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Final Draft Procedure Manual for the Operation of the National Research, Science and Technology Fund of Namibia

by

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Introduction

Research plays a key role to improve the conditions of and to accelerate development. Its impact strongly depends on the successful execution of projects with the view of utilizing their results for ***informing and influencing policy***, applying them to obtain ***social and economic innovations*** that can lead to economic growth and the improvement of the quality of life of people, and to advance the frontiers of knowledge ***enhancing the cultural value of science***. Further, a large number of research studies are dedicated to study economic and social processes, including science, technology and innovation, to evaluate the effects of policy interventions.

A positive or enhanced impact of research outputs leads to improved economic outputs by raising productivity and competitiveness while also improving society's wellbeing. In the case of policy, research outputs provide a scientific base on which to take decisions, its influence is evidenced to the degree to which research practice is actually embedded in policy processes and the results are traceable in policy documents, speeches, and resulting legislative or regulatory measures.

For research to fulfil its policy influencing or informing roles, contribute to economic growth, inclusive development and to drive innovation, it needs to be well conducted and of quality, thus leadership, ***funding***, researchers and institutions, and the capacity to utilize research findings are key to its success.

This "Final Draft Procedure Manual" (the Manual) /[1] addresses the issue of ***funding*** research in Namibia, providing general guidelines for the operation of the National Research, Science and Technology Fund (the Fund), established by Act No. 23 of 2004 "Research, Science and Technology Act 2004" (ACT 2004).

The Manual has been prepared on the basis of existing policy definitions and policy proposals, two missions to Namibia, the first a fact finding mission in April 2013, which included extensive meetings with stakeholders and a national workshop to discuss the preliminary findings and the second the discussions that took place in a Conference in August 2013, with the newly appointed authorities of the National Commission for Science, Research and Technology (the Commission) and stakeholders, to discuss the preliminary reports presented to the Government of Namibia containing the findings of the first mission and a draft procedure manual.

The Manual contains four main parts:

1. Part A provides the main legal and policy background for the establishment of the Fund in Namibia.
2. Part B discusses briefly the situation of funding in Namibia and the regulatory steps taken to define the financial mechanism for research.
3. Part C proposes a Financing Programme to be adopted by the Commission. The proposed Programme intends to provide a guide to prioritization of projects to be funded.

/[1] This Draft will have to undergo the respective analysis by the Namibian authorities and be adjusted to the final policy and legal definitions that are now being prepared by the National Commission of Research, Science, and Technology.

4. Part D contains the general procedures to be followed for the operation of the established mechanism and the use of the allocated funds.

Comments and recommendations when necessary and the references are included along the text in footnotes.

In this Manual, conceptual views on research and innovation, the innovation system approach, policy issues, assessment of research and innovation in Namibia have been mostly avoided, as these have already made part of the first reports of the mission which included not only interviews but also an extensive literature review, and presentations made by UNESCO officers and experts in both above mentioned seminars /[2]. The idea here is to have at hand a simplified document which should become operational and understood not only by experts but also by officers in Government whose main tasks are not necessarily related to research and innovation but have an important saying in funding.

A note should be made here at the onset regarding innovation. It is understood that there are several successful fiscal and non fiscal measures that promote innovation which maybe of far more importance than providing small monies for innovation projects through the Fund as prescribed in the Funding Programme and the Procedures. Such measures are not discussed here. It is emphasized however that together with the implementation of the Fund, it will be necessary to initiate a process to identify more ample applicable funding instruments for innovation.

/[2] Brito, Lidia (2012) Science, Engineering, Technology and Innovation Policies for Namibia: Best practices and lessons from other countries, UNESCO, Paris, 2012; Brito, Lidia (2013) Reflecting on STI in SAfrica as drivers of sustainable development, presentation to the UNESCO National Conference on Research and Innovation, Windhoek, August 20; Guillermo Lemarchand (2013) An information platform to collect, standardize, and monitor science, engineering, technology and innovation (SETI) policies and policy instruments in Namibia, UNESCO, Paris, 2013; Carlos Aguirre Bastos (2013) Draft Procedure Manual for the Operation of the NRSTF, presentation to the UNESCO National Conference on Research and Innovation, Windhoek, August 20; Immolatrix L. Onuegbu-Geingos (2013) Research, Science, Technology and Innovation Policy Framework in Namibia, presentation to the UNESCO National Conference on Research and Innovation, Windhoek, August 20, 2013.

PART A

BACKGROUND TO THE DEFINITION OF THE NATIONAL RESEARCH, SCIENCE AND TECHNOLOGY FUND OF NAMIBIA

1. The National Development Context

Since independence in 1990 Namibia has been facing and addressing four interrelated challenges:

a) Low economic growth, coupled with a shallow economic base.
b) Inequitable distribution of wealth and income.
c) High unemployment.
d) High rate of poverty.

Such context has given rise, throughout the past years, to the definition of a large set of measures in the way of government mandates that include the development of science, technology and innovation. Particularly important among the latest government measures (and proposals) have been: i) Vision 2030: Policy Framework for Long-term National Development and ii) the National Development Plans (now in its fourth version: NDP4) 2012/2013 to 2016/2017

Vision 2030 sets the goal of Namibia becoming "***an industrialised country***" changing its status from an upper-middle-income country to a high-income country. It is also envisioned that by 2030 Namibia has an established network of modern infrastructure and has a critical mass of knowledge workers and small- and medium-scale enterprises contributing at least 30% to GDP and a significant reduction in unemployment.

Vision 2030 mandates that the fourth National Development Plan (being prepared at the time when Vision 2030 was in debate) "be forward-looking" thus having a strong R&D and innovation component. In the context to be developed "companies will be encouraged to adapt new technologies and invest in R&D. Current R&D efforts will be analysed, and platforms will be established for cooperation between the public and private sectors as well as with tertiary education institutions."

Vision 2030 identifies Education and Training, Science and Technology as pillars for Namibia's aspirations of becoming a knowledge-based industrialized economy. An important first step towards reaching this vision has been the definition of a blueprint for improving the Namibia Education System through the Education and Training Sector Improvement Programme (ETSIP) /[3]. Subprogram 6 of ETSIP "Knowledge Creation and Innovation" has as one of its key elements "Strengthening the policy and legal environment to support knowledge and innovation". The objective of this component of ETSIP is to develop a set of policies and legal instruments that provide a coherent incentive structure for knowledge creation and utilization.

/[3] Sedere, Upali M. (2011) Final Report: Mid-term Review of ETSIP: The "Higher Education and Training" Sub-Program, UNESCO, Windhoek, 30 May

The main policy instrument defining development policy has been the National Development Plans, of which now the country is in the Fourth version (NDP4) spanning the period 2012/2013 to 2016/2017. The NDP4 recognizes that in the past years, the country has been able to build strong institutions, including good governance, the rule of law, and the protection of property rights. It has also been possible to build a stable macroeconomic environment anchored in sustainable fiscal and debt dynamics. NDP4 also recognizes that the growth trajectory has been slow, unemployment runs high, poverty reduction and income distribution have been less than desirable and in general the economic structure of the country remains shallow and resource-based. NDP4 signals that at the current speed of implementation, some of the key goals of Vision 2030 will not be attained.

Under such context NDP4 takes a new approach when compared to previous plans. It does not prescribe detailed actions, considering that framework conditions constantly change, and implementing institutions need flexibility to adapt their plans in order to achieve the desired outcomes. The philosophy of NDP4 is to provide direction as regards high-level national priorities, desired outcomes, and strategic initiatives. The Plan defines a set of three priority areas to be attended by a number of strategies:

a) Put in place the basic economic development enablers, and thus create an enabling environment, improve education and skills management, and establish a quality health system. These enablers will assist in addressing extreme poverty, and will upgrade the public infrastructure we need for industries to perform at the required level of output.

b) Define the economic approach by focusing on services and manufacturing, as required by Vision 2030 and Namibia's recently adopted Industrial Policy, as well as a continued focus on agriculture and rural development.

c) The execution strategy with related monitoring and evaluation mechanisms.

Some of the relevant (to this report) goals for 2017 set in NDP4 include:

a) Namibia should be characterised by a culture of learning supported by an integrated, high-quality education system that allows society to meet current and future demand for skills.

b) Reduction of extreme poverty, the proportion of severely poor individuals will have decreased significantly from 15.8% in 2009/10 to below 10% by 2017.

c) A well functioning, high quality transport infrastructure connected to major local and regional markets as well as linked to the Port of Walvis Bay.

d) Have in place adequate base load energy to support industry development through construction of energy infrastructure and the production capacity would have expanded from 400 to more than 750 mega watts to meet demand.

e) Increased access to water for human consumption from 85.5 to 100% of the population as well as sufficient water reserves for industrialisation.

f) A robust and effective housing delivery programme where affordability is its key feature; 60% of households will be living in modern houses from 41% in 2009/2010.

g) An adequate ICT infrastructure will be in place to facilitate economic development and competitiveness through innovation, research and development.

h) "By 2017, the contribution of general manufacturing in constant Namibia Dollar terms has increased by 50% over the baseline figure of the 2010 National Accounts, and significant strides have been made in identifying and developing upstream and downstream economic activities in the minerals sector."

