



# SCIENCE GRANTING COUNCILS INITIATIVE IN SUB-SAHARAN AFRICA STRENGTHENING PARTNERSHIPS AMONG AFRICA'S SCIENCE GRANTING COUNCILS AND THE PRIVATE SECTOR

A BASELINE ASSESSMENT OF PUBLIC – PRIVATE PARTNERSHIPS IN RESEARCH AND SCIENTIFIC  
COOPERATION IN NAMIBIA

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February, 2018



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## Executive summary

The National Commission on Research Science and Technology (NCRST) was established by section 4 of Research Science and Technology Act, 2004 (Act no 23 of 2004). The NCRST is mandated with coordination, management and monitoring and evaluation of STI in Namibia. Namibia has an operational STI policy known as the National Policy on Research, Science and Technology (NPRST). The RST Act and the NPRST are supported by the NCRST Strategy (2014/15 - 2018/19) and a National Programme on Research, Science, Technology and Innovation (NPRSTI 2014/15 - 2016/17) and implementation plan.

Namibia's investment in STI is low with statistics pointing to less than 0.3% of its GDP allocated to Research. The country has set up an RST Fund to mobilize resources for STI activities and has successfully funded over 60 projects since its inception but this fund remains underfunded. Lack of proper coordination in the STI sector remains a huge challenge for the country with the NCRST charged with coordinating STI itself housed within a ministry with an obvious policy lacuna of how to engage with agencies in other ministries undertaking STI work. This is especially problematic because the NPTST allots roles and responsibilities across agencies with the NCRST having a coordinating role in a situation where these agencies report and work directly under other ministries.

Namibia's NCRST has partnered with a number of private sector and other players including the SME Bank to support SME's in Namibia, the Namibia Alliance for Improved Nutrition, NamPower Foundation, Demola Finland and Shell Namibia. The country also has Cooperative Education Unit (CEU), which provides linkages between academia and industry.

In terms of partnership with other Science granting Councils (SGCs), NCRST has signed Agreements and MoUs with three (3) African countries and has ongoing projects with them on different areas including knowledge exchange, STI indicator development among others.

Key recommendations from this study include setting in place a clear coordination framework and a review of policy to ensure coherence and better delivery of Namibia's STI agenda and socio-economic development as set out in Vision 2030. There is also need for broadening engagement with the private sector and strengthening of the academia-industry program (CEU) for increased partnerships as well as outputs.

## 1. Introduction and objectives of the baseline study

Namibia, located in Southern Africa, has made progressive steps in developing science, technology and innovation. This has been achieved through enacting laws and policies, setting up institutions on STI, funding research in Namibia and fostering collaboration with both public and private sector players locally and internationally. This baseline study, looking at the state of collaborations engaged in by the NCRST is conducted under Theme 3 of the Science Granting Councils Initiative (SGCI) on strengthening the capacity of Science Granting Councils (SGCs) to promote scientific cooperation with each other and with other science system actors, and to foster public-private research collaboration and exchange of knowledge. The SGCI seeks to strengthen capacities of SGCs in order to support research and evidence-based policies that will contribute to economic and social development.

The objectives of this study are to:

- i. Examine factors that constrain/facilitate public-private partnerships (PPPs) and knowledge transfer and scientific cooperation and collaboration among Councils.
- ii. Identify capacity and skill set gaps among the Councils in terms of designing, regulating, managing and providing quality assurance to PPP and cooperation projects.
- iii. Examine the legal, legislative, policy and institutional frameworks that underpin PPP and cooperation projects.

In the context of this baseline study PPP refers to a publicly-funded research collaboration among research and higher education organizations, such as universities, public funding agencies, such as SGCs and industry or private sector actors within a particular national context. On the other hand international collaborations of an SGC refers to a research partnership agreement that an SGC under study has formally established or started negotiations with other SGCs or international actors at the time of this study.

## 2. Methodology

This baseline study has been undertaken via a desktop study as one of four 'light studies' undertaken under Theme 3. This report is expected to inform the current status and assist Namibia to increase its collaboration and progress towards meeting its STI targets through providing a benchmark document.

