Science Granting Councils in Sub-Saharan Africa

Country Report

Burkina Faso

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Acronyms and abbreviations

ASTII	African Science, Technology and Innovation Indicators
CESup	*Centre d'Enseignement Supérieur* (Higher Education Training Centre of Ouagadougou)
CFAF	*Communauté Financière Africaine Franc* (African Financial Community Franc)
CG	*Comité de Gestion* (Management Committee)
CNRST	*Centre National de la Recherche Scientifique et Technique* (National Centre for Scientific and Technological Research)
CPES	*Centre de Préparation aux Enseignements Secondaires* (Institute for Teacher Training)
DAF	Director of Administration and Finance
DGRST	*Délégation Générale à la Recherche Scientifique et Technique* (General Delegation for Scientific and Technological Research)
FARES	*Fonds d'Appui de Recherche en Santé* (Fund for Support of Health Research)
FONER	*Fonds National pour l'Education et la Recherche* (National Fund for Education and Research)
FONRID	*Fonds National de la Recherche et de l'Innovation pour le Développement* (National Research and Innovation Fund for Development)
GDP	Gross domestic product
GERD	Gross domestic expenditure on research and development
HDI	Human Development Index
IFAN	*Institut Fondamental d'Afrique Noire* (Fundamental Institute of Black Africa)[1]
INERA	*Institut de l'Environnement et de Recherches Agricoles* (Institute for Environment and Agricultural Research)
INSS	*Institut des Sciences des Sociétés* (Institute for Social Sciences)
IRSAT	*Institut de Recherche en Sciences Appliquées et Technologies* (Applied Sciences and Technology Research Institutes)
IRSS	*Institut de Recherche en Sciences de la Santé* (Health Sciences Research Institute)

[1] Originally the *Institut Français d'Afrique Noire* (IFAN) became the *Institut Fondamental d'Afrique Noire* in 1966 and kept its original acronym.

LDRV	*Laboratoire de Diagnostic et de Recherche Vétérinaire* (Laboratory of Diagnostic and Veterinary Research)
MESS	*Ministère de l'Enseignement Secondaire et Supérieur* (Ministry of Secondary and Higher Education)
MRSI	*Ministère de la Recherche Scientifique et de l'Innovation* (Ministry of Scientific Research and Innovation)
ORSTOM	*Office de la Recherche Scientifique et Technique Outre-Mer* (Office of Overseas Scientific Research)
PAP	*Plan d'Action Prioritaire* (Priority Action Plan)
PNRST	*Politique Nationale pour la Recherche Scientifique et Technique* (National Policy for Scientific and Technological Research)
R&D	Research and Development
S&T	Science and Technology
SC	Scientific Council
SCADD	*Stratégie de Croissance Accélérée et de Développement Durable* (Accelerated Growth Strategy and Sustainable Development)
STC	Scientific and Technical Committee
STI	Science, technology and innovation

BURKINA FASO

Burkina Faso (formerly Upper Volta) achieved independence from France in 1960. Repeated military coups during the 1970s and 1980s were followed by multiparty elections in the early 1990s. Current President Blaise Compaore came to power in a 1987 military coup, and has won every election since then. Burkina Faso's high population density and limited natural resources challenge national research and innovation capacities.

Demographic Indicators	Source Year	Estimate
Population	2013	17 812 961
Annual population growth (%)	2013	3.06
Life expectancy at birth (in years)	2013	54.43
HIV adult prevalence rate (%)	2009	1.2
Percentage of urban population (% of total population)	2010	26
GDP per capita (in USD)	2012	1 400
Unemployment rate (%)	2004	77
Population below poverty line (%)	2009	46.7
HDI ranking	2012	183

Source: CIA factbook 2013

Burkina Faso is an extremely poor, landlocked country which ranked 183th on the UNDP's Human Development Index (HDI) in 2012. It has 18 million inhabitants, mainly dependent on self-subsistence agriculture. Owing to low rainfall, the agricultural sector, which employs the majority of the population, seldom yields harvests that are sufficient for domestic consumption. Although Burkina Faso has a low population growth, more than 75% of the population is unemployed (see table above). This statistic, however, may seem slightly inflated due to the agrarian nature of the population.

Figure 1 Map of Burkina Faso

S&T Indicators

- ✓ Approximately 80% of research funding is from the international donor community
- ✓ 43.9% of scientific output (2005-2009) was in medicine
- ✓ GERD 0.20% (2009)

Source: African Innovation Outlook (2010)

Note: The bibliometric data produced by AU-NEPAD (2010) uses SciVerse Scopus indexing 16,000 journals as a source

1. General overview[2]

1.1. Building the Science and technology system

Early research structures in the country were established by France at the beginning of the 19th century. The first experimental agricultural research station of the colony of Upper Volta was established in 1919 in the region of Koudougou (Saria) and began operations in 1925. Medical research was introduced in 1939 with the creation of MURAZ Centre first specialised in sleeping sickness. In 1937, Maurice Moutet, French Minister of Colonies created the French Institute of Black Africa (IFAN) (*Institut Fondamental d'Afrique Noire*) with headquarters in Dakar. The latter institute started its activities in Ouagadougou in 1949. The Veterinary Laboratory created in 1954 became in 1960 the Laboratory of Diagnostic and Veterinary Research (LDRV).

At the time of independence, in 1960, Upper Volta inherited several research stations and centres that continued to be managed by the former French colonial power. This phase was also marked by the creation or the restructuration of numerous research laboratories and centres such as LDRV (1960), CTFT (1963), CVRS (1965), IEMVT (1972), CERCI and ISP (1973) and IRFA (1977). In addition, several bilateral, regional or international agencies were established in Burkina Faso: OCCGE (1960), EIER (1969), CAMES (1968), and SAFGRAD (1977).

