Innovation vouchers provided	Innovation vouchers for companies to procure R&D services from HEI and R&D institutions provided	0	0	0	1	0	0	0	0	100 000	TBA	TBA	MIT, MPE, MF	

*** National Survey of Research and Experimental Development Main Analysis and Statistical Report 2013/14

Objective 2: To promote strategic partnerships and collaborations

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR						BUDGET (NAD '000)					CUSTODIAN/ RESPONSIBLE ENTITY									
					2021/ 2022		2022/ 2023		2023/ 2024		2024/ 2025		2025/ 2026		2021/ 2022		2022/ 2023		2023/ 2024		2024/ 2025		2025/ 2026		
2. Strengthen national, regional, and international partnerships	1. Invest in domestic R&D and innovation programmes	Government invested in and supported collaborations that directly add value to R&D and innovation activities of Namibian institutions, particularly public HEI, R&D institutes and companies.	% increase of Government contribution to GERD	N\$ 216.6 mil***	0%	2%	2%	6%	-	216 000	220 000	225 000	250 000	TBA	OMA with RSTI components										
		Long-term, mutually beneficial, and sustainable partnerships increased	% increase on long-term, mutually beneficial, and sustainable partnerships	To be determined by STI-IMS Portal	0	0	50%	100%	150%	0	0	500	1 000	15 000	MHETI; HEI, NCHE										
	2. Increase in international STI partnerships	Number of bilateral STI cooperation agreements signed with institutions in partner countries	% increase of research output from cooperation agreements	TBA	0	0	50%	100%	150%	0	0	500	1 000	15 000	MHETI; HEI, NCHE										
		External funding for domestic research and innovation secured through international partnerships increased	Double external funding for domestic research and innovation secured through international partnerships	N\$ 16 mil***	0%	10%	30%	100%	100%	0	100	300	1 000	TBA	MHETI; NCHE, NCRST and HEI										
	3. Increase the focus on science and innovation in the country's foreign policy	STI priority initiatives integrated in foreign policy	Number of countries to country STI bilateral agreements increased by 50%	0	0	1	4	4	0	0	0	TBA	TBA	TBA	MHETI, MFA, OPM, MIRC										

*** National Survey of Research and Experimental Development Main Analysis and Statistical Report 2013/14

Objective 3: To improve scientific and technical competences in Science, Technology, Engineering and Mathematics (STEM)

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR						BUDGET (NAD '000)					CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026		
1. Strengthen human resources in STEM and increase full-time equivalent (FTE) researchers	1. Invest in postgraduate and postdoctoral programmes	Research and innovation professional chairs created at universities	Research and innovation professional chairs created	0	1	2	4	9	0	1500	3000	6000	TBA	MHETI, HEI		
	2. Establish postdoctoral fellowships in key research fields	Number of full time equivalent /1000 population increased	Doubled number of full time equivalent	0.5	0.6	0.7	1.0	TBA	0	TBA	TBA	TBA	TBA	MHETI, HEI		
	3. Fund of postgraduate training programmes in STEM	Number of postgraduate degrees	Doubled number of postgraduate degrees	886 Masters and 104 PhDs	1000 Masters and 130 PhDs	1200 Masters and 160 PhDs	1800 Masters and 210 PhDs	TBA	0	TBA	TBA	TBA	-	MHETI, HEI, NSFAF & NCRST		
	4. Establish an annual joint call for applied research	Annual joint call launched	Annual call launched	0	1	2	7	10	0	50	50	250	150	MHETI, HEI, NIA		

Objective 3: To improve scientific and technical competences in Science, Technology, Engineering and Mathematics (STEM)

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR						BUDGET (NAD '000)					CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026		
2. Build capacity in the creation, management and use of intellectual property works	1. Train Namibian researchers, technicians, legal practitioners, and entrepreneurs in the management and use of intellectual property rights	Training courses on intellectual property management of tertiary institutions increased Researchers, technicians, legal practitioners and entrepreneurs holding IP qualifications from recognised tertiary institutions increased	Number of courses increased by 50% Number of researchers, technicians, legal practitioners and entrepreneurs increased by 50%	TBA by SIT-IVMS Portal TBA by SIT-IVMS Portal	5% 20% 50%	5% 20% 50%	5% 20% 50%	5% 20% 50%	5% 20% 50%	10 500 1 000	0 500 1 000	0 500 1 000	0 500 1 000	0 0 0	MHETI, HEI, NSGA, BIPA	
	Sponsorship of grants for qualifying training courses on intellectual property management of recognised tertiary institutions increased	Number of grants increased	Number of grants increased	0	5	15	30	50	TBA	0	0	0	0	0	BIPA, MHETI, HEI, NSFAF	