The NDP4 also defines that Namibia is compelled to develop its industries as part of the development agenda; innovation-led industrialisation and respect for the sustainability of the environment should ensure the expansion of the country's capacity to produce secondary goods and services. In line with Vision 2030 and the recently adopted Industrial Policy, the focus is on the services and manufacturing sectors in areas where Namibia has a clear comparative advantage. Consequently, four strategic areas have been identified: a) logistics; b) tourism; c) manufacturing, and d) agriculture.

2. The National Innovation System of Namibia

The importance of science, technology and innovation (STI) is amply recognized not only in the above mentioned policy instruments but in several political declarations and other policy statements, as vital to the country's productivity, competitiveness and growth, and thus to its socio-economic development. A properly running national innovation system can certainly make a key input towards the objectives of Vision 2030 and the current on-going NDP4.

The national innovation system of Namibia has been characterized by different studies (f.e. NRC, 2002; Hahn et al, 2010; Brito, 2012; Onuegbu-Geingos, 2013) /[4] and there is general agreement that in terms of the structural elements of the system, the country has made improvements in its governance and that there are national research and development (R&D) organizations of importance both in the public and private sectors which however, are still not empowered sufficiently to strongly impact on national social or economic policies or strategies. For this to occur it has been deemed necessary to provide the system with new policy instruments and policy direction.

On the other hand in terms of thematic priorities, the national innovation system still needs to better focus its objectives. In fact, as is the case of several developing countries, Namibia has been adopting research and innovation policies without being able to focus on the development of specific science domains, technology areas or application fields. Also, many adopted policies and strategies do not have in practice time frames established for reaching their set objectives. However, in the particular case Namibia,

/[4] Namibia Resource Consultants cc (2002) "Research in Namibia: A system analysis" An overview of the existing system of research in Namibia with pointers towards the significant components of a national research policy; Hahn, Peter; Gerd Meier zu Köcker; Lysann Müller (2010) Indicator Based Analysis of National Innovation Systems; Namibia: Summarising Report of the Determinants of the Namibian Innovation System, Institute for Innovation and Technology, Berlin, August; /[4] Brito, Lidia (2012) Science, Engineering, Technology and Innovation Policies for Namibia: Best practices and lessons from other countries, UNESCO, Paris, 2012; Immolatrix L. Onuegbu-Geingos (2013) RST and Innovation Policy Framework in Namibia, presentation to the UNESCO National Conference on Research and Innovation, Windhoek, August 20.

Vision 2030 does provides a scenario and a global time frame of importance to the future operation of the national innovation system.

A number of key weaknesses in the national innovation system can be identified from existing analyses:

- In spite of the accomplishments of the recent past, at the institutional level it is still difficult to *integrate capacities for managing research and innovation*. It is recognized that the rather fragmented management, institutional arrangements and funding structures for government-led R&D does not provide the right platform for leadership and strategic response. A range of technology-intensive institutions and programmes is currently being driven by different government departments with very little coordination in strategy or sharing of learning.
- *Weak funding*: current expenditure on R&D is mainly provided by government to line ministries to fund research, researchers and research institutes operating within ministries. It is estimated that Namibia spends less than .25% of its GNP in research. It has been defined that by 2013 funding will increase to 0.3% of GNP /[5].
- Even with the inclusion of funds being managed by other ministries and universities, research centres and few enterprises, the level of funding in Namibia is small. Namibia is in the real possibility of increasing the level of funding should the country wish to attain the goals set in Vision 2030 and the objectives of the different national and sector development plans.
- A second but also important source of funding is external funding for particular projects. This component is key today and should be dealt with much care so as to continue being the source but under better focused national needs.
- *Insufficient research capacity*: as recognized in the RS&T Act (2004) there capacity for research is weak, explained in great part to the failure of tertiary education and training institutions to produce graduates that can effectively contribute to knowledge creation and management. On the other hand, fragmented & sector research practices results in wasteful duplication.
- Human resources in research, science, technology and innovation are not being adequately developed and renewed. Insufficient learners with mathematics and science are emerging from Namibian schools.
- Nkwelo (2008) /[6] concludes "*Like many countries in the region, the development of human resources remains one of its biggest challenges. (…) Namibia has to consider ways and means to retain its future scientists and knowledge workers with 70% of its students studying at South African universities. The small number of postgraduate programmes and student outputs from these programmes would suggest that this problem will remain for the foreseeable future."*

/[5] Even with the inclusion of funds being managed by other ministries and universities, research centres and few enterprises, the level of funding in Namibia is small. Namibia is in the possibility of increasing such level at least ten times should the country wish to attain the goals set in Vision 2030 and the objectives of the different national and sector development plans.

/[6] Nkwelo, Mluleki (2008) Namibia: Science and Technology, Chapter 9 of the Report of Southern African Regional Universities Association (www.sarua.org)

- *Private R&D*: Research and development undertaken by local companies is negligible and there is a weak demand for knowledge by the productive sector. Most existing production centres are branches of centres located outside the country, where the main R&D work is conducted. Under such context there is limited demand for Namibian knowledge and innovation.
- Low technical human, organizational & institutional research, science, technology, innovation capacity
- Furthermore, given the low level of education and training, Namibian firms, in particular SMEs are not able to clearly identify knowledge and technology needs. Without effective brokerage, these producers cannot link themselves to the supply of knowledge.
- Within the formal economic sector, there is great need at establishing R&D programmes that can lead to improve productivity. Under this premise a set of challenges are present today:
    a) Lack of a system for identifying sectors whose productivity is constrained by the lack of relevant knowledge and technology
    b) Lack of a national system for the coordination and development of research capacity
    c) Lack of a system for linking knowledge demand to effective supply of knowledge. Further, the country has a limited capacity at present to respond to new areas of technology that are regarded as critical in the global economy
- Less develop national and industrial system for research and development. Mining, Agriculture, Fishing are the main contributors to the Economy- Exported mainly in raw form. Value addition takes place elsewhere, thus loosing direct and indirect jobs.
- There is observed a lack public-private dialogue and engagements
- Structural weaknesses in the market e.g. R&D, innovation mainly takes place elsewhere- demand for scientific experts and skills are low.
- *Intellectual property (IP)*: new technologies have created new challenges with regard IP intellectual property. This is particularly true for biotechnology and its relation with local biodiversity and indigenous knowledge. Namibia will need to implement a better framework for IP protection as a matter of urgency or face, as it is already happening, exploitation and marginalisation with respect to its own resources. A clear approach to intellectual property that arises from publicly financed research is required.
- *Social sciences:* There is a particular need to mobilise the social sciences to develop far more holistic understandings and interventions to increase the rate of innovation in society. The role of the social sciences is often underestimated, and it is therefore necessary to develop specific capacities in the social sciences to understand and strengthen the national innovation system.
- Out dated and inadequate supporting policies and legal instruments (e.g. IPR, Ethics) including a not clearly defined national strategic development programme for RSTI. Also, there is no central research registry & depository (knowledge brokerage platforms)

- There is a general lack of public understanding and appreciation of research, science and technology.

3. Research and Innovation Policy

As a result of the recognition of the importance of science, technology and innovation, the Government of Namibia adopted in 1999 the first national policy. The policy was seen as a key instrument that would help drive the transformation of Namibia towards a knowledge-based economy, where the production and usage of technology and innovation would lead to economic benefits. Further policies and strategies were developed with emphasis on the necessity of shifting the proportion of national income derived from natural resources to innovative activities; increasing the percentage of workforce employed in the knowledge-based jobs and the ratio of firms applying technology and innovation. Over a decade now, it is recognized that these policies have not been implemented.

In this context proposals have been made to define new policies and strategies but it was only in 2004 that Government adopted the second formal science and technology policy by Act 23 of Parliament. After this definition, again several, research based, policy proposals were made by the Directorate for Science and Technology of the Ministry of Education and other organizations, until 2013 /[7], when Government finally formally established the National Commission for Research, Science, and Technology as defined in Act 23. The Commission will now undertake the task of formulating a policy and strategic proposal.

/[7] for example: Mokhele, Khotso (2010) Report to UNESCO on a 3 Day Mission to Windhoek, 9 – 11 September 2010; NRC (2002a) Research in Namibia: A system analysis, An overview of the existing system of research in Namibia with pointers towards the significant components of a national research policy, Namibia Resource Consultants cc, Klein Windhoek, 24 April 2002; NRC (2002b) Draft Policy on Research: A discussion document (Oct – Dec 2001), Namibia Resource Consultants cc, Klein Windhoek, 24 April 2002; Nyiira, Zerubabel M. (2005) New Directions for Namibia's Science and Technology Sector: Towards a Science and Technology Plan, Report submitted to Government of Namibia and UNESCO, Windhoek, August

PART B

RESEARCH AND INNOVATION FUNDING IN NAMIBIA

1. Funding of Research and Innovation: Present Status

Research funding in Namibia has come until now mainly from four sources:

a) The Ministry of Higher Education that funds routine research at the University of Namibia and the Polytechnic of Namibia. This support is currently running at around 2% of their overall recurrent budget.

b) Different line ministries provide funding to their sector research centres and /or research activities, with resources coming from the annual subvention from the treasury. For the first time, in 2012 Government provided a fund of 47 million Namibian dollars for a two year period, for research grants and administrative purposes of the Directorate of S&T, a percentage of which has been placed on the financing of the joint call Namibia-South Africa. Although a small fraction of researchers have been financed so far, there is satisfaction among those who have received the funds from the arrangement, although there is also complaints on the extreme bureaucracy to which the funds are subject in their management.

c) Most funding comes from donors, often as part of international agreements. Some government agencies such as the Department of Environmental Affairs of the Ministry of Environment and Tourism receive most of its funding from such sources. In the latter case, the funding is usually administered through a third party non-governmental organisation, such as the Namibia Nature Foundation or the Rössing Foundation, rather than directly through the ministry budget.

d) Commissioned research by which funding comes from the client. Clients are usually donors, or ministries funded by donors and multinational organisations such as the various United Nations or European Union organisations.