In the absence of a national research centre or university, these research activities were however completely disconnected from a local scientific life. In addition to the lack of national researchers and technicians, this situation can be explained by the adoption of a pan-African vision linked to a sub-regional integration of Upper Volta particularly concerning scientific research and higher Education. A lot of hope and expectations were placed in universities in the West African Region, particularly Abidjan and Dakar. A tangible number of Burkinabé scientists were indeed trained in Dakar and Abidjan Universities. The level of implication of these universities was such that these universities are still today referred to "universities of the first generation" in Burkina Faso. Conflicts between the different States in the West African Region led Upper Volta authorities to rethink its policy and, while increasingly sending Burkinabé students to France, to start developing its own Higher Education System.

1960-1978 Research activities are carried out by the French institutes IRAT, IRCT, OHRI and CTFT

1978 Creation of the Institute of Agronomic Research (IRA)

1978 National Centre for Scientific and Technological Research (CNRST)

1981 Institute of Agricultural Research voltaic and livestock (IVRAZ)

1988 Institute for Studies and Agricultural Research (INERA)

1994 Creation of FONER

1995 National Forum for Scientific and Technological Innovation (FRSIT)

1995 Strategic Plan for Scientific and Technical Research (PSRS)

1996 Institute of Environment and Agricultural Research (INERA)

1997 Institute of Research in Applied Sciences and Technology (IRSAT)

2008 Creation of FARES

2011 Ministry of Scientific Research and Innovation (MSRI) was created

Creation of FONRID

[2] Much of this part is borrowed from the work of our colleague and friend Hocine Khelfaoui who passed away in March 2013 (Khelfaoui, 2000).

The failure of the West African experience coupled with the desire to put in place an independent research and higher education system imposed two main tasks:

- the establishment of an institutional framework to organise an support research activities;
- The creation of a national higher education system

The desire to provide science with a national institutional framework can be measured by the frequency of restructuring that research and higher education institutions and governing bodies went through. IFAN became the Voltaïque Scientific Research Centre (CVRS) in 1965 and then the National Centre for Scientific and Technological Research (CNRST) in 1978 that absorbed not only CVRS but also all the agriculture research institutes formerly managed by French and international research institutions. The Institute for Teacher Training (CPES), created in 1965, later became the Higher Education Training Centre of Ouagadougou (CESup) (*Centre d'Enseignement Supérieur*), and encompassed all higher education and research structures of the country. The research institute was withdrawn from the CESup in 1972 and was renamed the University of Ouagadougou, the first University in Burkina Faso, with an estimated initial number of 374 students.

1978 with the creation of CNRST and the Ministry of Higher Education and Scientific Research (MESRS) marked the beginning of second phase characterised by national ownership and coordination. This new direction was embedded in the approach and motivations of the Farako-Ba national symposium organised in 1987 whose title was "a scientific research for the masses and for national development, independent, self-sufficient and planned"[3]. This symposium was the occasion of great debates involving all research actors including representatives from bilateral and multilateral scientific cooperation. Beyond political slogans, this phase was mainly marked by organisational fixes, gains consolidation and further attempts of national ownership.

The third phase, covering the 1990s, corresponds to the overall rebuilding of the national scientific system. The culmination of this phase is the development and adoption of the Strategic Research Plan in 1995. The conception of this plan mobilised more than 250 national and foreign experts. This overhaul has resulted in the establishment of a coherent and integrated system based on two main poles: the CNRST and the University. A specific and complementary orientation was defined for each pole. The creation of the General Delegation for Scientific and Technological Research (DGRST) the same year marked also the political will of leaders to institutionalise scientific research at a national level. Since then, the strategic plan has been a tool for the promotion and coordination of all research activities undertaken at national level. A revision of the National Strategy took place in 2011 when the National Policy for Scientific and Technological Research (PNRST) was adopted when the Ministry of Scientific Research and Innovation (MSRI) was created and implemented in 2013.

[3] Title in French : *« Une recherche scientifique de masse au service du développement, indépendant, autossufisant et planifié ».* This symposium took place at the experimental station of Farako-Ba, 5-8 February 1987.

Burkina Faso's scientific research system enjoys a relative stability around the above mentioned two poles: the CNRST with its five research institutes and the three universities (Ougadougou, Bobo Dioulasso and Koudougou). The main institutions which presently conduct research in Burkina Faso include:

- University of Ouagadougou
- Polytechnic University of Bobo Dioulasso
- University of Koudougou
- National Centre for Scientific and Technological Research (CNRST): INERA, IRSS, IRSAT, FRSIT and INSS.
- National Forest Seed Centre
- National Centre for Research and Fight against MalariaNouna Health Research Centre
- Nanoro Clinical Research Unit
- Muraz Centre
- The National Laboratory of Public Health
- Directions of research departments
- Institut de Recherche pour le Développement
- Several regional institutions of coordination or evaluation (OCCGE, CAMES …)
- NGOs
- Research of bimolecular research centre Pietro Annigoni; and
- Other private actors.

1.2. Governance

The Ministry of Scientific Research and Innovation (MSRI) was created on 16 January 2011 with the purpose of supporting research to ultimately improve socio-economic development in the country. Consequently, scientific research was detached from higher education that is today part of the Ministry of Secondary and Higher Education (MESS). In order to achieve the Millennium Development Goals, the new development strategy of the country – as described in the Accelerated Growth Strategy and Sustainable Development (SCADD) framework – places particular emphasis on scientific research, technology and innovation as essential drivers for development. The MSRI's main mission is to design, implement and monitor government policy toward research and innovation for economic and social development in Burkina Faso. In light of this, the MSRI applies itself in the following nine fields:

- Scientific and technological research
- Innovation
- Optimisation of the results of research and innovation
- Information and communication science and technology
- Scientific and technical cooperation
- The institutional framework of scientific research and innovation
- The funding of scientific research and innovation
- The standards and ethics of scientific research and innovation; and

- Systems for monitoring and evaluation of scientific research and innovation.

The creation of MRSI has provided more visibility to research and innovation activities in Burkina Faso and contributed to strengthening research capacities notably through the coordination of national research programmes and the needed recruitment of additional research personal. But the fact that two distinct ministries are responsible for scientific research on one hand and higher education on the other may lead to mobilisation and coordination problems. This in turn may result in a lack of synergy or pooling of resources between research and higher education institutions.

