



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

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

By:

Gussai Sheikheldin and Heric Thomas

Science, Technology and Innovation Policy Research Organization (STIPRO)

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## Executive summary

The National Commission for Science and Technology (NCST) of Malawi is a relatively young Science Granting Council. It was established in 2003 by an Act of parliament, and began activities in 2010. Given its relatively short history, it has a good record of collaborations with academia and other SGCs from outside of Malawi, but not yet with the private sector in Malawi. Prior to the establishment of NCST, the Government of Malawi had other channels through which it supported national and international collaborations with regards to Science, Technology and Innovation (STI). An example of an international collaboration is the 2007 agreement with the Government of South Africa on science and technology cooperation.

The national scene of STI in Malawi is largely shaped by the Science and Technology Policy and Act of Science and Technology, 2003. It is also influenced, to date, with challenges of limited funding for STI research and development as well as research-industry linkages, as well as shortages of human resources and capacities in initiating and managing research-industry collaborations.

An anticipated, upcoming policy for Intellectual Property Rights (IPR) is seen by actors in public, academia and private sectors as an opportunity and facilitator for future public-private partnerships in linking research and industry. Whether it will be the case in reality remains to be seen.

NCST is showing serious engagement in the SGCI. That should be noted and continued upon.

## 1. Introduction and objectives of the baseline survey

The Science Granting Councils Initiative (SGCI) is a 5-year initiative that seeks to strengthen the capacities of science granting councils (SGC) in sub-Saharan Africa (SSA) in order to support research and evidence-based policies that will contribute to economic and social development. The objectives of the SGCI are to strengthen the ability of Science Granting Councils to:

- i. Manage research;
- ii. Design and monitor research programmes based on the use of robust science, technology and innovation (STI) indicators;
- iii. Support knowledge exchange with the private sector; and
- iv. Establish partnerships between Science Granting Councils and other science system actors.

The major aim of the baseline survey is to evaluate the state of research collaborations (Public-Private Partnerships, PPPs) amongst the Science Granting Council (SGCs), researchers, the private sector and other SGCs in Malawi and international collaboration of the Malawian SGC with other SGCs.

The specific objectives of the study are to:

- i. Articulate the factors that constrain or promote public-private partnerships, scientific collaboration and Knowledge Transfer.
- ii. Gather information on the SGC's capacity needs and skills gaps for collaboration with other organizations, especially the SGC; and supporting research - productive sectors linkages.
- iii. Review the legal and policy frameworks and environment under which SGCs operate (Institutional and National) in so far as support to PPP and international collaborations are concerned.

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

## 2. Methodology

Interviews were conducted in Malawi from December 12, 2017 to December 16, 2017 by STIPRO, a member of the ACTS consortium, to evaluate the state of collaborations amongst the Science Granting Council (SGC), researchers, the private sector and other SGCs in Malawi. The STIPRO team worked with the SGC of Malawi, NCST, to conduct the baseline survey. The team interviewed key personnel from NCST as well as from the Lilongwe University of Agriculture and Natural Resources (LUANAR). The team also explored secondary data information to supplement the interviewees.

## 3. State of research collaborations in Malawi facilitated by NCST

The National Commission for Science and Technology (NCST) was officially established by act of parliament in 2003. Its establishment came due to recommendation by the national science and technology policy of 2003. It began activities in 2010. That means that, relatively, NCST is quite a young organization, and that provides for a host of challenges as well as opportunities. Being new may allow it to be flexible to learning from best practices with minimum institutional resistance, while it may also make it more tasking to materialize the full scale of what an SGC is expected to do, due to limited experience.

According to the national S&T policy, NCST was established to be “as the apex body responsible for the effective management and coordination of an efficient and development-oriented S&T policy and strategy.” Currently, NCST has a total number of 33 staff.

However, it is worth mentioning that prior to the establishment of NCST, the government of Malawi had other channels through which it supported national and international collaboration with regards to STI. An example of that is the agreement with the government of South Africa on science and technology cooperation (signed August 13, 2007). This agreement drew main channels of cooperation between the two countries in issues relevant to enhancing the atmosphere of S&T in both countries. It highlights an encouragement for sharing knowledge, ideas, research initiatives, and other relevant endeavors. Understandably, the agreement is not specific on details, but acts as a greenlight for relevant agencies in both countries to pursue mutual benefits in the area.