There are a number of problems associated to the present process of funding:

- Public funds are channelled to public bodies
- Donor funding is mainly channelled to private institutes
- Commissioned research falls to either public or private bodies
- There is no overall funding coordination or plan
- There are gaps in the support for research
- There is little focus on funding for research capacity development
- Research is seldom linked to innovation
- There is little long-term vision in the existing research programme
- From the government funding agency point of view, it is difficult to direct such a programme towards national priorities
- Accountability, if it is built into programmes at all, is not well developed

Table 1 provides a resume of the present (and future) status of research funding. In general, financing of S&T in Namibia has been characterised by: insufficient focus on

competition as a driver of excellence, marginal funding in many areas of research, and barriers to participation and collaboration. The established Fund can be a policy instrument which will help to overcome these limitations.

Table 1: Funding of Research in Namibia

Now	Future
Limited competition for funds	Majority of funds are allocated competitively
Risk of mediocre outputs	Delivering higher-quality outputs
Marginal funding • Allows cost shifting • Leads to lack of accountability	Research is fully funded
Barriers to participation	Access to funding is open to all
Weak and/or inconsistent incentives	Partnerships and networks fostered
Overemphasis on the individual	Critical mass is built
Multiple sources of funding	Coordination across funds

2. The National Research, Science and Technology Fund

Considering the need to advance research, technology and innovation, Government adopted Act 23 of December 2004. Part IV (Article 23) of Act 23 of 2004 creates the "National Research, Science and Technology Fund" and provides basic provisions.

Article 24 defines that the fund is constituted by:

a) Financial resources appropriated by Parliament on behalf of the Fund

b) Fees that are received under the Act for the benefit of the Fund

c) Interests or dividends earned on any investment made in terms of subsection 5

d) Financial resources derived from the sale of any asset of the Commission

e) Money borrowed under section 5(2)

f) Financial resources received by the way of donations or grants from any source in Namibia, and, subject to the approval of the Minister in agreement with the Minister responsible for finance, from any source outside Namibia;

g) Financial resources obtained through the sale of i) publications prepared by or for the Commission; ii) reference material, data and information; and

h) Any other financial resources which may be accrue to the Commission

It is also defined that the ***Commission*** should manage the Fund in accordance with sound principles, by observing the measures implemented to protect its liquidity.

The Act defines that the money available in the Fund should be used:

a) To pay the administrative expenses of the Commission;

b) To pay the administrative expenses of every council;

c) To fund the ***costs of any project or other activity of the Commission*** undertaken by the Commission or by any research institute with the approval of the Commission; and

d) To pay remunerations and allowances payable by the Commission and such other expenses incurred by the Commission in the performance of its functions.

The Act calls for the Commission to have a given number of commissioners, together with their alternate commissioners. It also creates an Executive Committee constituted by the commissioners and foresees the establishment of committees to perform different functions, in these committees there may be appointed persons who are not commissioners. Also, the Office of the Chief Executive Officer is foreseen in the Act, and among its duties is that of supervising the operation of the Fund.

This rather complex governance system will impose a great burden on the funds that will be allotted by Government, which should not interfere with funds to be provided for research. At this point it is not possible to establish how much resources will actually go into de administrative operation of the Commission as it is established in Act 23 of 2004 /[8]

The Act calls for the establishment of a standing committee to be known as the "Foundation for Research, Science and Technology", whose functions are not yet fully specified /[9]. The preliminary document on the Foundation sets the following objectives:

a) To advise the Commission in formulating national policies and strategies on RST and Innovation.

b) To oversee the development of the National Research, Science, Technology and Innovation programme and monitor its implementation as provided for in Section 18 of Research Science and Technology Act 2004 (Act 23 of 2004).

c) To oversee and approve the allocation of the resources necessary to advance and implement the NRST and Innovation Programme /[10].

d) To guide the allocation of the resources necessary to advance strategic regional and international collaborations in the field of RST and Innovation.

e) To evaluate and approve grants for research and innovation.

f) To actively pursue international collaboration and funding opportunities for collaborative research

g) To ensure that Intellectual Property Rights (IPR) issues emanating from publicly funded research is handled in a fair and equitable manner in line with Section 33 of Research Science and Technology Act 2004 (Act 23 of 2004).

h) To ensure that all research projects funded by Commission are carried out in an ethical and accountable manner.

Whichever policy and institutional process are defined by the Commission, the Funding Programme as proposed in the next Section of this document and the Procedures that follow should serve as the basic guideline for funding research and innovation in Namibia.

/[8] It is understood that this structure will be revised in the short-term

/[9] A preliminary document prepared by the Commission has been released in September 2013.

/[10] An outstanding issue that needs to be clarified refers to the existence of multiple funding sources. Multiple /sector funding mechanisms have proven to operate well, but need to follow a unified policy. For a small country as Namibia and the amount of resources that may be allocated, it should be a matter of discussion the benefits of multiple sources.

PART C

TOWARDS A FUNDING PROGRAMME

1. Guiding Principles

Governments as well as the private sector enterprises and organizations can support research and innovation through a series of financial mechanisms in the way of non fiscal incentives such as grants, loans, subsidies, venture capital funds, guarantee mechanisms and fiscal incentives such as inside and outside corporate taxes.

This document will not deal with fiscal measures, which are considered key in promoting innovation, the Manual concentrates on the basic characteristic of the established National Research, Science and Technology Fund, as basically a research project granting mechanism. It is of course recognized that research grants constitute also a mechanism for innovation in enterprises.

The on-going research and innovation policy debate in Namibia emphasizes that the main mechanism for funding research will be project support of proposals that will be presented by institutions in a bid mechanism according to national priorities. Further the strategic elements of the debate call for encouraging research institutes to apply, as a way not only to produce new knowledge but as a significant and useful form of support of these institutions. It is consider at the same time that project-based funding offers an opportunity for innovative systems of co-funding with donors and the private sector.

The debate also centres in the recognition that funding must serve towards the purpose of raising the level of future researchers and provide the adequate infrastructure for research and facilitate mobility. The concept of ‘seed’ projects is also called to be developed as a means of evaluating mechanisms for developing substantial long-term research support projects and that particular encouragement should be given to multidisciplinary projects.

The National Research, Science and Technology Fund should operate as a competitive mechanism. Competition is the key to research excellence, it allows the identification and targeting of support to those activities which will deliver outcomes of the highest quality, and which will generate enduring economic, social and environmental returns to public investment in research. Research excellence drives innovation and they are closely linked, as it stimulates new lines of inquiry and generates new ideas and knowledge that serves as the foundation for innovation.

On the other hand, collaborative links also stimulate innovation as the mobility of people between the different elements of the national innovation system (and abroad), encourage and facilitate cross-cutting interactions and the free flow of ideas and knowledge.

Together, excellence and collaboration serve to build and sustain the two key components of a forward looking and productive national research effort – capability and focus. By targeting support to excellence and providing incentives for collaboration, the brightest and most promising young researchers are given opportunities to develop their skills and expertise and leading researchers are encouraged to build the scale of their research by forming and participating in networks and major centres of research which, because of the cross-cutting, multi-disciplinary nature of their activities, have the capacity to focus on areas of national priority.

It is within principles that the National Research, Science and Technology Fund should initiate its operation and allocate funding to research. Thus it is needed a streamlined and

balanced system of funding mechanisms that promotes excellence, scale, focus and concentration of Namibia's publicly funded research effort, that will deliver enhanced efficiency, effectiveness and accountability.

For a small country with limited resources a better approach to funding would probably be one in which a single entity collectively manages (or at least coordinates) funds for the operation of the national innovation system. This would encourage the formation of more transparent, accountable and effective governance structures and processes and open further opportunities for co-investment. Improved coordination between research funders would be necessary to achieve this goal.

The Fund must not be considered as an additional source of financing government administration. One very basic principle for a successful operation of the Fund should be observed: In compliance with the legal norm that creates the Commission and the Fund, it is established that the total amount of monies received from government will be distributed as follows: 20% for the operational – administrative costs of the Commission, the Fund, committees etc. and 80% for grants to the different programmes.