1.3. STI policies

Burkina Faso has had limited experience in the field of scientific research and technology policy. The first Scientific Strategic Research Plan was adopted by the government in 1995. In addition to the priorities that were given to that of research, this document was accompanied by a deep restructuring of institutions such as the National Centre for Scientific and Technological Research (CNRST).

The MRSI is responsible for the design, the implementation and monitoring of government policy on research and innovation for economic and social development in Burkina Faso. To do this effectively and efficiently, the MRSI has engaged with its partners in the formulation of the National Policy for Scientific and Technological Research (PNRST) for the period 2013-2025. The development of the policy was conducted in a participatory manner through a strategic planning process although a number of actors from the higher education sector are claiming that they were not associated to the process.

The PNRST is consistent with the two main sources of development, namely forecasting for the 2025 National Survey of Burkina (Burkina ENP 2025), and the Growth Strategy for Accelerated and Sustainable Development (SCADD). This strategy acts as a source of planning, monitoring and evaluation for scientific and technological research activities and programmes undertaken at national level. Finally, the PNRST is the guiding framework for government action in the area for a ten-year period, allowing for it to contribute to the effective implementation of new aspirations for growth and development. The Priority Action Plan (PAP) (2013-2015) outlines the government's planned research activities for departments. Its implementation aims contribute to achieving the vision and direction of the science and technology sector by 2025. While the PNRST deals with the organisation of government tasks at the sectoral level, the PAP provides a framework for institutions and organisations to enable increased efficiency and effectiveness of the MRSI's activities in the context of this sectoral policy. The PAP is focuses on the following:

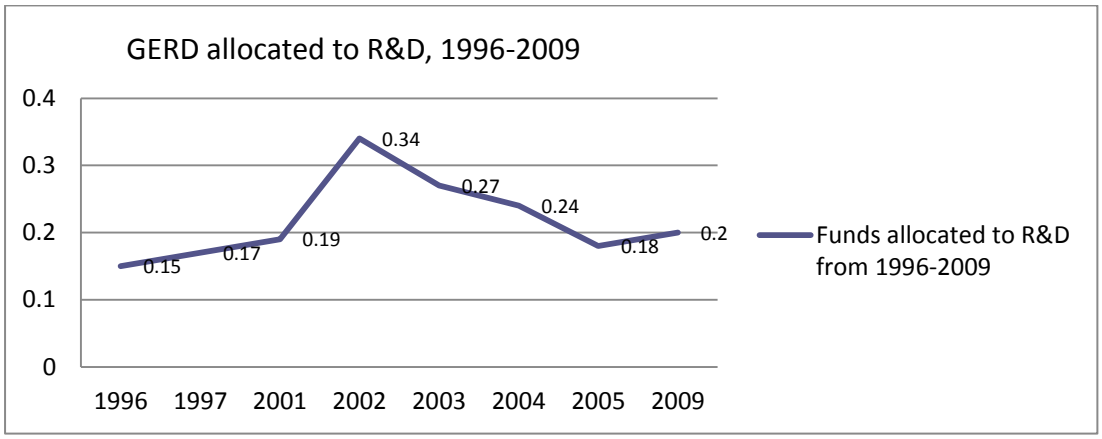
- Acting as a reminder of PNRST's broad vision
- Offering a presentation of programmes and priority actions of the PNRST
- Funding the PNRST
- Providing strategies for implementation, monitoring and evaluation; and
- Addressing assumptions and risk management.

The PNRST therefore aims to coordinate the efforts of STI in Burkina Faso. The state has long been the main role player in financing sectoral research. However, until recently, most of this contribution was towards the operating expenses of structures. The PNRST therefore emphasises restructuring the science system to allow for a national research fund to coordinate research activities. Specific financial support for scientific research and innovation for sustainable development in Burkina Faso was allocated to the National Fund for Development Research and Innovation (FONRID).

1.4. Funding by numbers

Figure 2 indicates the percentage of Burkina Faso's gross domestic expenditure on research and development allocated to scientific research and innovation. The year 2002 saw a sharp increase, with GERD estimated at 0.34%. Figures for 2009 estimate GERD at 0.2%. These figures indicate that public funding for STI remains very limited and insufficient.

Figure 2: GERD in Burkina Faso, 1996-2009



Source: *Le financement endogène de la recherché en Afrique de l'Ouest et du Centre,* Focus Africa

The consequence of this fact is that funding of STI in Burkina Faso is heavily dependent on international donors. Although this trend seems to be general in most African countries, Burkina Faso should nonetheless improve its level of national financing to reach at least 1% of GDP.

Contrary to the majority of other African countries, Burkina Faso has elaborated a clear strategy for leading research. However, it lacks adequate funding to achieve this strategy. Scientific activity is financed mostly by foreign aid and cooperation. External funding represents 95%, and sometimes even 100%, of research funding. This aid directly supports research programmes, running costs and salaries which should be financed by the government. Since 1990, the annual external budget has been estimated at around USD 600 million which is sourced from around twenty different organisations. Funding in the form of bilateral cooperation, primarily from USAID, the French, ACDI and IDRCI in Canada, the World Bank and the UNDP makes up 74% of this amount. Multilateral organisations provide 20% of external subsidies and private institutions around 6%. According to an evaluation of scientific managers, academic research funding depends on cooperation from the

following sources (in descending order): French, Dutch, Canadian (ACDI and IDRC), Swedish, Danish and USAID (Rath, Khelfaoui & Gaillard, 2009).

Research funding has been hotly debated at various conferences. The obstacles have been identified as the following: insufficient conviction among the political leaders and the elite that research can contribute to development problems, insufficient funding, political instability and international competition. This scepticism towards research is expressed by a famous sentence attributed to a Burkinabé political leader: "Researchers who are merely doing research can be found but researchers who are producing results are hard to find[4]" (Khelfaoui, 2000).

2. Actors involved in funding

A multiplicity of actors is involved in funding research activities in Burkina Faso. In addition to foreign sources mentioned earlier, national higher education and research institutions receive an annual budget from the government. State funding is, however, insufficient and only marginally used for research activities.

