

Research Funding Organizations and the UN Sustainable Development Goals

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Abstract

This science-policy brief highlights the vital role of Research Funding Organizations (RFOs) in advancing the U.N. Sustainable Development Goals (SDGs). It discusses how RFOs have strategically funded research that contributes to the SDGs, with examples like the collaboration initiated by the National Research Foundation of South Africa and similar efforts by the São Paulo Research Foundation in Brazil and the Natural Science Foundation of China. The brief emphasizes the importance of enhancing international research collaborations to foster SDG-related research, backed by data from large bibliometric databases which demonstrate significant contributions by RFOs to the SDGs. It advocates for stronger partnerships between the UN and RFOs to increase funding and research intensity towards achieving the SDGs, suggesting that effective communication and mutual learning are key to this endeavor.

Introduction

The achievement of the bold targets defined in each of the 17 Sustainable Development Goals requires more effective access by people in all countries to existing knowledge and, in many cases, the creation of new knowledge and the development of new technologies, as a product of Research and Development (R&D) activities (Messerli and Murniningtyas, 2019). Mobilizing research funding towards themes related to the SDGs can help accelerate advances.

It must be said that Research Funding Organizations (RFOs) have been supporting research that targets themes related to the Sustainable Development Goals for some time. But the formulation of the 17 SDGs since 2015 created a framework around which the planning and evaluation of advances can be much better structured. It suffices to mention that, nowadays, there are university rankings based on their contributions to each SDG (Times, 2023), and some research funding organizations include in their website information about the linkage among the grants they award and each of the SDGs (FAPESP, 2024).

Stimulating research in SDG-related themes

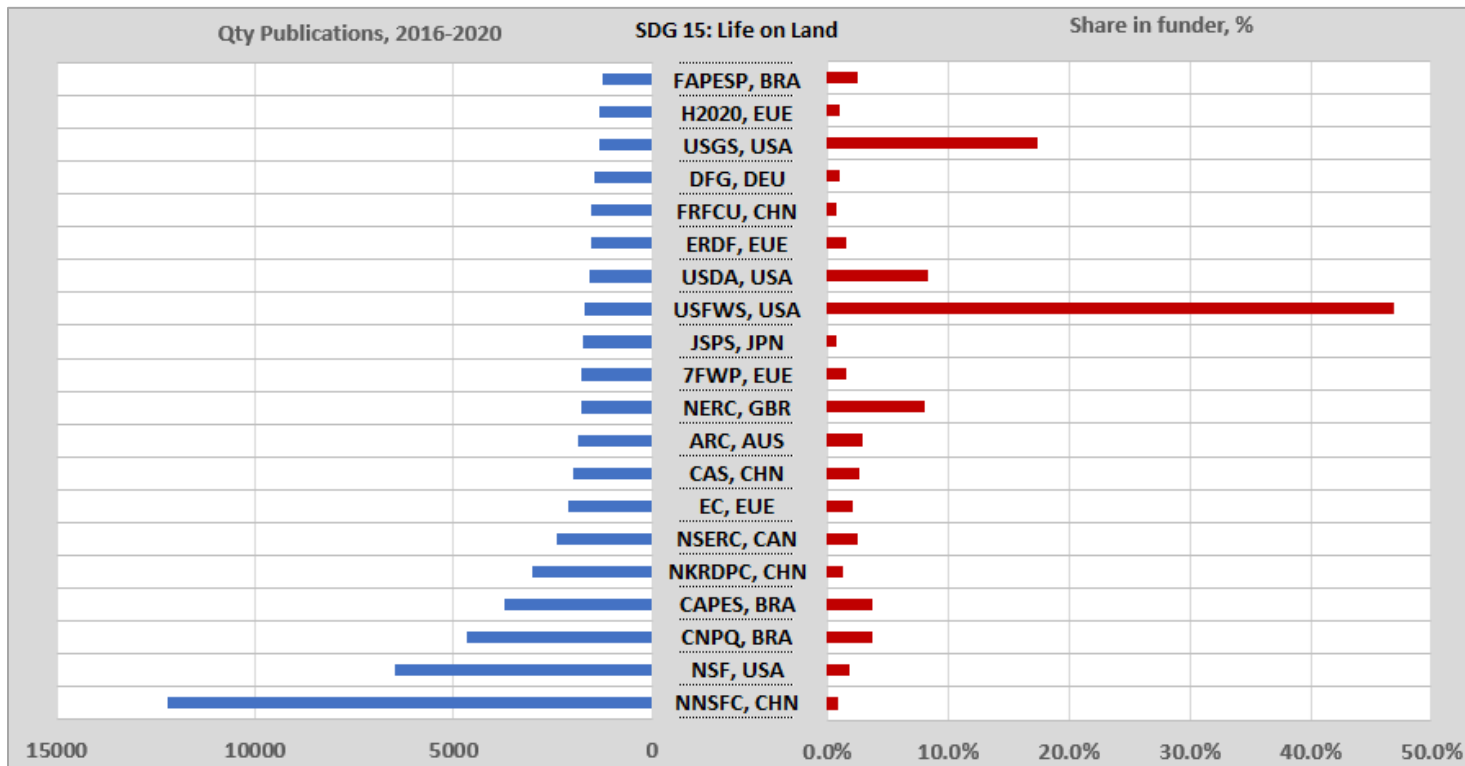
One of the most important challenges in this arena is to stimulate the interest of research funding organizations in themes related to the SDGs and to stimulate their initiatives to foster international research collaboration to that end. RFOs have already started to do this on their own initiative. For example, the National Research Foundation of South Africa (NRF SA) announced, in 2022, a call for proposals in collaboration with RFOs in 11 countries, aiming at "... aiming to accelerate the achievement of the SDGs, through the implementation of results from ongoing or

recently finalized research and innovation projects to advance knowledge-based achievement of the SDGs, from local to regional scale. Projects will be funded through international consortia where researchers together with implementation partners and stakeholders collectively and collaboratively aim to improve research outcomes for impact. The research and outcomes of the projects funded should lead to impact on society and improve the livelihoods of people on the ground.ⁱ Similarly, The São Paulo Research Foundation (FAPESP), in Brazil, and the Natural Science Foundation of China (NSFC) announced a call and selected proposals for joint research on "The dynamics of surface earth system and their relationship with sustainable development".ⁱⁱ

It is difficult to estimate how much of the funding awarded by each funder supports research related to each SDG. But, thanks to advances in tagging items in large bibliometric databases, it is possible to identify which, and how many, publications that contain funding acknowledgements relate to each SDG (Elsevier, 2024).