Funding arrangements need to be as simple as possible to administer and readily intelligible to researchers, institutions, industry and the wider academic and entrepreneurial community. Above all else they need to support and promote the highest-quality research wherever it is found. Evaluation of projects will be a key instrument for guaranteeing transparency and quality. The Draft Procedure Manual will indicate on the basis of the evaluation process.

2. The Funding Programme

In order to ensure that national benefit is derived from research excellence, the Commission should support a continuum of research activities, which are here defined as the "***FUNDING PROGRAMME***" /[11] as depicted in Figure 1.

The main idea behind this categorization is that research and innovation capabilities can be built from the bottom up and step by step depending on the availability of funds. At the on-set of the National Research, Science and Technology Fund, the present priority would be given to ***fund projects presented by research teams*** in which there is at least one high level researcher, thus covering the first two categories of the pyramid.

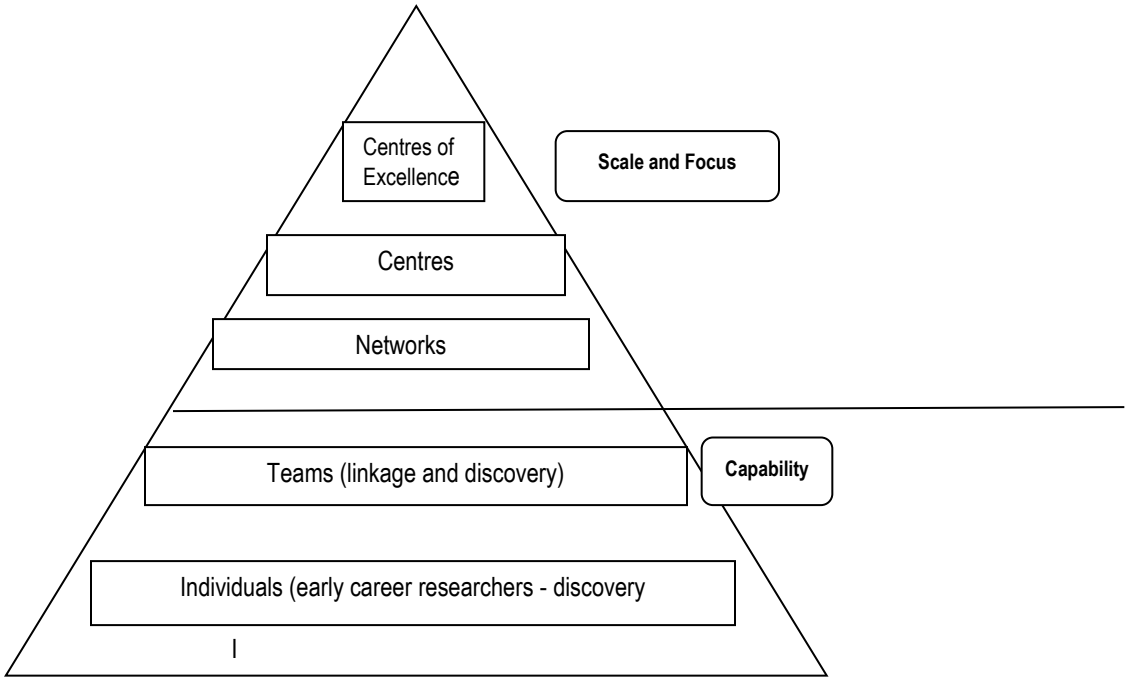
Research needs to be carried out within a framework that demonstrates accountability to the government and the community, is transparent, is performance-driven and is capable of highlighting the return (economic or otherwise) on investment in research, thus a set of transparent processes are required in the operation of the National Fund.

The Foundation should in close coordination with the Commission, undertake periodic studies on research and innovation activities in Namibia, work closely with the groups or institutions producing indicators, so that gaps and new priorities are readily identified for financing.

/[11] The Programme is a permanent but evolving project of the Commission, as defined in Part 17 of the Act. This characteristic provides for flexibility as financing of research and training requires. Defined in this way the Programme can be (legally) executed with resources put at the hands of the Fund.

In order to identify the type of research projects that the Fund could finance in the short and long term, the following is a tentative and preliminary list of possibilities; for each type of research activity it is possible to build the "call for projects":

Figure 1: The "Pyramid" of Research Activities



1. Talent Search and Repatriation for R&D

Objective: Strengthen R&D capacities through the insertion of Namibian researchers or foreign researchers in R&D activities in Namibia. This call will co finance the repatriation of Namibian researchers in a permanent manner or the insertion of high level foreign researchers in R&D organizations or enterprises for a minimum period of one year and a maximum of three years.

2. Independent Research Scientist Development Award

Objective: For support of a young scientist, committed to research, in need of additional research training

It is in this type of projects that the Fund can finance young researchers, who often have difficulty to access funding. It is for this group of "future" researchers that the Capacity Building Programme must be implemented.

3. Research Programme Project

Objective: To support a set of projects which demonstrate an essential element of unity and interdependence, i.e., a system of research activities and projects directed toward a well-defined research program goal. The support will include planning for new programs, expansion or modification of existing resources, and feasibility studies to explore various approaches to the development of multidisciplinary or interdisciplinary programs that offer potential solutions to problems of special significance to the Commission. These studies may lead to the establishment of specialized or comprehensive centres.

4. Open Research Project

Objective: To support a discrete, specified, circumscribed project to be performed by the named investigator(s) in an area representing his specific interest and competencies.

5. Small Research Project Grants

Objective: To provide research support specifically limited in time and amount for studies in categorical program areas. Small grants provide flexibility for initiating studies which are generally for preliminary short-term projects and are non-renewable. The concept of seed funding can be introduced in this category, as the Fund can provide resources for scientific feasibility studies.

6. Conference Grants

Objective: To support recipient sponsored and directed international, national or regional meetings, conferences and workshops.

7. Research Demonstration and Dissemination Projects

Objective: To provide support designed to develop, test and evaluate research activities, and to foster the application of existing knowledge for specific areas. The funding should support testing, by means of a research design, the effectiveness of the transfer and application of techniques or interventions derived from a research base. These are usually cooperative programs between participating principal investigators, institutions, and the sponsoring Institution(s).

8. Exploratory/Development Grants

Objective: To encourage new exploratory and developmental research projects by providing support for the early and conceptual stages of these projects.

9. Dissertation Grants

Objective: To support research undertaken as part of an academic program and a specific research project to qualify for a doctorate.

At the onset no individual dissertation grants will be provided. However, budgets for each project can contemplate dissertation support as part of the research activities.

10. Pre-doctoral Individual National Research Service Award (Minority Program)

Objective: To provide pre-doctoral individuals from minority groups with supervised research training in specified social related areas leading toward an advanced research degree (e.g., MSc or Ph.D).

11. Postdoctoral Individual Award

Objective: To provide postdoctoral research training to individuals to broaden their scientific background and extend their potential for research in specified priority areas.

12. Promotion of Regional R&D

Objective: Strengthen the local and regional research capacities that will enhance social groups in different regions of the country and which will support the implementation of regional development plans and productive sectors

13. Study of environmental phenomena and impact

Objective: Finance research projects that will improve and strengthen institutional capacities for the management of environmental risks in vulnerable areas, through the generation of new knowledge or technological developments whose outputs will support the design and application of adaptation and mitigation measures.

14. Promotion of R&D for Protected Areas and biodiversity

Objective: Strengthen the national capacity to undertake research for the protection of the natural patrimony of the country in specifically designed areas (e.g. national parks).

15. R&D in Health

Objective: Promote studies and research in health sciences that respond to the priorities of the country in order to improve the quality of life of people and the environment. Such research must stem from the priorities as expressed in the national R&D strategy.

16. Research in social sciences

Objective: Promote studies and research in the social sciences in the priority areas established in the national R&D Strategy. Proposals of quantitative and qualitative nature are acceptable with different views and methodologies, but always maintaining scientific merit, pertinence with the plans and social impact with a multi or inter disciplinary view.

17. Strengthening infrastructure: equipment, scientific instrumentation

Objective: Strengthen the capacity to undertake research and technology development through the purchase of specialized equipment with the view of establishing or improving competitive excellence centres.

Expensive capital items such as an electron microscope or expensively equipped laboratories that can serve many branches of science, should be classified as 'National Facilities' and opened to all *bona-fide* researchers. The use of such equipment should be open for use by any researcher wishing to make use of it.

18. Promotion of R&D

Objective: Provide support to studies and research in the basic sciences, applied sciences and technological development in priority areas determined in the National R&D Strategy.

19. Promotion of International R&D

Objective: Stimulate scientific cooperation between the Namibian, regional and international community so that collaboration may impact on national research efforts in the frontiers of knowledge.

20. Science against poverty

Objective: Support the generation and/or mobilization of knowledge to link S&T development to social challenges through applied research that will contribute to identifying, analyzing and solving the poorer communities. Projects should contain strategies of high impact that can be duplicated in other regions of the country.

Independent of the type of project in the pyramid composing the Programme, this (Final) Draft Procedure Manual provides a guideline for financing the different types of projects in the Programme in Section D.

21. Funding innovation

Objective: To support the efforts of enterprises to innovate products, processes or organization / administration. Funding can be provided to projects that will contribute to the technological modernization of enterprises that comply with environmental protection norms, hygiene and security and do not discriminate gender.