In terms of collaborations, NCST can be said to have a reasonable record of collaborations compared to its age. Table 1 below highlights major ones between NCST, academia and the private sector, as well as between NCST and other SGCs:

*Table 1: NCST collaborations*

| With academia and the private sector  | With SGCs   | Comments/Notes   |
|---|---|--|
| <ul style="list-style-type: none"> <li>• University of Malawi – Chancellor College</li> <li>• Lilongwe University of Agriculture and Natural resources</li> <li>• Mzuzu University</li> <li>• Malawi University of Science and Technology</li> <li>• University of Lancaster</li> <li>• University of Zambia</li> <li>• Kamuzu Academy</li> </ul> | <ul style="list-style-type: none"> <li>• SGCI has signed a MOU with research council of Zimbabwe to collaborate on Scientific collaboration</li> <li>• Similar discussions with NRF of South Africa are on-going</li> <li>• RECIRCULATE: initiative led by Lancaster University, UK, and the Centre for Global Eco-Innovation, with several African partners. NCST is partner from Malawi.</li> </ul> | <p>RECIRCULATE aims to grow capacity and capability in Africa’s eco-innovation community. According to the initiative, it “supports new partnership-based approaches to enable African researchers to grow transformational impact through (i) working with, in and for their communities and (ii) developing robust, durable and equitable partnerships with UK researchers.”</p> |
| <ul style="list-style-type: none"> <li>• Malawi Conference of Chambers of Commerce and Industry</li> </ul>  | <ul style="list-style-type: none"> <li>• A collaboration with USAID under the Program of Bio Safety System (PBS)-the project that support research in biotechnology funded by USAID</li> <li>• National Commission of Health of Malawi-Carried out research on traditional medicine funded by Global Fund.</li> </ul>   |  |

|   |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>• National Aids Commission</li> <li>• Ministry of Finance – Department of Economic Planning</li> </ul> | <ul style="list-style-type: none"> <li>• Research dissemination in collaboration with Ministry of Economic Planning, Finance and Development. Collaboration is 50/50</li> </ul> |  |
|---|---|--|

The benefits of such collaborations are many for NCST staff, among which are:

- Skills training such as proposal development and project implementation
- SGC staff are provided with training opportunities through workshops etc
- Skills in the development of products/ systems for use by the rural communities
- Sharing of information and skills

On the other hand, what NCST provides to collaborating partners are:

- Skills training (and types thereof)
- Embodied knowledge e.g. products
- Human capital through personnel exchanges

Another part of such collaborations is also organizations events and forums for dissemination of research results.

### 3.1 State of PPP collaborations facilitated by NCST

Public-Private Partnerships that NCST is likely to engage revolve around research interests between industries and research institutes. Few PPP collaborations facilitated by NCST are on record to date.

Reasons for that, according to NCST respective personnel, are:

- Researchers and SGCs in Malawi are yet inadequately trained in entrepreneurship.
- Inadequate financial resources allocated for research in general and collaborative research in particular.
- Both researchers and the private sector are unwilling to reach out to one another because of absence of alignment, thus far, between needs of researchers and that those of private sector.
- Intellectual Property Rights Policy still in draft. It is expected to incentivize more PPPs once in effect.
- There is little or no mechanism in place for translating research results into products.
- Research institutions in Malawi do not have industrial liaison offices or if any in place are not effective.

As for examples of collaborations between the private sector and academia (not necessarily facilitated by NCST), Exagris Africa Ltd. have had Masters' research students from LUANAR working on aflatoxin management in groundnuts and agronomic practices with Exagris. The research is ongoing (as of January 2018). Exagris are also collaborating with the University of Georgia on peanut research activities.