Three national agencies in Burkina Faso allocate funds for research. The National Fund for Research and Innovation for Development (FONRID) (*Fonds National de la Recherche et de l'Innovation pour le Développement*) funds across all sectors, while the National Fund for Education and Research (FONER) (*Fonds National pour l'Education et la Recherche*) focused primarily in the education sector. The Fund for Support of Health Research (FARES) (*Fonds d'Appui de Recherche en Santé*) funds research in health sciences.

2.1. FONRID

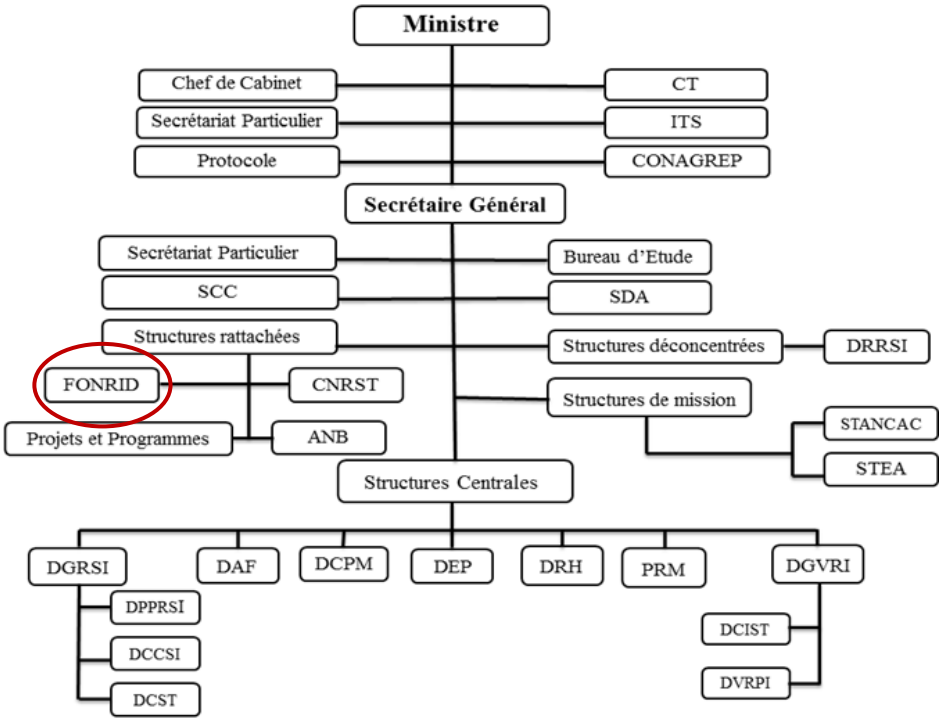
2.1.1. Background, history and legal status

The recent creation (2011) of the National Fund for Research and Innovation for Development (FONRID) is expected to play an important role for research and innovation. Scientific and technological research has been conducted for over half a century in Burkina Faso, but today the state subsidy is insufficient and does not allow for the effective carrying out of research activities. In order to enable scientific research and innovation to contribute to the development policy of Burkina Faso, the government created FONRID.

FONRID is a national fund for financing research established by Decree 2011-828/PRES/PM/MRSI/MEF signed on 27 October 2011. It has a legal personality and managerial autonomy. It is under the technical supervision of the MSRI and under the financial supervision of the Ministry of Finance. FONRID is governed by the MSRI.

[4] « les chercheurs qui cherchent on en trouve, les chercheurs qui trouvent on en cherche »

Figure 3: Structure of the Ministry of Scientific Research and Innovation



ANB	Agence nationale de biosécurité
CNRST	Centre national de la recherche scientifique et technologique
FONRID	Fonds national de la recherche et de l'innovation pour le développement
CONAGREP	Commission national de gestion des ressources phytogénétiques
CT	Conseillers techniques
DAF	Direction de l'administration et des finances
DCCSI	Direction de la coordination et du contrôle de la recherche scientifique et de l'innovation
DCIST	Direction de la communication et de l'information scientifique et technique
DCPM	Direction de la communication et de la presse ministérielle
DCST	Direction de la coopération scientifique ettechnique
DEP	Direction des études et de la planification
DGRSI	Direction générale de la recherche scientifique et technologique et de l'innovation

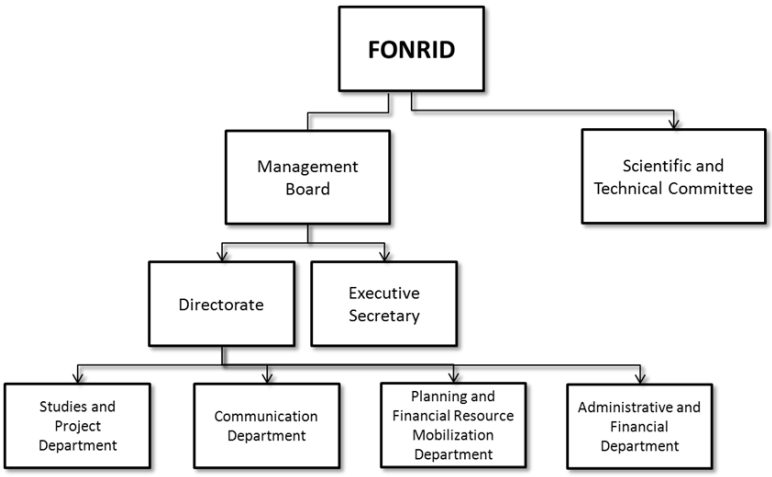
DGVRI	Direction générale de la valorisation des résultats de la recherche et des innovations
DPPRSI	Direction des politiques et de la planification de la recherche scientifique et de l'innovation
DRH	Direction des ressources humaines
DRRSI	Directions régionales de la recherché scientifique et de l'innovation
DVPRI	Direction de la valorisation des résultats de la recherche et de la promotion de l'innovation
ITS	Inspection technique des services
PRM	Personne responsable des marchés publics
SCC	Service central de courrier
SDA	Service de la documentation et des archives
STANCAC	Secrétariat technique de l'Autorité nationale pour la mise en œuvre de la convention sur les armes chimiques
STEA	Secrétariat technique à l'énergie atomique

2.1.2. Management and governance

FONRID is administered and managed by a Management Board and a Director. The Management Board oversees the functioning and management of FONRID. To this end, it examines and adopts:

- The programmes and activity reports
- The estimates of revenue and expenditure
- The annual financial statements
- The conditions of employment of the staff; and
- The conditions of eligibility for funding.