3. Capacity Building

In order that Namibia stakeholders will benefit from the Fund, it is necessary the execution of a simple capacity building plan /[12]. This plan will include:

a) Training of stakeholders in project writing

b) Training of stakeholders in report writing

c) Training of stakeholders in scientific and technical paper and document writing

d) The training activities above should follow a basic (and common – shared) understanding by participants (to be also provided) of research and innovation issues; an understanding of funding mechanisms for research and innovation; an understanding of the national legislation that promotes or hampers research and innovation funding; other relevant issues that need to be identified.

For the case of "scientific paper" writing, there is a set of well established procedures that need to be taught. Several have already been delivered in Namibia in universities:

- What is scientific writing?
- What is a scientific paper?
- How to write (title, authors and addresses, abstract, introduction, methods and materials, results, discussion, acknowledgments, references)
- How to select useful tables, figures, illustrations
- How to write the manuscript and send it to a journal
    - What are the journals publishing polices and requirements?
    - What are the costs involved in publishing?
- How to write review articles
- How to write a presentation to a conference
- How to write a book review
- How to write a thesis
- How to present work verbally
- How to prepare a poster
- Presentations in general (planning, preparation, guide for a "bad presentation"
- Ethics, rights and authorizations
- Use (and abuse) of language
- How and when to use abbreviations
- How to prepare a glossary
- Evaluation of scientific articles:
    - Evaluation by researchers
    - Evaluation by professionals of the sector
    - Evaluation by policy makers

/[12] Depending on the amount of resources available the Capacity Building Plan can be defined following these guidelines. There are several regional and international experiences for delivering the elements that are mentioned here to which the Commission may refer to, as well as the established capacity in UNESCO and other UN agencies as well.

- Evaluation by investors

For the case of project definition and "project proposals" writing, there is also a set of well established procedures that need to be taught. Several have already been delivered in Namibia, in particular at the universities:

- What to investigate?
  - Selection of topic
  - Participation in an international research project
  - Participation of the private enterprise
  - From where the research ideas come from?
  - Criteria for a well defined project topic
- Planning the research
  - Types of project design
  - Selection of the design
  - Definition of the research questions
  - Generation of the research hypothesis
  - Size of study
  - Size of sample
  - Measurement
  - Planning a qualitative research
  - Design of survey questionnaires
  - Ethics in the design of research
  - Preparing the research protocol (specially in health research)
- Presentation of a research proposal
  - How to search for financing
  - Components of a project proposal
- Executing the research
  - Scientific rigor
  - Monitoring of research activities
  - Reporting
  - Validation of results
  - Good practices
  - New products / processes / other outputs
  - Termination of the research
  - Final reporting
- Description and analysis of research results
  - Statistics
  - Tabulation
  - Calculations
  - Graphs and figures
  - Correlation
  - Inferences
  - What do statistics tell us?
  - Selection of statistical proofs
  - Description and analysis of a qualitative research
- Interpretation of research results
  - Interpretation of the descriptive statistics

- Interpretation of the statistical significance
- Trends
- Arguments on causality
- Interpretation of valuation criteria to measure results
- Interpretation of risk factors
- Interpretation of results of interventions
- Interpretation of results of qualitative research

- Communication of research to:
  - Scientists
  - Financing sources
  - Sector professionals
  - Policy makers
  - General public
  - Media

Paris/Windhoek
24 September 2013

D. DRAFT PROCEDURE MANUAL

CHAPTER I
PURPOSE, ORGANIZATION AND DEFINITIONS

1. Purpose of the Manual

This "Procedure Manual" establishes the requirements for the use of the funds made available by the Government of Namibia and other private and public sources to the National Research, Science and Technology Fund established by Act 23 of 2004 /[13].

2. Organization of the Manual

The Manual is organized under the following headings:

- Definitions: definition of the terms included in the Manual
- Chapter II that defines de projects and activities to be financed
- Chapter III that defines the uses of the Fund's resources
- Chapter IV that defines the content and processing of applications to the Fund
- Chapter V that defines the acquisition of goods and services
- Chapter VI that defines the process of evaluation of project proposals
- Chapter VII that describes the allocation and disbursement of funds
- Chapter VIII that describes the project implementation and monitoring process

3. Definitions

The following definitions are adopted in this Manual:

ACCEPTABLE EXPENDITURES: The set of expenditures made for the acquisition of goods, infrastructure, and services, among others

BENEFICIARIES: The individual or institutions in the private or public sector that receives financing from the Fund

CO-FUNDER: The enterprise or institution in the private or public sector, or non-governmental organization that contributes to the financing of a project

COMMISSION: The National Commission for Research, Science and Technology established through Act 23 of 2004

COMPONENT: Each of the instruments defined to finance a project in the framework of this Manual

CONTRACT: The legal instrument established between the Fund and the Beneficiary defining the specific provisions to be followed in the execution of the approved Eligible Project.

/[13] Once the role of the Foundation is defined by a legal instrument, it should be mentioned here and modifications to this Manual introduced accordingly.

ELIGIBLE ACTIVITIVES: The set of activities described in the different sections that are considered pertinent for their financing with the resources of the Fund when they are contained in an eligible Project

ELIGIBLE ENTERPRISES: Enterprises established in the territory of the Republic of Namibia that have the legal, technical, administrative and financial capabilities to execute an Eligible Project in the framework of the Programme

ELIGIBLE PROJECT (the PROJECT) The set of eligible activities that permit reaching the (verified) objectives in the framework of the Programme

ELIGIBLE TECHNOLOGICAL SERVICE PROVIDERS: The national public or private non profit institutions that provide or request to provide technological services to productive enterprises that on judgement of the Fund have the legal, technical, administrative and sufficient economic capacity to execute a project to be financed by one of the respective components of the Programme

EXECUTOR OF THE COMPONENT: The Fund

FINANCING: The funds made available by Government or other source to the Fund

FINANCING INTERMEDIARY INSTITUTIONS: The financing entities in the public or private sectors that are authorized to function as such by the Central Bank of the Republic of Namibia and that have subscribed with the Fund a subsidiary agreement of participation

FUND: The National Research, Science and Technology Fund created by Act 23 of December 2004

FUNDER: The enterprise or institution in the public or private sector, or Non Governmental Organization, that contributes to the financing of the Eligible Project and that becomes the priority owner of rights of the knowledge and technological results obtained by the Project.

FUNDING PROGRAMME: The systematic and organized set of category of research activities and projects that respond to the national S&T and funding policy

GUIDE FOR THE FORMULATION OF PROJECTS: The set of norms prepared by the Fund that will guide the potential beneficiaries in the presentation of the Eligible Projects

INTERMEDIATE ENTITIES: Those that having signed a subsidiary agreement with the Fund assume the full or partial responsibilities to execute a Component of the Programme

PARTICIPATION AGREEMENT: The legal document formalized between the Fund and other financing institutions, which will determine aims, terms, conditions and periods for the use of resources provided by such other financing institutions

PROGRAMME RESOURCES: Te set of resources that are integrated by funds coming from Government and other different sources

RESOLUTION OF ELEGIBILITY: The administrative act of the Fund that declares the eligibility of the project

RESEARCH GROUPS: Set of researchers that are responsible for the execution of an Eligible Project

SME: small and medium size enterprise as defined in the national legislation

TOTAL COST OF THE PROJECT: Costs of all the Acceptable Expenditures contained in an Eligible Project

CHAPTER II
PROJECTS AND ACTIVITIES TO BE FINANCED

4. The National Research, Science and Technology Fund (the Fund) will allocate financial resources to Eligible R&D Projects under the different Components of the Funding Programme /[14].

5. The Fund is created to ensure the appropriate funding to R&D projects that can contribute to the discovery of new ideas and the advancement of knowledge in the sciences, focusing on high impact and innovative research. It is a policy instrument that allows generating new scientific knowledge and strengthening national research capacity and capability.

6. The Fund will give preference to funding of those areas that are defined as national priorities in the S&T policy and strategy, while respecting freedom of research. The priority areas may change over time and such changes will be announced from time to time by the Fund's Administration/[15].

7. With the Fund's resources no projects related to armament, military or other war related activities, or those that include child labour, person traffic or activities that risk the subsistence of species in danger of extension, will be considered.

8. The National Commission of Research, Science and Technology, may identify flagship projects to which it can give an "urgent priority" category for financing. Such projects, not subject to the Fund's calls will still have to fulfil the requirements set out in this Manual for preparation, evaluation and approval.

CHAPTER III
USE OF THE FUND'S RESOURCES

9. Funding will be allocated through an open bid procedure. For each specific component of the Funding Programme and type of projects there will be a specific "***call for projects".***

10. The content of each specific project proposals and their processing are determined in this Manual which can be supplemented by other manuals that can be developed further by the Commission or the Fund when necessary.

11. Calls will be open between 4 and to a maximum of 6 months after publication. Each call will define the respective deadlines for application.

12. The maximum amount of funding that will be made available for each individual project under each call will be defined by the Fund Administration at the time the call is made public. The Commission will determine such maximum amount (and the maximum number of projects to be financed) depending of the availability of funds provided by Government or other sources.