## 3. State of collaborations in Namibia

### 3.1 Overview

Established in 2004, the National Commission on Research Science and Technology (NCRST) is the foremost STI public agency in Namibia. Its objectives, as outlined in the Research Science and Technology Act no 23 of 2004, are to:

- ensure the co-ordination, monitoring and supervision of research, science and technology in Namibia;
- promote and develop research, science and technology in Namibia;
- promote common ground in research, scientific and technological thinking across all disciplines, including the physical, mathematical and life sciences, as well as human, social and economic sciences;
- encourage and promote innovative and independent thinking and the optimum development of intellectual capacity of people in research, science and technology;
- ensure dedicated, prioritized and systematic funding for research, science and technology application and development in Namibia; and
- promote linkages between Namibia and international institutions and bodies on the development of research, science and technology

Apart from collaborating with others the NCRST has initiated a number of collaborative initiatives with other public research entities such as the Communications Regulatory Authority of Namibia (CRAN) on ICT research; the Namibia Students Financial Assistance Fund (NSFAF) to fund postgraduate research; the Namibia Standards Institution for quality assessment among others.

### 3.2 State of PPP collaborations

The NCRST is in partnership with a number of private sector players including SME Bank limited with the goal of supporting Namibia's SMEs. This is achieved through an 'entrepreneurship development programme, a business linkages programme which links SMEs to large corporate/commercial companies to further their growth and development, up-scaling of NCRST funded innovation projects that demonstrate potential for growth, and a programme that bridges support for SME Bank applicants to enhance their bankability through research and development (NCRST). Other partnerships include that with the Namibia Alliance for Improved Nutrition, NamPower Foundation and Shell Namibia.

In 2010, Namibia established a Cooperative Education Unit (CEU) to provide linkages between graduate students and industry. This program has aided in fostering linkages between universities and industry in Namibia.

For primary and secondary schools the NCRST is engaged in a project on Mathematics and Science Computer-based Learning Centres<sup>1</sup> across the country aimed at promoting interest in STI and nurturing young enthusiasts. The National Science, Technology and Innovation Festival and the Science Fair are also seen as ways of bringing together existing expertise on STI, private sector, civil society and other stakeholders engaged in the STI sector to increase visibility not only of its work but STI in general and use this as a basis for increased support to the sector. It is also worth noting that Namibia has the Namibia University of Science and Technology whose courses are STI-focused. Additionally 11 proposals by young innovators aged between 19 and 35 were recently funded after a call focusing on ICT and manufacturing technology. Outputs from their work are expected to spur further collaboration. Table 1 provides some of the recent PPP research projects, their themes and collaborators.

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<sup>1</sup> More than seven (7) such centres have already been set up.

**Table 1: Recent PPP research projects, their themes and collaborators.**

	Project Name	Partner	Year(s)	Theme	Outputs	Notes
1.	Intensification of research, development, mentorship and business development support	SME Bank Limited (SME Bank)	2016	Namibia's SME Sector support	Increased participation of SMEs in the formal economy	Activities are implemented through a Joint Technical Committee with representatives from both institutions
2.	Survey to determine the Nutrition Status of San Infants in Namibia	Namibia Alliance for Improved Nutrition (NAFIN)	2017	Nutrition	Survey Report	The survey was for 3 regions in Namibia (Omaheke, Oshikoto and Otjozondjupa). This is an ongoing project
3.	The National Science, Technology and Innovation Festival	Shell Namibia	2015	STI Festival support	STI Festival	The collaboration included support for the Secondary School winners of the <i>Big Innov8 Competition</i>  The festival is an annual event
4.	National Science Fair	NamPower Foundation		Popularization of science and technology among learners, communities and educators		The science fair is an annual event
5.	Demola	Demola Finland	2016	Innovation	Innovations in different sectors	The Demola model focuses on providing a platform for students/innovators to generate products or services that address socio-economic issues. This is done in collaboration with companies/industry. This is an ongoing long-term project

### 3.3 State of collaboration with other SGCs

Namibia collaborates with a number of African countries most notably South Africa with which it has a number of ongoing projects (See Table 1).