The Board is composed of nine members appointed by the decree of the Council of Ministers, on proposal of the Minister of Scientific Research and Innovation (MSRI), for a term of three years (renewable once). The decisions of the Management Board are binding either by a notice of non-objection of Ministers involved or at the expiration of the period of one month from the date of the filing of the deliberations at the offices of the Ministers. On reviewing proposals, the Management Board is assisted by a Scientific and Technical Committee composed of specialists with demonstrated expertise in the fields covered by the call for research proposals.



Source: FONRID

Figure 4: Organogram of FONRID

The Scientific and Technical Committee is composed of a multidisciplinary team of 20 members appointed as follows:

- Two experts from international institutions working on scientific research and innovation
- Two experts from regional structures engaged in scientific research and innovation; and
- Sixteen national experts.

The Scientific and Technical Committee is linked with the Management Board and its role is to:

- Study and select the projects submitted to the Fund
- Make appropriate recommendations to the Board on projects to be funded
- Ensure the scientific monitoring of projects financed by FONRID and to produce monitoring and evaluation reports; and
- Deal with all other scientific issues that the Board submits.

The Scientific and Technical Department develops and adopts rules of procedure for its organisation and functioning.

The Directorate is the executive body of the Board. As a unit of coordination, FONRID is headed by a Director appointed by the decree of the Council of Ministers on proposal of the Minister of Scientific Research and Innovation. The Director of FONRID has the authority to act on behalf of the Management Board. Structures of management include:

- The secretary
- The administrative and finance department
- The studies and projects department
- The planning and financial resource mobilisation department; and
- The communication department.

The Directorate also has support staff (including a liaison officer, drivers and an imager).

2.1.3. Objectives, functions and fields

The objective of FONRID is to provide a secure framework for financing research and innovation activities and to allow for scientific and technological research to occupy a prominent place in the development policy of the government by promoting its results. It covers various fields of research, such as research and development, innovation and the utilisation of relevant results from both public and private structures.

The mission of the Fund can be summarised as follows:

- Financing of programmes or research projects submitted by public or private structures of research and innovation in Burkina Faso
- Support to public and private research and technological innovations, laboratory equipment or workshops as part of specific programmes of research and development approved by the Fund
- Mediation between national partners, bilateral or multilateral structures and public or private research structures in the negotiation, development and implementation of projects or research programmes
- Funding of quality scientific and technical publications as part of research projects
- Participation in the uptake of research results and technological innovations, by funding result-focused or uptake activities; and
- Funding of short- to medium-term training through exclusive research programmes.

Access to funding is mainly through calls or commissioned projects. Research conducted by inter-institutional and multidisciplinary teams and including short-term training is particularly encouraged. Each research team must have at least three partners with the possibility of an associate at regional or international research organisations operating in the national territory.

2.1.4. Priority setting

Any organisation in Burkina Faso can apply for funding from FONRID as long as their research project objectives align with those identified by the state. For the last call (August 2013) the following broad areas were highlighted: health, agriculture, animal husbandry, societal changes, urbanisation and environmental challenges. Final decision-making on the disbursement of grant lies with the Management Board. FONRID played an integral role in compiling the PNRST of 2013 through a steering committee. Various role players in Burkina Faso have been involved in defining priority themes, prioritising these themes and estimating the budgets that should be allocated to them.

2.1.5. Financing (sources and expenditure)

The financing of FONRID is provided for by state subsidies and the technical and financial contributions of bilateral and multilateral partners. Over each of the years between 2011 and 2013, FONRID received 250 million CFAF (USD[5] 500 000), which increased to 257 million CFAF (USD 514 942). In 2014, FONRID expects an allocation of 400 million CFAF (USD 802 400).

FONRID's provisional strategic plan for 2014-2018 prioritises specific themes and amounts as shown in Table 1.

Table 1 FONRID's estimated budget

Strategic Orientation	CFA Francs	USD
1. To contribute to the improvement of security and food sovereignty for the development of technologies for increasing agricultural productivity, the preservation, development and sustainable use of natural resources for the well-being of populations (rural development)	21 260 million	43 072 760
2. To promote innovative care systems, effective and accessible as well as technologies in health and medicinal plants in order to ensure better protection of public health (human and animal health)	12 400 million	25 122 400
3. To contribute to the development of an education system and vocational training adapted to the socio-cultural realities, and economic policies of the different components of the Burkinabé society	7 595 million	15 387 470
4. To contribute to a healthy and sustainable living environment and access to safe drinking water for the majority of people in both urban and rural areas	7 000 million	14 182 000

[5] Currencies converted with exchange rate as was 1 September 2013

5. To explore and promote all forms and sources of energy for rational, economic and sustainable use by people, the SMI/small- and medium-sized industry and enterprise, and domestic industries	6 600 million	13 371 600
6. To promote research on local materials as effective and accessible alternatives for national crafts and the construction of quality public works	2 250 million	4 558 500
7. To contribute to building a positive national identity, the strengthening of democracy and the anchoring of a culture of good governance and peace	800 million	1 620 800
Additional budgets		
Communication	200 million	405 200
Evaluation	260 million	526 760
Strategy for mobilising financial resources for research **TOTAL**	**58 980 million**	**119 493 480**

FONRID therefore needs CFAF 58 980 million over the next four years, which is considerably more than the state's budget allocation per year.

2.1.6. Call for proposals, selection and peer review

The frequency and number of calls for project proposals depend on the budget allocated. Since 2011, FONRID has made only one call for proposals a year due to limited funding.

Calls for projects take the following form:

- Commissioned projects; and
- Calls for competitive projects

The choice of thematic calls for proposals is made in consultation between users, researchers, research and innovation results users and economic operators. They also take into account general development policy documents of the Ministry (such as SCADD, PAGEDD, SDR and strategic plans). Identified areas are prioritised by the Scientific and Technical Committee (STC) and approved by the Board. However, additional calls for proposals can be launched when funding is available.