/[14] The final form of the Funding Programme should be decided by the Commission.
/[15] The Fund's administration mechanism has not yet been established and in this Manual the term Fund Administration will mean whatever mechanism is finally decided upon

13. The Fund will, in consultation with the research community, put in place a fair system for the transparent evaluation of bids, based on the norms established in this Manual. An agreed reporting system will be built into the award.

14. Eligibility Criteria:

    a) The Fund is open to all researchers and groups of researchers who are employed on a permanent or contractual basis from the following organisations:

        - Government Research Institutions
        - Government Science, Technology and Innovation Agencies
        - Public and Private Institutions of Higher Education with accredited /[16] research programmes by the Commission

    b) Expatriates working under contract with any of the above institutions are eligible to apply. However, the project must have a permanent Namibian co-researcher from the same institution, well-versed with the project, to ensure its completion in the event the expatriate's contract is terminated.

    c) Researchers wishing to be considered for funding must have their CV registered with the Commission's Human Resources Data Base (to be created)

    d) The service of a contract researcher must be valid during the period of the proposed project and contractual documents must be furnished as proof of employment for the period.

    e) The following organisations are Eligible for the Fund under special conditions:

        - Private research laboratories and research centres accredited by the Commission when their project proposal is accompanied with a research institution or research group or involves a researcher in a public research centre or public university.
        - Private enterprises demonstrating their decision to innovate.
        - Projects presented to the Fund by other government department/agencies that carry out research having funds under their purview must cover at least 75% of the total cost of the project by their own funds
        - Research Institutions with internal research funding applying to the Fund must guarantee 80% of coverage by their own funds
        - These organisations can also participate by collaborating with the eligible institutions.

15. Project proposals substantially similar to proposals submitted to any other government funding agencies are not eligible to the Fund.

/[16] The term accreditation needs to be clarified: For the purposes of the Fund it means research programmes that comply with a given set of criteria: a) Existence of a research group led by a high level researcher (e.g. a PhD or MSc holder with research experience); existence of a group of assistant researchers, graduate students and technicians, that provide a critical mass, which varies according to project area. It does not mean that the programme is registered on a definite basis it can be created for the purpose of submitting a proposal to the Fund provided it complies with the rules set out in this Manual.

16. Researchers can participate in any number of projects at the same time, but Researchers can ***lead*** only one (1) project at any time. Researchers have to submit the End of Project Report and a note of its approval by the Fund's Administration before submitting a new application.

17. The Fund will provide non reimbursable grants to the projects approved in each call. Each category of projects will have a list of what can be financed, in general terms the funding can be utilised for the following categories:

a) Wages and Allowances for Temporary and Contract Personnel

- Includes wages and allowances for temporary and contract personnel who are directly engaged in the project. Only **two (2) temporary or contract personnel** will be funded for each project.
- The maximum wages/allowances for temporary or contract personnel are up to N$ (amount to be determined) p**er month/per head inclusive of legal deductions.** The allocation cannot be used for tuition fees.

b) Travel and Transportation

- Includes travel and transportation expenses for domestic and overseas trips directly related to the project.
- Overseas trips must meet the following criteria:
  - That the researcher will have its proposed paper accepted as an oral presentation or a poster presentation at the conference or seminar that wishes to attend. This presentation will refer strictly to the project results.
  - When domestic facilities or expertise are inadequate to conduct a portion of the research. The proposed venue must be suitable in terms of facilities, expertise and technology transfer.
  - The researcher is only allowed one travel for the duration of the project;
  - Travel is limited to economy class using the shortest direct routes.
  - The researcher needs to send an application for approval and a copy of abstract/paper that is going to be presented to the Fund Administration Commission.
  - The allocation of funds for travel must be budgeted for in the research proposal and must get prior approval from the Fund.
  - Expenses related to overseas trips will be funded up to a maximum of 15% of the total expenses of the project.

c) **Rentals:** Only rental for building space, equipment, transportation and any other items directly related to the project can be included.

d) **Research Materials and Supplies:** Only expenses for research materials and supplies directly related to the project can be included. The proposal should include an approximate cost and quantity of items required. The grant will not support utilities, books, stationeries and subscription to journals etc.

e) Minor Modifications and Repairs

- Only expenses for minor modifications and repairs of laboratory, equipment or any other items directly related to the project can be included. The maintenance cost of existing equipment used during the duration of the project period can also be included.
- The cost of maintenance of any equipment purchased will not be borne by the Fund after the project is completed.

f) **Special Services:** The following services, directly related to the project can be funded:

- Consultancy: an agreement/letter of intent must be submitted together with the project proposal;
- Payment for surveyors (social surveys);
- Sample testing and analysis;
- Data processing;
- Patent registration, excluding–maintenance cost
- Paper publications related to the project; and
- Registration fees for conference.

g) Engagement of **foreign expert(s)** in the specific project will be considered on a case-by-case basis.

h) **Student training:** Research projects may contemplate training of students who must be Namibian nationals, as this is part of the national policy for capacity building.

18. R&D Equipment and Accessories

a) Justification for purchase of specialised equipment must be given. Project leader will need to provide information on availability of such equipment and why it cannot be used or shared.

b) Accessories needed include items that are necessary to upgrade the capability of existing equipment directly related to the project.

c) Purchasing of equipment must be made in the first year. Purchasing of personal computer, laptop, printer, server, scanners are not allowed.

d) Researchers are encouraged to share R&D equipment and avoid purchasing of the same R&D equipment within the same research institutions. The institution where the equipment is located is the final authority deciding on their sharing. The contract by which the Fund provides the resources will introduce a special article on this issue.

e) Funding for specialised equipment and accessories is up to a maximum of 40% of the total project expenses.

19. All specialised equipment/software directly related to the project must be itemised. Applicants need to provide justifications, specifications, quotations and estimated costs for such purchases.

20. Variation in project costing: Costing can be changed only **once** throughout the project duration and requests to purchase new equipment **in the last six months** of the grant's duration will not be considered.

21. Non-qualifying project activities: Scientific and technical information services such as collecting, coding, recording, classifying, disseminating, translating, analysing, evaluating, bibliographic services, scientific and technical information extension advisory services and compilation of data, are excluded from the main activities of the project except when they form an integral part of the project. In such a case, applicants must provide a statement indicating the research objectives to which the data would contribute.

22. ***Innovation Support Projects***: The Fund will finance a set of activities proposed by enterprises that include:

    a) Modification or improvement of product or process technologies, in respect to those utilized by the enterprise.

    b) Introduction of production management technologies that contribute to competitiveness.

    c) Developing necessary technologies to pass from the pilot to the industrial phase.

    d) Acquisition of technology and the associated engineering effort

    e) Licensing and technology transfer towards the enterprise

    f) Incorporation of information and communication technologies to the productive process

    g) Implementation of quality systems

CHAPTER IV
CONTENT AND PROCESSING OF PROPOSALS

23. Upon presentation of the project proposal /[17], as will be determined further, the proponent will receive an identification number from the Fund. This number will serve for all communications occurring between the applicant and the Fund. It will automatically be generated by the Fund system once the proposal is submitted.

24. Applicants will observe the following general format in preparing their application. This format may vary slightly according to the characteristics of the projects to be financed; the respective call will indicate any changes in the format to be used.

    a) **Project Title:** The title should be concise, clearly indicating the subject of the research and reflecting the key idea(s) of the project.

    b) **Project Objectives:** This section describes the measurable objectives of the project and defines the expected results.

    c) **Research Background:** The research background should cover the following elements:

        - The major issues and problems to be addressed by the research;
        - Research necessity and importance;

/[17] It will be understood that the Fund can finance innovation efforts as defined previously and that request for such finance will follow only the relevant applicable rules that are set here for research projects.

- Variables and parameters of the research;
- Hypothesis or theory, if any; and
- Setting the limits or boundaries of the proposed research in order to provide a clear focus.