**Table 2: Namibia's collaboration with other countries**

	Country	Collaborating	Year (s)	Theme (s)	Output (s)	Amount	Notes
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		<b>Institution</b>					
1.	South Africa	Centre for Science, Technology and Innovation Indicators (CeSTII), Human Sciences Research Council	2017	Production of national indicators on science, technology and innovation	National indicators on science, technology and innovation		The collaboration is envisaged to enable learning exchanges, joint research projects and joint publication
2.	South Africa	Water Research Commission (WRC)	2017	Capacity building (through knowledge exchange), collaborative projects and technology transfer			
3.	South Africa	Technology Innovation Agency (TIA)		Capacity building			
4.	Botswana	Botswana Institute for Technology Research and Innovation (BITRI)		Knowledge exchange			
5.	Germany	German Research Foundation (DFG)		Capacity building and knowledge exchange			
6.	Mozambique	Fundo Nacional de Investigacao (FNI)	2017	Agro-processing, indigenous knowledge systems and mineral resources	Research outputs/reports		This was the first MoU signed under the auspices of the SGCI's collaborative partnerships subtheme.
7.	European Union – African Union Commission	IST-Africa initiative	2016	Collaborative research projects	Research products		
8.	UN	UNESCO	2012	Designing the funding mechanisms for	A funding mechanisms for		UNESCO and the NCSRT/Minis

				research, science and technology and developing STI indicators and a model to monitor and evaluate the digital platform	research, science and technology STI indicators and a model to monitor and evaluate the digital platform		try have had longstanding collaboration
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#### 4. Factors constraining and enabling collaboration and knowledge transfer between SGCs

Namibia’s Vision 2030 aims at industrialization with the aim of lifting Namibia to a high-income country through among other ways investing in research, development and innovation. In 2017, the Global Innovation Index<sup>2</sup> placed Namibia 97 out of 127 countries indicating low levels of outputs and outcomes in STI. Namibia is however committed to improve its Innovation outlook and recently funded 11 proposals by young innovators aged between 19 and 35 after a call focusing on ICT and manufacturing technology.

Even though a Research, Science and Technology (RST) Fund is in existence there is inadequate funding for Research and Development with figures showing that Namibia is below its own target of 0.3% of GDP let alone the AU’s 1% (NPRSTI, 2014). This has an impact on the ability of the NCRST to collaborate with other SGCs as well as the private sector.

The NCRST and other agencies and stakeholders developed the National Programme on Research, Science, Technology and Innovation (NPRSTI) for 2014/15 - 2016/17 to guide STI activities in an identified fifteen (15) priority research areas<sup>3</sup>. This basically sets out key areas for collaboration that act as pointers on what areas those interested can collaborate with the NCRST on. The NPRSTI sets out roles and responsibilities, targets and indicators, costs and a monitoring and evaluation framework to track progress. In a SWOT analysis, the NPRSTI outlines what it considered its major strengths, weaknesses, opportunities and threats. Some of the strengths identified include, ‘political and macro-economic stability, communication infrastructure, humanresource capacity, growing research institutions, infrastructural development, and an operational RST Fund. Identified weaknesses include a weak STI legal and policy framework and a sectoral and uncoordinated approach to STI, low innovation capacities,

<sup>2</sup> Developed by the Global Innovation Framework (Cornel University, ISEAD Business School and the World Intellectual Property Organization (WIPO)

<sup>3</sup>for socio-economic development: health, water, energy, agriculture, fisheries, indigenous knowledge, social sciences and humanities, logistics, environment and tourism, mining and geosciences; and enabling technologies: ICT, space science, manufacturing technologies and biotechnology.



reliance on natural resource exploitation to fund implementation of activities and lack of an information management system. These factors constrain collaboration between the NCRST and other stakeholders.