**** https://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=NA

Objective 4: To improve gender equality and mainstreaming in Science, Technology, Engineering and Mathematics (STEM)

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR						BUDGET (NAD '000)						CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026			
					1	1	1	1	1	0	3,000	3,000	3,000	3,000			
1. Establish and improve programmes that support women's participation in STEM	1. Establish SADC WISETO Namibia Chapter	SADC WISETO Namibia Chapter established	Chapter established	0	1	1	1	1	1	0	3,000	3,000	3,000	3,000	MHETI, NCRST		
	2. Develop a strategic plan for the SADC WISETO Chapter	Strategic plan developed and implemented	% of Strategic plan implemented % annual increase in Gender equity in STEM	0	50%	70%	80%	100%	100%	0	250	500	500	1000	MHETI, MEAC, MGEPEW, NCRST & SADC WISETO - NAMIBIA CHAPTER Governing Body		
				0	10%	20%	30%	80%	110%								

Objective 4: To improve gender equality and mainstreaming in Science, Technology, Engineering and Mathematics (STEM)

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR						BUDGET (NAD '000)						CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026			
					0	0	3	4	5	0	250	500	500	1000			
2. Support the role of women in innovation systems	1. Develop programmes for the participation and leadership of women in national and international innovation systems	Programmes develop and implemented	Number of programmes developed and implemented	0	2	3	4	5	0	0	250	500	500	1000	MHETI, MGEPEW, NCRST & SADC WISETO - NAMIBIA CHAPTER Governing Body		
	2. Establish innovation partnerships for industry wide change	Partnerships established	% of partnerships established	0	30%	50%	70%	80%	100%	0	250	500	500	1000	MGEPEW, NCRST & SADC WISETO - NAMIBIA CHAPTER Governing Body		
	3. Establish platforms for showcasing scientific innovations by women	Platforms established	% of platforms established	0	30%	50%	70%	80%	100%	0	250	500	500	1000	MGEPEW, NCRST & SADC WISETO - NAMIBIA CHAPTER Governing Body		

Objective 5: To increase the utilization of scientific and technical knowledge for societal advancement

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR					BUDGET (NAD '000)					CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	
1. Build strategic technology prospecting, and fore-sighting, and procurement	1. Support institutions to conduct multi-disciplinary scientific research	Annual calls on multi-disciplinary research launched	Number of research and policy papers produced	250	300	350	400	600	TBA	TBA	TBA	TBA	TBA	TBA	MHETI, NCRST HEI and NGOs
	2. Conduct a national technology fore-sighting exercise on key priority areas	National technology fore-sighting exercise conducted	% of national technology fore-sighting exercise completed****	0%	0%	90%	100%	100%	0	0	0	2 000	1	MHETI, NCRST	
	3. Establish technology parks and information centres focusing on national priorities in STI	STI parks and information centres established	STI parks and information centres	0	0	0	1	5	14	0	0	0	4 000	9 000	MHETI, NCRST, Regional Councils

**** Based on Thomson Reuter Web of Science

**** 20% national technology fore-sighting task force established, 40% TOR, investigation 90% & report 100%

Objective 6: To promote a culture of science, technology, innovation, and entrepreneurship

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR					BUDGET (NAD '000)					CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	
1. Promote public understanding of science, technology, and innovation	1. Develop and implement STI engagement strategy	STI engagement strategy developed	% of strategy developed	0%	50% of plan developed	100% of plan developed	100%	100%	100%	0	50	100	0	0	MHETI, NCRST & MEAC, Regional Councils
	STI engagement strategy implemented	% of strategy implemented	0%	0%	0%	100% implemented	100%	100%	500	500	500	500	500	MHETI, NCRST &	
	2. Establish STI demonstration centres	STI demonstration centres established	Number of STI demonstration centres established	0	0	0	1	5	14	0	0	0	0	4 000	MHETI, NCRST, MEAC
3. Promote public dialogues on STI between scientists and citizens	Public dialogues hosted	% participation rate/1000 population	0	0	20	40	60	75	200	200	200	200	200	200	MHETI, NCRST & NIPAM