The literature review should be addressed in this section to meet the following requirements:

- The application must be novel (should not "reinvent the wheel"); novelty also refers to adaptation of research results to local demands and needs
- Demonstrates knowledge of the research problem;
- Demonstrates understanding of the theoretical and research issues related to the research question; and
- Critically analyses, integrates and synthesises the relevant literature information.

d) **Socio-economic objectives:** The socio-economic objectives represent the purpose or sector beneficiaries for which R&D activities are conducted. Applicants should refer to UNESCO's classification for determining such objectives. This classification allows for a systematic analysis of R&D funding. UNESCO's classification makes an integral part of this Manual and is included as an Annex.

e) **Research Methodology:** The research methodology demonstrates how the applicant plans to approach the research problem. It should have details of the analytical techniques, research design and description of research activities. Specialised equipment, facilities and infrastructure, whether new or existing, required for the project, should also be identified at this stage. The applicant should compare the methodology with alternative methods and justify why the approach chosen is the most appropriate.

f) **Project Activities:** The applicant should provide the work plan and the list of activities necessary for the project to meet its objectives and the transfer of research results to customers / beneficiaries. It should also outline the sequence of the proposed activities and identify them in numbered stages, steps or phases. Research activities including all timelines must be reflected in a Gantt chart.

g) **Milestones:** Milestones must be tangible and quantifiable, marking significant phases of the project or completion of research activities that result in a significant output. The number and timing of milestones must be clearly defined in the proposal being submitted to the Fund. Milestones must be reflected in the Gantt chart. Literature review and report writing do not make part of milestones.

h) **Risk of the Project:** A description of the factors that may delays or prevent successful implementation of the project as proposed must be given as well as an estimate on the degree of risk.

i) Benefits of the Project

- **Output Expected**
  - Scientific publication
  - Method / technique

- Demonstrator / prototype
- New / improved product / device
- New / improved process
- New / improved software
- New / improved material
- New / improved service
- IPR

➢ **Human Capital Development**

- Post doctorate
- Doctorate
- Master
- Research staff with new specialisation

➢ **Economic Contribution**

- Sales of manufactured product / device / equipment
- Royalties from licensing
- Revenue from consultancies
- Cost savings
- Time savings
- Others

➢ **Infrastructural contribution**

- New equipment
- New / improved facility
- New information networks
- Others

➢ **Research Collaboration:** The collaboration is in the form of sharing of expertise and research facilities, marketing opportunities and other related research resources. Details on the role of key collaborators should be provided. Such commitment should be substantiated by documentation proof such as memorandum of agreement, letter of consent or any other form of agreement. For the project team, state all the collaborators involved based on their roles and time allocated**.** The man-month of each of the project team member will be automatically calculated based on the staff cost estimation worksheet.

➢ **Project Schedule:** The project schedule is automatically generated based on the research activities and milestone.

➢ **Staff Cost Estimation:** The computation of daily rates for individual researchers or research staff is done according to the following formula: (This formula must be defined according to Namibian norms) for example

Daily Rate = Emolument x Research Utilisation Factor (based on Annual Working Days

Where:

Emoluments include: Annual basic salary; contributions by employer; performance bonuses; Allowances

Annual working days are computed by deducting the total days in the year (365) with the following number of days: rest days (Saturday and Sunday); vacation; Public holidays

The ***research utilisation factor*** is calculated as follows: Research utilisation factor = Annual days on research projects and activities Annual days on research projects. The research factor ensures that time spent on activities which are *not project specific* (e.g. training, attendance of conferences, administrative tasks related to research proposals, recruiting of research staff, etc) is reflected in the daily rate.

- **Project Funding:** In addition to the Fund, applicants have to indicate and specify which of the following funding sources may also provide funding for the project.
  - Domestic funding sources
  - Other Government Funding Schemes;
  - Internal Funding;
  - Industry sources;
  - Other local sources
  - International funding sources (Development Bank, World Bank; United Nations Development Programme (UNDP); others
- **Summary of Relevant past Research Project:** Applicants should provide a summary of past research, if any, which has relevance to the proposed research.
- **Contractual Obligations Under This Project:** Applicants must furnish (as an attachment) documentation of any contractual obligation with third parties.
- **Ethical Clearance and Compliance to Other Related Regulations:** Project Leaders must obtain and furnish (as attachment) a copy of ethical clearance, or clearance by its existing institutional or national ethics committee and refer to other related regulations by the relevant authorities when necessary.

25. Once submitted, projects proposals are evaluated according to general and specific criteria:

    a) Pertinence and link with the national S&T policy and strategy priorities:
       - Application of knowledge to productive and social problems
       - Consolidation of research lines and research groups
       - Participation of new researchers (or beginners) in research projects
       - Synergies between research group with government, private or academic organizations already working in the sector or area
       - Other may be added
    b) A realistic dedication time by the research team to the project
    c) Valid CV
    d) Reference letters
    e) Compromise letter by home or supporting institutions
    f) Other criteria may apply for each individual component of the Funding Programme

26. More specific criteria include an evaluation of:

a) **Scientific and technical merit**: The project must be scientifically sound, technically feasible with achievable milestones, and has the potential for further development and commercialisation, or contributes to social inclusion or the advancement of knowledge.

b) **Research competence**: The research team must have the knowledge and competency to carry out the research successfully to completion.

c) **High impact research**: Clear and measureable expected output, outcome and impact in line with national priority social and economic areas.

d) **Impact on innovation**: Verifiable output by proponent firms

27. **Location of research projects:** The research project financed by the Fund must be carried out in Namibia. The project may contain however eligible activities that can be carried out abroad when fully justified for reaching the project's objectives.

28. **Project Duration:** Projects will have duration of a maximum of 36 months. Only in extraordinary circumstances the Commission may authorize its extension for another 12 months without additional funding, including the submission of the End of Project Report.

29. Requests for project extensions must be made in writing via the institutional coordinator to the Fund's Administration for approval at least **three (3) months before** the project completion date. Applications received after the project completion date, will not be considered.

30. **Responsibility of the project leader:** The successful implementation of the project is the responsibility of the project leader. Project leaders have to ensure that the projects are carried out effectively to meet the specified objectives and milestones within the specified timeframe and funding allocated.

31. **Notification of results:** The results of applications will be notified, through the Fund e-system /[18] to applicants within 14 **working days** after the convening of the Fund Approval Committee Meeting.

32. **Acceptance of offer:** Applicants must accept or decline the offer through the Fund's e-system within **14 days after notification**.

33. **Fund Agreement:** The Heads of institutions will be required to sign the Fund Agreement /[19] within **30 working days** upon acceptance of the approved projects, failing which the Fund Administration has the right to revoke the approval.

34. **Ownership and use of R&D equipment:** All R&D equipment purchased under the grant must be recorded and tagged with the project number for monitoring and verification purposes and it belongs to the Institution.

35. **A**ll R&D equipment purchased under the project must be maintained by the institution on conclusion of project. However, such equipment is not for the sole use of the institution, and must be made available to other research organisations as and when the need arises.

/[18] That must be established as the preferential communication channel
/[19] A sample provided in Annex

36. Researchers are encouraged to publish the results of their projects in local and renowned international publications **only after** all measures have been taken to protect IPR generated from these projects. The contribution of the Fund as the fund provider must be acknowledged at all times in all forms of publications.

37. **Ownership of Intellectual Property Rights:** Applicants must indicate the institution (s) that will own the intellectual property rights that may arise from this project.

38. **Intellectual Property Rights:** Ownership and management of IPR, royalties and any other form of fees received by the institution resulting from technology transfer, licensing of technology or any other form of commercialisation, shall be governed in accordance with the terms and conditions as set below:

    a) The IPR belong to the researcher (or designated group of researchers) and the institution(s) hosting the researcher in equal parts. A specific contract to resolve this item subscribed by the researcher (or group) and their institution(s) must be into be submitted to the Fund.

    b) The cost of filing the patent or any other IPR in the respective national patent office, or regional or international patent office, will be borne by the host institution(s)

    c) The cost of maintaining the patent registry (or any other IPR) will be borne by the home institution(s)

    d) Should the patent (or any other IPR) be exploited by the IPR owners, within the next five years of its granting by the respective patent office, the ensuing benefit will correspond to the IPR owners

    e) Should the patent (or any other IPR) be licensed for exploitation within five years to a third party, the ensuing royalty will benefit the FUND, the researcher(s) and the host institution(s) in a proportion of 50%, 25% and 25% respectively.

    f) Should the patent not be exploited, the Fund reserves the right to determine a “compulsory patent” and license it to any party it deems appropriate. The proceeds of a compulsory patent will benefit the Fund by 60% while it will benefit the patent owners with 40% divided equally between the patent (or any other IPR) owners.

39. Researchers shall disclose to the Fund and the Commission in writing, of the existence of the Project Intellectual Property not later than 60 days from the Project Completion Date. The Fund shall establish an incentive system for the creation of an IPR, its filing and exploitation. This incentive should serve to cover the costs of filing and maintain the respective IPR.

40. **Change of project leader:** If a project leader resigns, retires or moves to another organisation, the institutional coordinator must immediately seek the Fund/Commission’s approval for a suitable replacement within the same institute. The institutional coordinator must ensure that the new project leader has the necessary expertise and experience to lead the project.

41. **Transfer of grants between organizations:** If the project leader wishes to transfer and bring along his/her project to another organisation, it is allowed on condition that both parties agree to it by signing a written agreement. The receiving organisation must be eligible to be a Fund recipient. The project must be carried out in line with the original scope approved. If either one party does not agree with the arrangement, the

Commission will terminate the project and any unspent funding shall be returned to the Fund.

42. **Termination:** Projects can be terminated based on the following:
    a) Any false reporting by the project leader;
    b) Any misuse of the grant provided;
    c) Non-performance in terms of progress;
    d) Variation of scope of project without getting prior approval from the Commission
    e) No suitable project leader as replacement in the original recipient institute

    Any unspent funding shall be returned to the Fund.

43. **Application process:** Application to the Fund must be made online through the website https://namibianrstf. ... (site to be created by the Fund' Administration or the Commission). The application form and other details for the preparation of the application will be available in the Fund's website. The application form will include:

44. Applications should be submitted at the date and time specified in the respective call.

CHAPTER V
ACQUISITION OF GOODS AND SELECTION OF SERVICES

45. For the acquisition of goods and services, these must be sought in Namibia, and only when these are not available in the country, they will be procured abroad.