Opportunities include new emerging technologies with a plan for Namibia to tap into these enabling technologies in partnership with other countries, a huge potential for innovation and STI growth especially considering the AU's and SADC focus on this. Threats include emigration of skilled human resources to other countries, which are more competitive. These have affected their partnership and collaboration with other SGCs both positively and negatively.

#### 4.1 SGC related policy frameworks

In 2009, Namibia came up with a National Policy on Research, Science and Technology (NPRST) that continues to guide the STI sector. Its primary aim is to enhance coordination, facilitate capacity building at institutional level, enable research funding and development of STI projects. This policy led to the 2004 enactment of the RST Act that established the NCRST. In 2016, UNESCO supported Namibia to review this policy developing a set of recommendations that the NCRST is the process of implementing.

The NCRST has a Strategy (2014/15 - 2018/19) and a National Programme on Research, Science, Technology and Innovation (NPRSTI 2014/15 - 2016/17) and implementation plan which guide STI in Namibia. The NPRSTI outlines 5 strategic priorities areas for the NCRST, these are:

- i. Creating an enabling policy and regulatory environment
- ii. Building research capacities and technical skills
- iii. Promoting cooperation in research and innovation activities
- iv. Disseminating scientific and technological knowledge
- v. Promoting innovation in the economic and social sectors

These priorities are set for implementation in the research areas on socio-economic development such as health, water, agriculture etc. and those addressing enabling technologies such as ICT, space science, biotechnology and manufacturing technologies.

Namibia has an Industrial Property Act of 2012, which guides IP issues. The NCRST has also set up the Business and Intellectual Property Agency (BIPA) that handles registration etc. Apart for these, there is no further IP legal or policy framework in the country.

#### 4.2 SGC capacities and capabilities

The NCRST highlights the fact that a competent human resource is necessary for the achievement of its goals and targets. It has therefore put together a team to aid delivery of its mandate (See Annex 1) even though they need other staff e.g on Intellectual Property (IP) among other issues. The NCRST also collaborates with the NSFAP to fund postgraduate research thus continue to build a pool of expertise in STI.

#### 4.3 External policy and legal frameworks

With little internal Intellectual Property (IP) policy, Namibia relies on a number of international IP-related instruments including the Patent Cooperation Treaty of 1995, the WIPO Convention of 1973, the Paris Convention for the Protection of Industrial property, the Convention on Biological Diversity and its protocols, WTO's Trade-related Aspects of Intellectual Property Rights (TRIPS, 1994) and the Africa Regional Intellectual Property Organization (ARIPO) treaty among others.

## 5. Factors constraining and enabling collaboration and knowledge transfer with the private sector

One of the main factors constraining engagement is the relatively small private sector in Namibia and an apparent natural-resource extraction dominated economy (NPRSTI 2014). Other factors include a lack of coordination in the STI sector with attendant lack of appreciation of STI meaning that there are fewer stakeholders engaged in the sector. An important development however is the setting up of the Cooperative Education Unit (CEU) that provides linkages between graduate students and industry in Namibia. (NCRST, NPRSTI 2014).

## 6. Recommendations for SGCs

There is need for streamlining of Namibia's STI legal and policy framework to ensure coordinated approaches to STI in the country which will in turn foster collaboration in terms of both quality and quantity.

There is a need to set up an STI information management system, which is currently lacking to ensure better coordination and coherence within the STI sector and to assist the NCRST in fulfilling its mandate. This system will be able to capture data from the NCRST itself as well as from other public agencies and other stakeholders undertaking similar work thus help in streamlining activities and enhancing synergy for better delivery.

Similarly there is need for a clear monitoring and evaluation framework to capture progress of STI, specifically existent collaborations with SGCs and the private sector that will inform future engagements with them. The NPRSTI itself states that monitoring is a challenge because of the fragmented nature of the STI sector but a clear framework may help address this issue.

