

## What characterizes the re-institutionalisation of research in Sahel countries?

### Challenges and prospects for the future

After several years of de-institutionalization, African research has now entered a new consolidation phase in which international funding plays a central role. This paper has been produced through the research project “Sahel: Funding Research” (SAFIRE), which is based on a bibliometric analysis and assessment of research systems in six Sahel countries (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal), with a focus on the field of social sciences, agriculture and health. It explores the “re-institutionalization” process for science in the Sahel, as well as recent research dynamics in the region.

### De-institutionalization of science in Africa and legacy of the “dark years”

At the end of the colonial period, the efforts towards research of the newly independent African countries gave impetus to a positive dynamic, resulting in the creation of the first national universities. The economic crisis of the 1980s and the adoption of structural adjustment policies brought this dynamic to a halt, thus paralyzing research across the continent until 2005-2010 or so. This has been referred to as the de-institutionalization of science in Africa.

The crisis also revealed structural difficulties, first and foremost the lack of higher education and research policies in several countries. For example, in Burkina Faso, Mali and Niger, the first national research policies were adopted in 2011, 2012 and 2013, respectively, and generally focused on sectors with “high potential” for economic development (agriculture, health), a legacy of colonial sciences.

The underfunding of the sector is another major barrier, together with the lack of government structures dedicated to the coordination of research activities.

For more than a decade, there was a sharp reduction in the resources made available for training research staff. This was the case in Niger, which had to abandon its policy for mobility grants. Universities allocated their scarce financial and human resources to teaching activities, to the detriment of research. There was no longer any scientific production in universities. Measured in terms of publications, it remained low throughout the 1990s and only started to resume slowly in the mid-2000s.

#### Authors

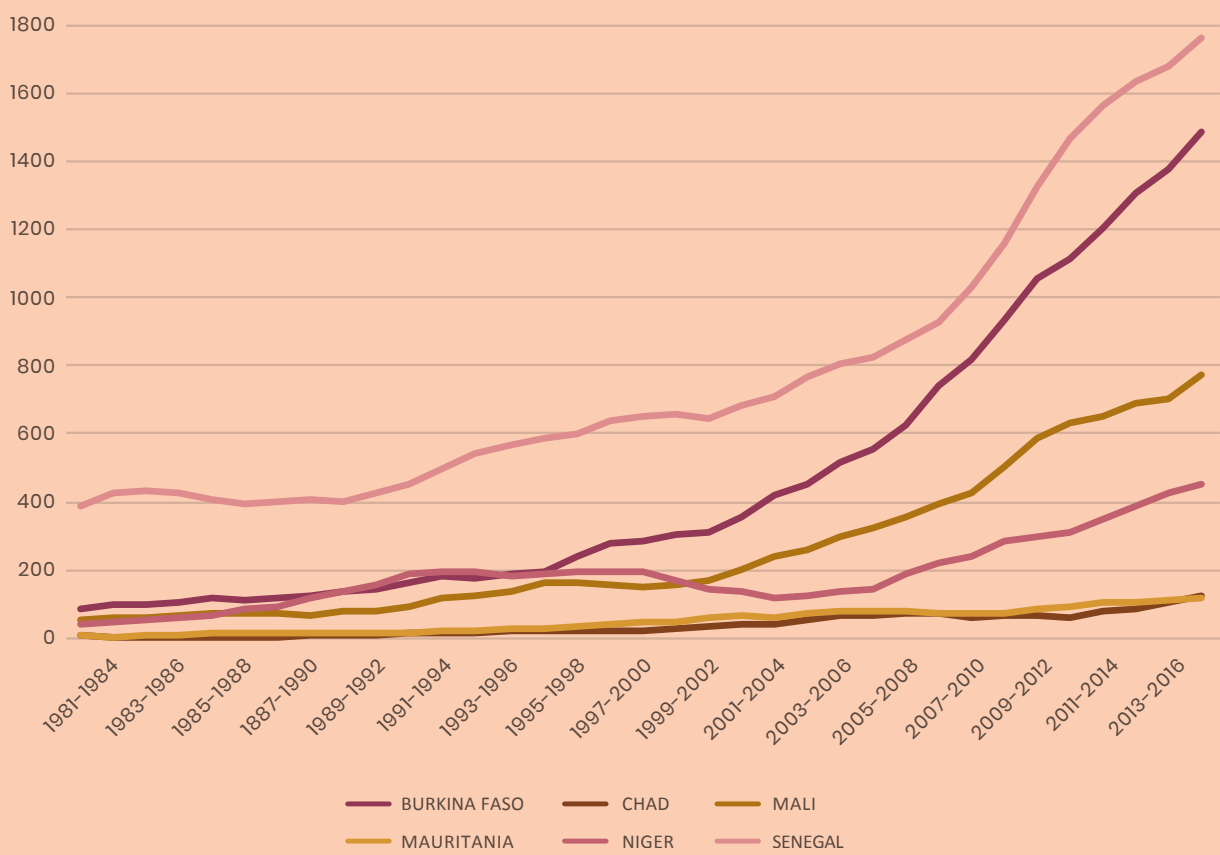
**Rigas ARVANITIS**, sociologist, director of research, Centre Population et Développement (Ceped) and Global Research Institute of Paris (GRIP), Université Paris Cité and French National Research Institute for Sustainable Development (IRD)  
**Linda ZANFINI**, economist, research officer, Agence Française de Développement