Aspects considered in managing proposals are as follows:

- Preparation of the call for proposals
- Approval and publication of the call for proposals
- Preparing the call for proposals
- Prioritising research topics
- The opening and closing (date and time) of the call for project dates
- The procedure for submitting proposals
- The place for receipt of proposals
- Criteria for evaluation of proposals

- List of documents to be provided
- The guide for the preparation of proposals; and
- Contract templates.

Calls for proposals are made by any media deemed appropriate (including posters, newspapers, national journals and FONRID website). In accordance with national research priorities, thematic choices may limit the participation of organisations and research institutions.

After a detailed evaluation by the STC, a report is written to the Management Board by the President of the CSE. Based on the technical project approval file, the Management Board gives its provisional projects financed by the FONRID to the approval of the National Ethics Committee. The maximum project duration is three years. The maximum amount allocated to a project under this fund will be specified for each call for proposals. The estimated budget of the project must be clear and detailed.

Eligible expenses are:

- Equipment (such as computers and laboratory equipment)
- Field trips
- Labour costs
- Scientific production (publications, reports, data sheets and other communication)
- Participation in seminars, conferences and workshops at the national level
- Short training courses within the scope of the project; and
- Support for scientific publications resulting from the results of projects funded wholly or partially.

The implementation of the selected projects will be made official by a contract signed between promoters of selected projects, their home institutions and FONRID.

The funds will be distributed annually on the basis of the project to help justify annual spending. For each project, the release of funds will be the next financial year. Other disbursements will follow once provided technical and financial progress reports are approved.

Following its first call for proposals in its first year of operation (2012), FONRID received sixteen proposals of which only one was approved. This decision was due to the fact that the quality of proposals submitted was sub-standard. This led to a decision to facilitate a training programme on how to prepare a successful research proposal which was financed by the World Bank and FONRID. FONRID organised three training sessions of five days each presented and developed by national experts. This programme reached 160 researchers across Burkina Faso in an attempt to provide a guide to researchers to aid in proposal writing. Researchers across private and public organisations, including universities, were represented. Although capacity building is not explicitly stated as one of FONRID's objectives, the poor quality of proposed research in Burkina Faso ultimately demanded such an intervention. The first commissioned projects were also approved in 2012.

For the second call for proposals, the applicants were asked to first submit a four-page concept note. 69 notes were received. The applicants of 23 of these were encouraged to submit a full proposal. This led to the submission of 22 projects, out of which four projects were approved and six were

postponed for revision. The applicants of the four approved project participated in the training programmes. The result of the second call for proposals is encouraging and points to the importance of organising training courses.

2.1.7. Performance review

Projects funded by FONRID are evaluated on technical and financial aspects. Technical monitoring is done internally on the basis of reports submitted to FONRID by teams and externally by ad hoc committees committed by FONRID. Financial monitoring involves the review of expenditures against the technical and financial performance prepared in accordance with contracts signed between beneficiaries and FONRID.

During the most recent call for proposals (2013), FONRID approved nine projects for funding with a total budget of 262 097 379 CFAF (USD 524 194).

2.1.8. Constraints

The primary constraints to the effective functioning of FONRID include the following:

- FONRID, as a national fund, is very closely aligned with the Ministry. This causes problems in the fact that the World Bank (SFI) (*Société Financiere International*) is very reluctant to provide funding to a funding programme within a ministry. FONRID today is therefore solely reliant on funds from the state and cannot augment these with funding from the World Bank and other national or foreign sources. This also affects the independence of FONRID in that it needs more autonomy and flexibility with regards to financing, reporting and its management. FONRID might therefore benefit if it followed the structure of a foundation rather than a national fund.
- As a public structure, FONRID's budget is annual. Public budgetary procedures are not suitable for funding research projects. The unspent budget portion in any specific year cannot be carried over to the following budget year. By contrast, research projects may be approved at any time; in addition, some projects are conducted based on the season (dry season or rainy season). Projects also tend not to run by calendar year, while the state budget does. It is not possible to place state money in a private bank account. All these constraints make the case for a non-public, more flexible status, such as a foundation.
- FONRID's mission of funding relevant and quality research in Burkina Faso is hindered by poor quality research proposals. This weakness arises from a weak scientific culture. Submitting applications for research funding is new for most Burkinabé researchers and ongoing training in this area is required going forward.

2.2. National Fund for Education and Research (FONER)

2.2.1. Background, history and legal status

Following the creation of the Structural Adjustment Programmes, the number of grants allocated to students decreased significantly. In response to this, the National Fund for Education and Research (FONER) was created by Decree 94-071/PRES/MFPL/MESS/MEBAM on 15 February 1994, mainly to finance loans and grants for students.

The aims of FONER, as defined in the Decree, are:

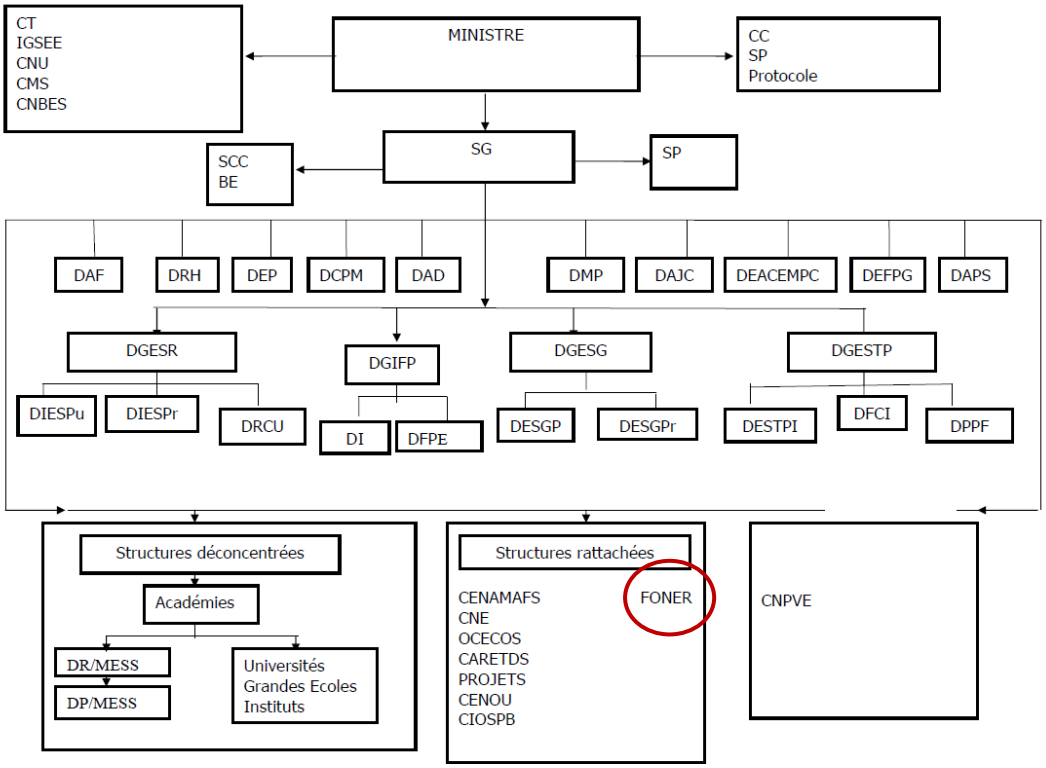
- Supporting the creation of infrastructure and research
- Contributing to the staffing of facilities or services in equipment
- Participation in financing activities of continuing education and personal development of teaching and research; and
- Support for any activity within the context of supporting the national education and research efforts.

However, given the need to support students, most of the budget is used for study grants. Since 1994, approximately 60 000 loans have been allocated to students. The rate of net reimbursement is relatively low (10-15%). No funding has thus far been allocated to the creation of either infrastructure or research.

2.2.2. Management and governance

FONER falls under the technical supervision of the Ministry of Secondary and Higher Education (MESS) and under the administration of the General Secretary.

Figure 5: Location of FONER within the Ministry of Secondary and Higher Education



Source: FONER

BE	Bureau d'études
CARETDS	Commission d'accréditation, de reconnaissance et d'équivalence des titres et des diplômes du secondaire et du supérieur
CC	chef de cabinet
CENAMAFS	Centre national des manuels et fournitures scolaires
CENOU	Centre national des œuvres universitaires
CIOSPB	Centre national de l'information, de l'orientation scolaire et professionnelle, et des bourses
CMLS	Comité ministériel pour la santé
CNBES	Commission nationale des Bourses d'études et des Stages
CNE	Conseil national de l'Education
CNPVE	Conseil national pour la Prévention de la Violence à l'école
CNU	Commission nationale pour l'UNESCO
CT	Conseiller technique
DAD	Direction des Archives et de la Documentation
DAF	Direction de l'Administration et des Finances
DAJC	Direction des Affaires juridiques et du Contentieux
DAPS	Direction des Activités physiques et sportives
DCPM	Direction de la Communication et de la Presse ministérielle

DEACEMPC	Direction de l'Education artistique, culturelle, environnementale et en matière de Population et deCitoyenneté
DEFPG	Direction de l'Education des filles et de la Promotion du genre
DEP	Direction des Etudes et de la Planification
DESGP	Direction de l'Enseignement secondaire général public
DESGPr	Direction de l'Enseignement secondaire général privé
DESTPI	Direction de l'Enseignement secondaire technique et professionnel initial
DFCI	Direction de la Formation continue et de l'Insertion
DFPE de	Direction de la Formation pédagogique et l'Evaluation
DGESG	Direction générale de l'Enseignement secondaire général
DGESR	Direction générale de l'Enseignement supérieur et de la Recherche
DGESTP	Direction générale de l'Enseignement secondaire technique et professionnel
DGIFP	Direction générale des Inspections et de la Formation pédagogique
DI	Direction des Inspections
DIESPr	Direction des Institutions d'enseignement supérieur privé
DIESPu	Direction des Institutions d'enseignement supérieur public
DMP	Direction des Marchés publics

DP/MESS	Direction provinciale du ministère des Enseignements secondaire et supérieur
DPPF	Direction de la Prospective et des Programmes de formation
DRH	Direction des Ressources humaines
DRCU	Direction de la Recherche et de la Coopération universitaire
DR/MESS	Direction régionale du ministère des Enseignements secondaire et supérieur

FONER	**Fonds national pour l'éducation et la recherche**
IGSEE	Inspection générale des services et des établissements d'enseignement
OCECOS	Office central des examens et concours du secondaire
SCC	Service central du courrier
SG	Secrétariat général
SP	Secrétariat particulier

2.2.3. Objectives, functions and fields

In theory, the Fund was created to provide financial support for research projects, or any other activity. Specific functions it plays at the level of training are:

- The contractual remuneration of personnel required
- The training of scientists and technicians
- The acquisition and dissemination of scientific and technological information
- The purchase of equipment for research facilities; and
- The loans to researchers and / or teachers and student researchers etc.

At the level of investment, it supports:

- The completion of training facilities
- The provision of services in institutions or facilities
- The financing of activities of continuing education and personal development of education; and
- The granting of loans to students for the purpose of studies and training.

The following groups qualify for funding from FONER:

- New graduates
- Students
- Teachers and researchers
- The local authorities
- Partners in education; and
- Primary and secondary schools; preschools; technical and professional training institutions.

2.2.4. Financing (sources and expenditure)

The Fund's resources include:

- Grants from state and local authorities
- Contributions from financial institutions and national and international organisations
- Contributions from companies and economic operators

- Contributions from all natural or legal persons
- The return on investments; and
- Gifts, endowments and donations.

FONER's budget currently originates from two main sources: Burkinabé National Lottery (LONABE) and a state grant.