Objective 6: To promote a culture of science, technology, innovation, and entrepreneurship

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR					BUDGET (NAD '000)					CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	
2. Promote technology innovation audits by enterprises	1. Establish a techno-preneurship promotion programme	A plan on enterprise technology audit designed	Plan designed	0	0%	100%	100%	100%	100%	0	0	100	TBA	TBA	MHETI, HEI, MIT, MPE, MF, OPM
		A training program on enterprise technology audit developed	% of national training program completed	0	0%	100%	100%	100%	100%	0	0	1 000	TBA	TBA	MHETI, HEI, MIT, MPE, MF, OPM
		Incentive scheme for private enterprises and SMEs to undertake audits and develop technology plan	% of incentive scheme completed	0	0%	100%	100%	100%	100%	0	0	500	TBA	TBA	MHETI, HEI, MIT, MPE, MF, OPM,

Objective 6: To promote a culture of science, technology, innovation, and entrepreneurship

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR					BUDGET (NAD '000)					CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	
3. Establish national innovation promotion schemes	1. Establish platforms for innovation and entrepreneurship	Innovation centres/hubs established	Innovation centres/hubs established	0	0	1	5	14	0	0	0	0	4 000	9 000	MHETI, NCRST, Regional Councils
		Annual national innovation summit hosted	Annual national innovation summit hosted	1	2	3	8	11	2 000	2 000	2 000	10 000	6 000	MHETI, NCRST, Private Sectors, SME	
		Courses on innovation and entrepreneurship at certificate and diploma level offered	Courses on innovation and entrepreneurship offered	0	0	2	2	0	0	0	0	0	0	0	MHETI, HEI, NGA and NTA
	2. Design and offer courses on innovation and entrepreneurship at certificate, diploma, and degree levels	Courses on innovation and entrepreneurship at certificate and diploma and degree levels offered	Courses on innovation and entrepreneurship offered	0	0	3	3	0	0	0	0	0	0	0	MHETI, NGA and HEI
	3. Establish technology transfer offices	Technology transfer offices established	Technology transfer offices at TVEICs and HEIs established	0	1	6	7	11	0	0	5 000	5 000	5 000	5 000	MHETI, NCRST, BIPA, NTA, HEIs

Objective 6: To promote a culture of science, technology, innovation, and entrepreneurship

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR						BUDGET (NAD '000)						CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026			
					4. Strengthen technical and vocational research skills	1. Conduct an assessment of innovation capabilities and activities of SMEs Plan for promoting innovation by SMEs developed 2. Provide innovation vouchers to companies, particularly SMEs, to procure R&D services from HEI and R&D institutions. 3. Promote SMEs in-house R&D and forge collaboration with public research institutes to introduce scientific output into the economy	Assessment of innovation capabilities and activities of SMEs conducted Innovation promotion plan developed Innovation vouchers provided Incentive scheme completed	Report completed Innovation promotion plan developed Innovation vouchers for companies to procure R&D services from HEI and R&D institutions provided % of incentive scheme completed	0 0 0 0	1 0 0 0	1 1 0 0	1 1 1 100%	1 1 0 100%	0 0 0 100%	0 0 0 100%	0 0 0 100%	

Objective 7: To accelerate research in the areas of technological advancement in TVET

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR						BUDGET (NAD '000)						CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026			
					1. Support technical and vocational research skills	1. Increase bilateral and multilateral cooperation in TVET 2. Increase bilateral and multilateral cooperation in TVET 3. Increase bilateral and multilateral cooperation in TVET	Joint technical committee with NIA, HEI and national R&D institutes established High level skills and innovation required identified TVET institutions and HEI with the state-of-the-art equipment and facilities equipped Bilateral and multilateral capacity-building cooperation in TVET increased Tax relief regulation for state-owned and private enterprises to venture into cooperation agreements completed	Technical Committee established**** Report completed Inventory list completed % of annual increase on number STI cooperation agreements % of tax relief regulation completed	0 0 0 0 0	1 1 0 10% 0%	1 1 1 10% 100%	1 1 1 1 0	1 1 1 TBA 100%	1 1 1 TBA 0	0 0 0 0 0	0 0 0 0 0	