From 2000 onwards, research activities started to gain in importance in very diverse forms. Across the continent, scientific production rose from 15,285 publications in 2005 to 54,069 in 2016 (Arvanitis and Mouton, 2019; Sooryamoorthy, 2023), with a doubling of Africa’s share in the global production of publications (from 1.5% in 2005 to 3.2% in 2016).<sup>1)</sup> This trend has gathered pace: a simple search of the

Web of Science (WoS) database shows that Africa today accounts for 3.8% of global production. Sahel countries, led by Senegal, also contribute to this growth.

1 Listed in the Web of Science (WoS) – SCI Expanded database. To maintain a stable reference base over time, containing a core set of recognized journals (but which are also difficult to access), these estimates are restricted to exact and natural science publications, and only through articles in journals. The well-known biases of the WoS (predominance of biomedicine and English) are thus the same today as 35 years ago.

**Figure 1– Development of research production in six Sahel countries, 1981–2016**



Source: SAFIRE project, bibliometric report, data from Web of Science – SCI Expanded.

In these countries, this revival is occurring against a backdrop of growth disrupted by political events. “Dominant” trends can be observed in the region: the critical role of universities, with the creation of public and private universities, in particular through foreign private funding; the search for more efficiency for the “small” scientific countries and the need to develop knowledge infrastructure (physical infrastructure, economic investments, digitization, movement of teacher-researchers, etc.); the importance of regional bodies such as the African and Malagasy Council for Higher Education (CAMES, see below), etc.

A further sign of this revival lies in the definition of national research agendas. While these countries can be considered as non-hegemonic, as they do not have control

over the international research agenda, the ongoing globalization of the research system leads to an interaction between scientific communities and funding bodies. This results in forms of enrolment and mobilization that allow for their needs to be taken into account in the thematic areas of research.

# Re-institutionalization of science in the Sahel

## Strengthening of research activities in universities

The first sign of the re-institutionalization of research is its growth in universities and no longer only in research institutes inherited from the colonial period. Research is no longer a mere policy instrument for development and intervention, but also a full-fledged social institution. It contributes to the renewal of the social pact between science and the political forces that take part in a scientific production acceptable to society (Waast, 2006).

This growth also changes the way in which the direction of research is decided. The latter must no longer only address the emergency situations and needs of populations; it must now also take into account the international recognition from peers. This factor directly affects the careers of researchers, as it is required by institutions, in particular by universities.

## An increasing number of teacher-researchers trained abroad

The first "post-independence" generation of researchers retired in the early 1980s. The next, the first generation of "native" researchers, is still present in universities and has yet to hand over the reins. A "third generation" is currently trying to emerge. More of these researchers have trained abroad, including through government funding (for example, in Chad, through the National Commission for the Training of Trainers). Research, in particular with publications, plays an essential role in their recognition. Debate has begun over the relevance of the research, similar to what has occurred in countries in North Africa and the Middle East (Hanafi and Arvanitis, 2016).

## Governments increasingly aware of the importance of research

With the adoption of research policies, Sahel countries have recognized the status of researchers, or amended legislative frameworks in a move towards this recognition. Several of them (including Burkina Faso, Mali and Niger) have set up agencies and funds to finance research. They have roles that did not previously exist: coordination, funding, support for research, development of policies to support research.<sup>[2]</sup> For example, in Mali, the National Center for Scientific and Technological Research (CNRST) combines the functions of coordination, promotion, dissemination and popularization, but also includes functions such as the search for funding. In Senegal, the mission of the Fund for Scientific Research and Technology (FIRST) does not only cover funding, but also the coordination and guidance of research. Mouton, Gaillard and Van Lill (2015) have shown the multiplicity of roles imposed on research coordination and funding bodies. In the Sahel, these are fledgling organizations, generally with highly insufficient or negligible financial allocations. In other countries, ministries continue to play a central role. However, all these institutions remain highly vulnerable, in particular to political changes.

[2] Several English-speaking countries have set up Science Granting Councils, based on the model of British and American Councils, with diverse functions and a mission to support national research systems (Mouton *et al.*, 2015).