### 3.2 State of collaboration of NCST with other SGCs

To date, the only clear collaboration between NCST and another SGC (outside Malawi) is a recent MOU signed with the Research Council of Zimbabwe. Other than that there were earlier collaborations of similar nature but not managed by NCST, such as the agreement between the Government of Malawi and the government of South Africa on science and technology cooperation (since 2007) and the recent collaboration between NCST and Zambia's National Science and Technology Council in co-hosting the 6<sup>th</sup>

Africa regional meeting for the Global Research Council and the annual forum (and Monitoring, Evaluation and learning workshop) for the Science Granting Councils Initiative, both held in Livingstone, Zambia between November 22 and 24, 2017.

So far, it is observed, joint publications, patents and consulting opportunities have not yet materialized from these collaborations.

## 4. Factors constraining and enabling collaboration and knowledge transfer between NCST and other SGCs

(Please refer to 'State of PPP Collaborations' above)

Additional factors:

- Non-Alignment of the programs of SGCs
- Differences in priorities at the national levels

### 4.1 SGC related policy frameworks

To date, it seems that there are no internal particular policy frameworks within which NCST operates regarding this area. However, being a relatively new organization, NCST may be on its way to putting that in place. Particularly, after the IPR policy is out (currently in draft review phase), we can expect that NCST will soon have relative policy frameworks in place.

The most notable policy, according to private sector representatives interviewed for this survey, is the MDGs (Millennium Development Goals) which guide government in policies formulation. The specific policies in this industry would be the National Agriculture policy.

### 4.2 SGC capacities and capabilities

NCST staff commented about the existence of staff within the organization with following skills:

- Private Sector Skills (N/A)
- Technology Transfer **(1)**
- Partnerships Management **(N/A)**
- Team Building **(N/A)**
- Research Management **(N/A)**

Some of the grants that NCST staff managed before:

- Health Research Capacity Strengthening Initiative (ended).
- Small grant scheme (on-going) for travel, subscriptions, publications etc.

### 4.3 External policy and legal frameworks

1. The Science and Technology Policy (2003): acts as a national umbrella policy to highlight the state's support for efforts aimed at increasing and promoting S&T outputs and utilizing them in interests of national development. A national policy serves as a common language through which the variety of actors in STI in Malawi can work together.
2. The Science and Technology Act (2003): in addition to giving the principles of the Science and Technology Policy (above) a legal credibility, the act officially established NCST and determined its functions, structure and place within the state apparatus (see Annex 2).
3. The intellectual property policy (though still in draft form)

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

(Please refer to 'State of PPP Collaborations' above)

It is important to stress, for this point, that the granting portfolio is limited due to very limited funds. Very little granting has taken place. Without the existence of a sufficient granting portfolio, there is little room for any SGC to engage the private sector in research collaboration efforts.

There are however recognized areas of possible collaboration, such as:

- Access to various knowledge transfer channels
- Training opportunities for collaborating organizations
- Tax incentives (for private sector collaborators)
- Technical advice (for industries from the private sector)
- R&D subsidies (for academia)

### 5.1 SGC related policy frameworks

Through its current participation in the SGCI, NCST is currently involved in processes of bringing such policy frameworks to existence.

### 5.2 External policy and legal frameworks

(Please refer to subsection 'External policy and legal frameworks' of previous section above)

## 6. Recommendations for SGCs

- The issue of PPP needs to be discussed when it comes to collaboration and sharing of resources in implementing technology development and transfer. The local private sector of Malawi could be consulted from an early stage to participate in envisioning how PPP collaborations would look like and what to expect from them.
- NCST seems to have already established good collaborations with academia in Malawi (but not yet as PPPs where the private sector is involved). It can capitalize on that to link academia to industry.
- The coming of the IPR policy into existence is expected to set in motion various opportunities for PPP collaborations. It is perhaps prudent to temper that expectation with measurable outputs.
- NCST is showing serious engagement in the SGCI. That should be noted and continued upon.

## References

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Malawi Government, DFID and IFAD. 2013. Rural Livelihood and Economic Enhancement Programme (RLEEP). Agreement No. RLEEP/RG/043/2013.

Malawi Government. 2003 (June). Science and Technology Policy.