46. Beneficiaries will follow the existing national procurement rules for the acquisition of goods and services

CHAPTER VI

EVALUATION OF PROJECT PROPOSALS

47. The Project Evaluation process consists of the following steps:
    a) Institutional screening
    b) Technical and financial evaluation before it is submitted to the Fund /[20] (here it will be assumed the existence of a Fund Approval Committee to facilitate the understanding of the norms of this draft Manual).

48. **Institutional Screening Committee:** The Fund will establish an internal organ called the "Institutional Screening Committee" composed of a responsible project officer (a staff member) and two advisors also staff members of the Fund.

49. All applications are to be screened by the Institutional Screening Committee to ensure that the applications conform to the Fund's requirements.

50. In case the proposals do not meet the requirements the Fund's Administration will request the proponent to complete the necessary documentation for the evaluation of

/[20] One of the key decisions to be made is who in the Fund makes the final decision for approval. Here it is necessary also to clarify the role of the Financing Standing Committee created by Act 23 of 2004, of which no specific role is defined.

the project. Nor the Institutional Screening Committee nor the Fund's Administration will evaluate the scientific or financial merits of the projects; these will be evaluated by external peers, as defined below.

51. The Institutional Screening Committee is required to assess various technical aspects of the research proposal using the Institutional Screening Form /[21]. It should ensure that the project proposal conforms to the respective call, that the project leader and research team are technically competent, the project costs are fair, and there is optimal utilisation of available research equipment and infrastructure.

52. The Institutional Screening Committee must ensure that projects which involve experimentation on humans or animals have obtained ethical clearance from the relevant authority.

53. The Institutional Screening Report should be submitted to the Fund's Administration within one month of the receipt of the project proposal. Once received, the Administration calls on the technical and financial evaluation of the project proposal

54. **Technical and financial evaluation of the proposal:** The Fund will establish an ad-hoc evaluation team composed of two or three external experts /[22] knowledgeable in the project's subject area. The responsible officer for projects in the Fund will act as secretary and support to the external experts.

55. The experts will preferably, but not necessarily, be foreign experts committed to support the development of research and innovation in Namibia. Experts may come from the private or public sector/[23].

56. The experts will be provided with an evaluation form (to be designed) which they will complete after studying the proposals based on the merits of the research objectives, appropriateness of research methodology, ability of researchers and the cost effectiveness of the proposal, as already defined in this Manual.

57. Projects evaluated by the external experts are then submitted to the Fund Approval Committee which is chaired by the Fund Administrator and includes a designated member of the Commission (This Fund Approval Committee could be the standing committee for funding defined in Act 23 of 2004).

58. The Committee approves the experts' evaluation report and makes the final decision on funding the approved projects. Any decision made by the Fund Approval Committee is final.

59. If an organisation can raise by itself a given proportion of the cost, the institution would greatly increase its chances of support through the Fund.

/[21] To be defined

/[22] Incentives for external evaluators may include inclusion of evaluation in their CV, eventually fees may be allotted if the evaluator is not a resident of Windhoek (seat of the Fund) to cover travel and living expenses. Evaluation can be done according to the number of project presented to a call, for two or three days at most. The Fund can also provide evaluators with support for training in project evaluation.

/[23] The Commission may enter some kind of agreement with foreign evaluators, for example offering a "symbolic" honorary for evaluation, or pay travel expense to Namibia if the project amounts deserve such expense.

60. The designated budget for each call will consider a payment for project evaluation.

CHAPTER VII

ALLOCATION AND DISBURSEMENT

61. Once approved the Fund's Administration will call on the Institution providing coverage to the lead researcher to sign a Contract. All projects must be conducted in accordance with the terms and conditions outlined in the Contract (to be prepared according to national regulations). Projects will be closely monitored to ensure that they are carried out successfully.
62. Funds that will be partially administered directly by the Commission, as foreseen in the regulations on funding, will also follow the same procedure as above, except that the signing institution will be in this case the Commission itself.
63. Researchers must abide by all financial rules and regulations as defined in this Manual and other pertinent national legislation.
64. Initial disbursement: The project allocation defined in the budget for the first year allocation will be disbursed to the relevant institutions within one month of the return of the signed Contract.
65. The subsequent disbursements will be based on the milestone and financial achievements of the project.
66. The last disbursement will be made upon completion of the Project and its final evaluation.

CHAPTER VIII
PROJECT IMPLEMENTATION AND MONITORING

67. The Fund will review and approve reports on the advances of projects (progress reports) as a permanent monitoring process. This procedure applies to all projects under execution that have benefitted from the Fund's contribution. The procedure to be complied with consist of the following steps:

    a) The lead researcher provides the Fund with partial progress technical and financial reports on the advances of the project. A special format is provided for this purpose
    b) The responsible staff member of the Fund receives the report and evaluates it s contents using:

        - The contract subscribed between the Fund and the Institution
        - An electronic approval format generated by the Fund

    c) The staff member approves the financial and technical report and provides his (her) evaluation to the Fund's executive officer for validation. The responsible staff member receives and acknowledges such validation.

    d) In case of non-compliance the report is returned to the researcher for completion

    e) The review ends with the approval of the technical and financial report by the CEO of the Fund and the emission of the corresponding order of payment for the next phase of the project (by the responsible staff member).

f) Researchers/Institutions are obliged to provide additional and current information from time to time upon written requests by the Commission.

68. Progress reports will be submitted twice a year, on dates that will be defined based on the date of the initial disbursement. Reports may be submitted via the Fund's website.

69. Progress reports will be used to monitor the progress of the project as well as determine the timing of the fund disbursements. This will take into account milestones achieved as well as the expenditures made according to the financial plan. It is the project leader's responsibility to ensure that the correct and updated information related to the milestone achievement and expenditure are reported. Failure to submit the Progress Report is a serious omission that will result in the withholding of further fund disbursement or possible termination of project. The report can also be used to apply for changes in timeline for milestone achievement and project schedule.

70. Once completed, the project leader must submit an "End of the Project Report" containing at least the following information:

    a) Direct outputs of the project

    b) Extent of achievement of the original project objectives

    c) Technology transfer and commercialisation approach if any

    d) Benefits of the project, particularly project outputs and organisational outcomes

    e) Assessment of the project team, research approach, project schedule and project costs

    f) Sector / national impacts of the project.

    g) Technical Reports of the project

71. The End of the Project Report will be reviewed by the Commission or a panel it designates through a set of previously defined forms.

72. The Commission or the Fund's Administrator reserves the right to call for periodic information on progress or to conduct site visits during or after the project has been completed.

73. The Fund reserves the right to require the Institution to complete and submit a statement of expenditure at any time during the course of a grant, or to provide supplementary information in support of an interim or final expenditure statement.

74. The Institution shall return the unexpended grant to the Fund within three (3) months after the completion of the project.

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24 September 2013

ANNEX: UNESCO CLASSIFICATIONS

Fields of Science (FoS 2007)

1. Natural Sciences
   - 1.1 Mathematics
   - 1.2 Computer and information sciences
   - 1.3 Physical sciences
   - 1.4 Chemical sciences
   - 1.5 Earth and related environmental sc.
   - 1.6 Biological sciences
   - 1.7 Other natural sciences

2. Engineering and Technology
   - 2.1 Civil engineering
   - 2.2 Electrical, electronic, information eng.
   - 2.3 Mechanical engineering
   - 2.4 Chemical engineering
   - 2.5 Materials engineering
   - 2.6 Medical engineering
   - 2.7 Environmental engineering
   - 2.8 Environmental Biotechnology
   - 2.9 Industrial biotechnology
   - 2.10 Nano-technology
   - 2.11 Other engineering and tech.

3. Medical and Health Sciences
   - 3.1 Basic medicine
   - 3.2 Clinical medicine
   - 3.3 Health sciences
   - 3.4 Health biotechnology
   - 3.4 Other medical sciences

4. Agricultural Sciences
   - 4.1 Agriculture, forestry, and fishery
   - 4.2 Animal and dairy science
   - 4.3 Veterinary sciences
   - 4.4 Agricultural biotechnology
   - 4.5 Other agricultural sciences

5. Social Sciences
   - 5.1 Psychology
   - 5.2 Economics and business
   - 5.3 Educational sciences
   - 5.4 Sociology
   - 5.5 Law
   - 5.6 Political Science
   - 5.7 Social and economic geography
   - 5.8 Media and communications
   - 5.9 Other social sciences

6. Humanities
   - 6.1 History and archaeology
   - 6.2 Languages and literature
   - 6.3 Philosophy, ethics and religion
   - 6.4 Art
   - 6.5 Other humanities

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Socio-economic objectives (SEO) (based on NABS 2007)

1. Exploration and exploitation of the earth
2. Environment
3. Exploration and exploitation of space
4. Transport, telecommunication and other infrastructures
5. Energy
6. Industrial production and technology
7. Health
8. Agriculture
9. Education
10. Culture, recreation, religion and mass media
11. Political and social systems, structures and processes
12. General advancement of knowledge
13. Defence

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