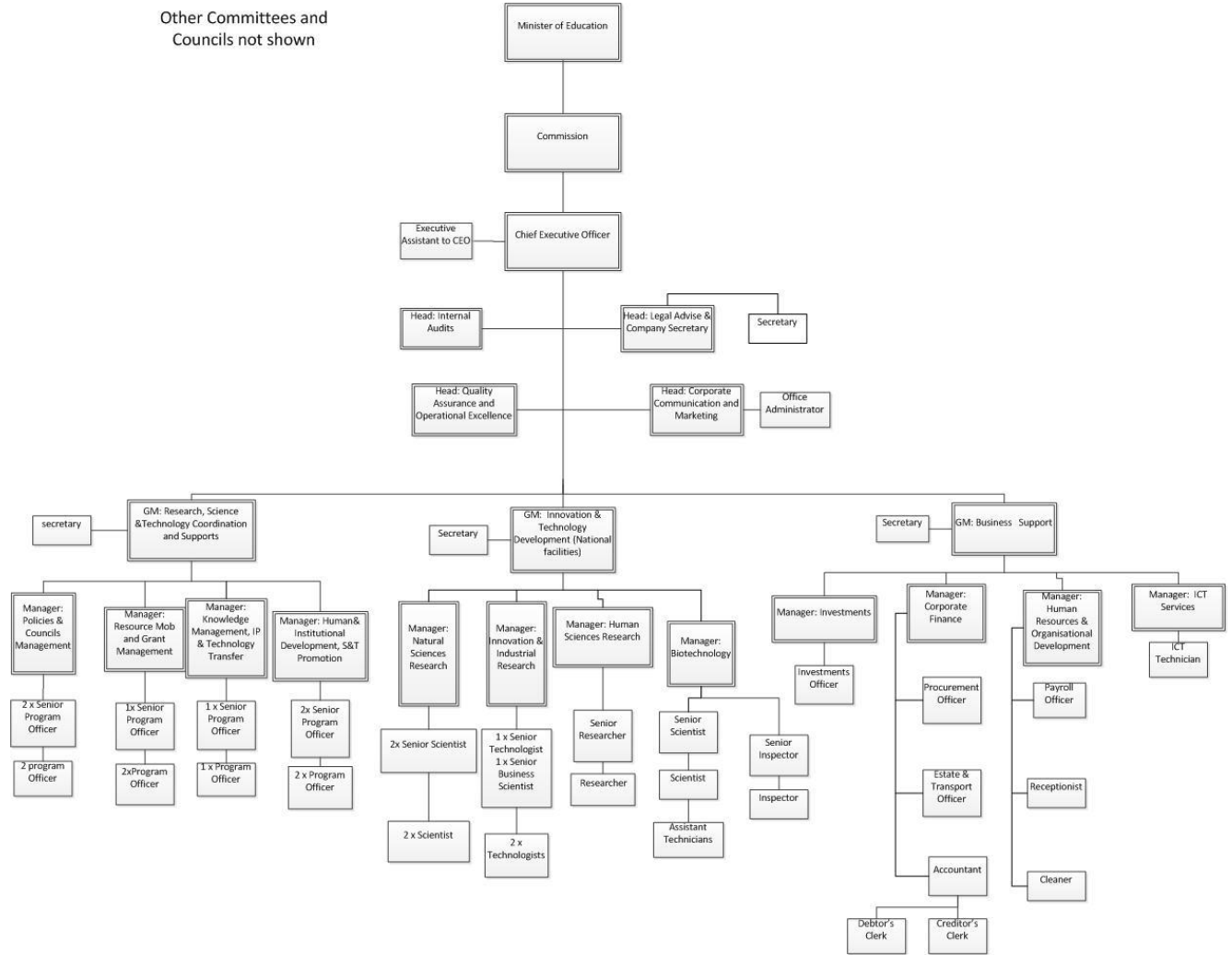
Further engagement with the private sector to expand private sector collaboration is needed for realization of its Vision 2030 that aims at industrialization and to achieve the NCRST mandate. Even though the private sector is relatively small and activities mostly focused on natural resources the sector is growing and interest in STI is apparent thus this must be taken advantage of for stronger linkages and more collaboration with the private sector.

## 7. References

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# Annexes

## Annex 1: NCRST Organogram



Source: NCRST Website