## Annexes

### Annex 1: List of key personnel interviewed

| Name                | Organization and position  | Contact  |
|---------------------|--|--|
| Fredrick Munthali   | NCST, Chief Research Services Officer (Engineering, e and Industry)  | <a href="mailto:fmunthali@ncst.mw">fmunthali@ncst.mw</a>   |
| Mike G Kachedwa     | NCST, Chief Research Services Officer & Head of Health, Social Sciences & Humanities Division  | E-mail: <a href="mailto:mkachedwa@ncst.mw">mkachedwa@ncst.mw</a><br>Mobile phone No:<br>+265 999 360<br><a href="mailto:516mkachedwa@ncst.mw">516mkachedwa@ncst.mw</a> |
| Prof Timothy Gondwe | Lilongwe University of Agriculture and Natural Resources (LUANAR)  | <a href="mailto:tgondwe@bunda.luanar.mw">tgondwe@bunda.luanar.mw</a>   |
| Stanlee Juma        | Farms Operations Manager, Exagris Africa Ltd<br><br>(company established 2008, has around 650 permanent plus 1500-2000 seasonal staff) | <a href="mailto:sjuma@exagrisafrica.com">sjuma@exagrisafrica.com</a>   |

## **Annex 2: (from the 'Act of Science and Technology, 2003)**

### **The functions of the National Commission for Science and Technology:**

(1) The functions of the Commission shall be to advise the Government and other stakeholders on all science and technology matters in order to achieve a science and technology-led development

(2) Without prejudice to the generality of subsection (1), the Commission shall –

(a) Create science and technology awareness at the political and other levels of society and thereby obtain their commitment towards the value of science and technology as integral parts of national development strategies;

(b) establish mechanisms to solicit support from the executive and legislative branches of Government, policy-makers and the private sector in order to promote the formulation and revision of policies, strategies, laws and regulations for science and technology and the monitoring of the implementation of science and technology development activities;

(c) source funding from within and outside Malawi to finance the national research and development effort and allocate the funds to research institutions based on set priorities;

(d) chart out national direction and establish national priorities in science and technology development in relation to socioeconomic development needs;

(e) appraise, review, monitor and evaluate priority research and development programmes, plans and projects of research and development institutions and undertake independently or in collaboration with any appropriate person, body or institution surveys and research investigations considered necessary;

(f) promote and advocate for the development of science and technology human resources by building capacity in science and technology education and training programmes and providing assistance in the development of appropriate science and technology curricula of the various levels of the education systems;

(g) create a conducive working environment for science and technology personnel in order to retain them and attract those outside Malawi to return through, inter alia, providing appropriate science and technology infrastructures and facilities;

(h) encourage the use of local expertise in science and technology matters through use of a set of professional standards, ethics and guidelines and support professional science and technology associations;

(i) encourage the establishment and promote the coordination of research institutions that undertake research and development activities which promote national socio-economic development and other specialized research and development activities in a manner that enhances corporation and collaboration among national and international science and technology personnel and institutions;

(j) organise national science and technology fairs and open days so as to promote national science and technology awareness and culture, documentation, consolidation and dissemination of relevant science and technology information and generally promote the role of information technology;

(k) promote the transfer of technology through conventional methods including information exchange and training, purchase and licence agreements and joint venture agreements with foreign partners in which research and development is given prominent consideration and, in support of this, establish and maintain national capacity for negotiating, monitoring and regulating technology for negotiating, monitoring and regulating technology transfer agreements;

(l) promote and encourage the patenting and commercialisation of research results to farmers, industrialists and entrepreneurs as end-users in a manner that enhances economic diversification, competitiveness and employment generation;

(m) promote sustainable socio-economic development through the general and application of environmental friendly technologies so as to protect and conserve natural resources;

(n) develop and synthesize science and technology indicators covering such aspects as research and development statistics, bibliometrics, technology balance of payments statistics, patent data, human resources and innovation data using internationally accepted procedures and standards;

(o) conduct an inquiry into any matter being investigated by the Commission;

(p) sponsor such national and international scientific conferences as it may consider appropriate;

(q) promote and maintain cooperation in science and technology with similar bodies in other countries and with international bodies connected with science and technology;

(r) prepare, every two years, a state of Science and Technology Report for presentation to the National Assembly; and (s) perform any other function or activity related to science and technology.