## New impetus for regional research

Institutions such as CAMES contribute greatly to the regional impetus to support research. As there are no other reliable regulatory bodies, CAMES plays an important role in the recognition of diplomas and postgraduate training, but also in the accreditation, and therefore the legitimization, of research careers. This is especially the case for small scientific countries and when there are no other evaluation bodies (depending on the case, recognition by CAMES can be concomitant with or replace the evaluation at national level).

An increasing number of French-speaking countries<sup>[3]</sup> are also joining the coordination initiative of Science Granting Councils (SGCI), which support and build networks for national research agencies in English-speaking countries.

International cooperation contributes to this regional impetus: the relations with the European Union are essential for French-speaking Africa. This is also the case for initiatives to create centers of excellence, for which the regional dimension and potential for networking are key components.

## Very close collaboration with foreign researchers

In the Sahel, there has been a marked increase in international collaborations, which have now reached a level of above 90%, except for in Senegal.<sup>[4]</sup> They are generally transcontinental (systematically in the case of Chad). The very strong presence of the Institut Pasteur and the French National Research Institute for Sustainable Development (IRD), as well as French cooperation, largely accounts for these extremely high figures for collaborations. However, these figures can also mask a subordinate position of Sahelian researchers and teams vis-à-vis their counterparts in the North. Consequently, the fact that Senegal has a lower rate of collaborations may point to a relative disengagement from excessively "stifling" collaborations, and a greater diversity of places of research (which also focuses more on fundamental disciplines).

This high level of collaborations with partners from the "North" is also the consequence of the heavy dependence of African research, in particular in the Sahel, on financing from international donors. The profile of these donors has become more diversified in recent years, with a more prominent role for emerging countries and foundations, and increasingly blurred boundaries between the public and private sectors. This new situation profoundly modifies the research landscape, in particular in small scientific countries.

[3] For example, Côte d'Ivoire and Senegal.

[4] By way of comparison, these collaborations account for approximately one third of the articles indexed at global level (27% for China, 43% for the USA and more than 95% for small research-producing countries such as Burkina Faso, Liberia, Mali and Niger).

## Four key challenges for the future

The research conducted on African research, in particular by the SAFIRE project, makes it possible to identify some of the main challenges that Sahel countries will face in the coming years, notably:

- **Consolidate the funding of research**, by establishing a framework for the role of international funding, in particular private funding, and assisting academic researchers and teams with their relations with donors, including by helping them argue for research topics specific to both national researchers and institutions (their “research agenda”)
- **Give time to research**, by facilitating the possibility for academics to free themselves, albeit temporarily, from teaching duties, so that they can conduct research
- **Promote the publications** of researchers and teacher-researchers from African universities in both foreign and national journals, taking account of issues related to languages (English and local languages) and open access
- **Bridge the gap between French-speaking and English-speaking Africa**, through initiatives promoting open data, multilingual publications, and intra-African mobility

---

### Reference list

**Arvanitis, R., J. Mouton and A. Néron** (2022), Funding Research in Africa: Landscapes of Re-Institutionalization, *Science, Technology & Society*, 27(3), 1-17. DOI: 10.1177/09717218221078235

**Chataway, J., C. Dobson, C. Daniels, R. Byrne, R. Hanlin and A. Tigabu** (2019), Science Granting Councils in Africa: Trends and Tensions, *Science and Public Policy*, 46(4), 620-631. DOI: 10.1093/scipol/scz007

**Mouton, J., J. Gaillard and M. Lill** (2015), Functions of Science Granting Councils in Sub-Saharan Africa, in Cloete, N., P. Maassen and T. Bailey (Eds.), *Knowledge Production and Contradictory Functions in African Higher Education* (pp. 148-170), African Minds, Cape Town.

**Sooryamoorthy, R.** (2023), *Independent Africa, Dependent Science. Scientific Research in Africa*, Palgrave Macmillan, Singapore.

**Waast, R.** (2006), Savoir et société : un nouveau pacte à sceller, in Gérard, E. (Ed.), *Savoirs, insertion et globalization, Vu du Maghreb*, Publisud, Paris, pp. 373-403.

---

**Agence française de développement (AFD)**  
5, rue Roland Barthes | 75012 Paris | France  
**Publishing director** Rémy Rioux  
**Editor-in-chief** Thomas Mélonio  
**Graphic design** MeMo, Julie Gilles, D. Cazeils  
**Layout** eDeo-design.com  
**Translation** Cadenza Academic

**Legal deposit** 3<sup>rd</sup> quarter 2024 | **ISSN** 2428-8926  
**Credits and authorizations**  
License Creative Commons CC-BY-NC-ND  
<https://creativecommons.org/licenses/by-nc-nd/4.0/>  
Printed by the AFD reprographics department

*The analyses and conclusions of this document are entirely those of their authors. They do not necessarily reflect the official views of the AFD or its partner institutions.*

To consult other publications: <https://www.afd.fr/collection/question-de-developpement>