2.2.5. Constraints

Faced with challenges concerning education, training and the promotion of research, FONER experiences many obstacles hampering its effective functioning. Firstly, one ministry is responsible for both secondary and higher education, thereby reducing the involvement of the ministry in higher education alone. Secondly, given the challenges that Burkina Faso faces in providing basic education for all, improving higher education becomes of lesser importance. Thirdly, FONER has to report to five different ministries. This decentralisation of authority negatively affects the effective coordination of research efforts in the education sector. There is also a need to clarify the status and the mandate of FONER in order for it to enjoy greater autonomy and for it to be able to attract more funding from a larger spectrum of donors and funding sources.

2.3. The Fund for the Support of Health Research (FARES)

2.3.1. Background, history and legal status

The Fund for the Support of Health Research (FARES) was created under the supervision of the Ministry of Health in 2008 under Decree 2008-299/MS/SG/DEP. It aims to improve the government's response to problems of health. Results of research supported by this Fund are intended to ensure better coordination at national, regional and local policy level.

The Fund is located within the Research Health Directorate of the Ministry of Health and managed by its Director.

2.3.2. Objectives, functions and fields

FARES aims to mobilise additional resources by finding solutions to challenges related to health.

More specifically, it aims to:

- Provide funding for research projects focused on health national priorities
- Contribute to capacity building in the research for health
- Provide institutional support to the coordination structure
- Conduct research from the Ministry of Health; and
- Promote the dissemination and use of results.

Research projects submitted must be within one of the following thematic areas:

- Communicable diseases
- Non-communicable diseases
- Reproductive health
- Environment and health, including public health, the risk factors and diseases related to the environment or profession
- Research in various aspects of pharmacy, laboratory, biological products, medicine and traditional pharmacopoeia
- The management of the care system and strengthening health systems; and
- Management of research and health systems.

2.3.3. Call for proposals, selection and peer review

The main stages of the selection process are the following:

- Consideration of the admissibility of projects by the Secretariat
- Review of project eligibility by the Scientific Council (SC)
- Evaluation of projects by the SC of FARES
- Consideration and adoption of the report of SC by the Management Committee (CG)
- Notification of the result of the selection of projects for all candidates by the President of the CG
- Completion of the projects approved; and
- Transmission of the list of projects approved and finalised by the President of the CG to the Director of Administration and Finance (DAF) of the Ministry of Health.

The eligibility criteria of proposals are the following:

- Complete applications must be submitted on time,
- The project team must include at least one partner belonging to a structure of the Ministry of Health,
- The submission must be accompanied by a letter signed by the head of the structure and the primary investigator marking its agreement to carry out research,
- Records must meet the requirements of the call for proposals.
  Applications that do not meet the eligibility criteria will not be subject to review of the scientific council.

The maximum amount of funding per project is specified in each call for research proposals and depends on the overall budget available. The principal investigator makes a commitment on behalf of the entire research team and the supervisory structure of the team must inform FARES of any problems or changes that could affect the content, partnership and schedule of the project between the submission of the application and publication of the list of selected projects. The project budget should be realistic: it must be neither overestimated nor underestimated. Funding does not provide for infrastructure or heavy equipment. Any dissemination (communication, thesis or articles) of

results of research funded by FARES must state: "This work has benefited from financial support from the Support Fund Research for Health in the Ministry of Health of Burkina Faso."

The call for proposals in February 2012 elicited 57 applications, of which 47 were considered eligible. Many were MSc or PhD theses. Ten were eventually approved for funding.

From 2012, an agreement was signed between FARES and the home institute of each applicant. At the time of our visit in July 2013, a new call was about to be launched.

FARES's budget for 2013 is 60 million CFAF (USD 123 360). It is expected to increase to 100 million CFAF (USD 205 600). Research grants make up 75% of the budget.

While health research institutes in Burkina Faso are used to preparing applications and responding to calls, this is not the case for other institutes. It has therefore been decided that training courses should be organised to improve the quality of applications.

In all, the creation of FARES should be acknowledged; however, its small budget and the amount allocated per project are too modest to make a real difference in piloting health research in Burkina Faso. According to a recent study carried out, it is estimated that 87% of health projects in Burkina Faso are funded from foreign sources. Given the scarcity of national funding resources, there is also a risk that funding for follow-up, evaluation and impact studies may be largely underestimated or not covered at all once available funding is disbursed to research projects.

3. Conclusion

STI in Burkina Faso is relatively young and faces many threats. The funding of scientific research in the country is largely dependent on external funding. This dependence has a crippling effect on scientific research and could worsen in the context of the current global financial crisis. The scarcity of resources therefore inadvertently causes a lack of research in certain fields. It is therefore an imperative that the state increases its share of public research funding.

Research institutions in Burkina Faso maintain partnership relations with research facilities in the sub-region. By creating a department in charge of scientific research and innovation (MSRI), Burkina Faso has attempted to position scientific research and innovation as key drivers of socio-economic development. The sector analysis in this report shows that the Burkinabé STI sector has a wealth of experience, but the areas of R&D and STI are still characterised by a number of weaknesses. These include (PNRST, 2013):

- The lack of public funding for the implementation of research programmes
- Low private sector participation in the financing of research activities
- Inadequate infrastructure and weak equipment/technical platforms
- Weak coordination and leadership of scientific research activity in the country
- Inadequate dissemination of research results
- Inadequate and outdated research infrastructure (such as laboratories) and installations

- A lack of appropriately skilled human resources (due to recruitment difficulties in research structures and brain drain)
- The absence of a genuine training policy and integration of research staff
- Not taking into account the research facilities and staff of other departments in the formal research system
- Lack of information and communication on the results of research, statistics and performance indicators on the sector; and
- Weak legislation on research ethics.

In light of these weaknesses, many challenges remain. The creation of FONRID and FARES and the adaption of the Strategic Scientific Policy (2013 -2025) are steps in the right direction. Both national funding programmes are public institutions closely aligned with their respective ministries. Experiences indicate that public budgetary procedures are not suitable for funding research projects. This and many other constraints reported above call for a non-public, more flexible status, such as a foundation. It is also imperative that research efforts be coordinated, evaluated and communicated well. Creating an effective STI research system, however, would not be feasible without a greater financial commitment from the government.

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