**** Same committee as in Objective 3.1.5

Objective 7: To accelerate research in the areas of technological advancement in TVET

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR						BUDGET (NAD '000)					CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026		
2. Promote research to bridge the gap between TVET and higher education	1. Develop bridging programmes and new TVET qualifications on NQF level 4 and 5	Bridging programmes and new TVET qualifications on NQF level 4 and 5 developed	Bridging programmes developed	0	0	2	2	2	TBA	0	50	200	0			MHETI, NCHE, NQA, public HEI and INTA
					0	0	2	4	TBA	0	1 000	1 000	5 000			
					0	0	1	3	TBA	0	0	1 000	4 000	TBA		
			New TVET qualification on NQF level 4 developed	0	0	2	4	TBA	0	1 000	1 000	5 000				
			New TVET qualification on NQF level 5 developed	0	0	1	3	TBA	0	0	1 000	4 000	TBA			

Objective 8: To improve research and innovation infrastructure provision

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR				BUDGET (NAD '000)				CUSTODIAN/ RESPONSIBLE ENTITY			
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024		2024/ 2025	2025/ 2026	
1. Develop and improve effectiveness of research and innovation infrastructure	1. Develop and implement a national STI infrastructure strategy	National STI infrastructure strategy developed	% of national STI infrastructure strategy developed	70%	90%	100%					250				MHETI; NCRST	
	2. Develop a national STI – Information Management System	National STI infrastructure strategy implemented	% of national STI infrastructure strategy developed		0%	5%	20%								MHETI; NCRST	
		A national STI- Information Management System (STI-IMS) developed and populated	% STI-IMS completed ¹	10%	10%	20%	80%	100%			0	0	10	100	TBA	MHETI; NCRST
		A national inventory of equipment developed and updated	% of National inventory of equipment completed ²	0%	0%	30%	60%	100%			0	0	10	100	TBA	MHETI; NCRST
		Researchers, innovators and engineers have access to STI-IMS Portal	% of researchers, innovators and engineers in database have access to STI – IMS Portal	0%	0%	10%	20%	50%			0	0	0	0	0	HEI, NTA and industrial firms

***Assessment of progress made: Benchmarking and Drafting of Zero-draft Proposal (30%), Consultation (50%) and Validation (70%), Cabinet Submission (80%), Approval and Publication (100%)

1 STI-IMS development completed 10%; General information populated 20%; STI-IMS launched 30%; Researcher component online 40%; Research component on-line 50%; Grand management

component on-line 60%; Research Registration component on-line 70%; R&D survey component on-line 80%; Innovation survey component on-line 90% and R&D and Innovation reports 100%

2 STI-IMS national inventory of equipment development completed 30%; General information populated 60%; STI-IMS launched 80%; Researcher component online 100%;

3 STI-IMS platform development completed 30%; General information populated 60%; STI-IMS launched 80%; Researcher component online 100

Objective 8: To improve research and innovation infrastructure provision

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR					BUDGET (NAD '000)					CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	
					0	0	1	3	3	0	0	5 000	15 000	0	

Objective 9: To increase scientific productivity and technological output

STRATEGY	ACTIVITY	OUTPUT	KEY INDICATORS	BASELINE	TIMELINES AND TARGETS PER YEAR					BUDGET (NAD '000)					CUSTODIAN/ RESPONSIBLE ENTITY
					2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	2025/ 2026	
					0	0	0	100%	100%	0	0	0	0	TBA	
1. Increase research and innovation for manufacturing and industrial competitiveness	1. Support to institutions that harness the use of technology in manufacturing	Incentive scheme developed	% of incentive scheme completed	0	0	0	100%	100%	0	0	0	5 000	0	0	MHETI, NCRST, HEI,
	2. Create twinning programmes to match SMEs with large companies with manufacturing capabilities	Twinning programmes developed and implemented	Number of twinning programmes developed and implemented	0	0	1	4	7	>10	0	0	0	0	0	MHETI, NCRST, HEI,

14. APPENDIX 2: POLICY STRUCTURE