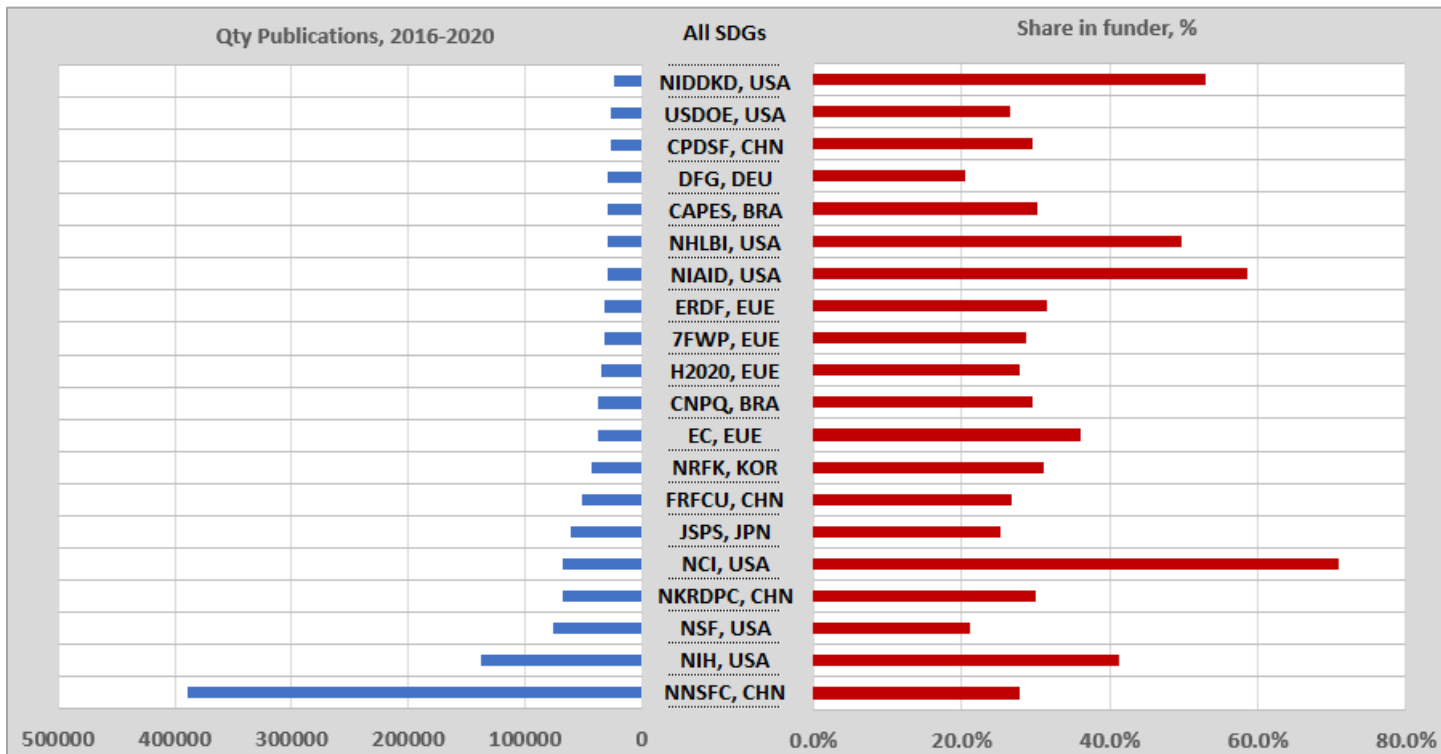
In Figure 1 an example is shown, considering publications that target SDG 15: Life on Land. In particular, Figure 1 shows the number of publications and the share of the total publications for the 20 funders with more contributions, in the form of scientific publications, to SDG 15 in the period 2016-2020. In this case it is apparent that for field-specific funders, like NERC in the UK, or USFWS and USGS in the U.S., the share of publications targeting SDG 15 stand above the shares observed for "broadband" (not field specific) funders. It is also interesting that the sheer volume of publications related to SDG 15 is larger for funders in China, the U.S. and Brazil.

Figure 1. The 20 funders with more acknowledgements of support in publications related to SDG 15: Life on Land, for the period 2016 to 2020.



Source: Elsevier SCOPUS

Figure 2. Quantity of publications that acknowledge support from funders and that are on topics related to one of the SDGs, for the period 2016 to 2020, for the 20 funders with the largest number of acknowledgements.



Source: Elsevier SCOPUS

Similar counts can be done for specific SDGs and one can assess the number of publications targeting any of the SDGs. This is shown in figure 2, where the left panel shows the number of publications, and the right panel shows the share of all publications acknowledging each funder and that are related to at least one of the SDGs. It is interesting that among the 20 funders with more publications related to SDGs, two countries from the Global South appear: China (with 4 funders) and Brazil (with 2 funders). An important information that comes from a measurement as shown in figure 2 is that, typically, the 20 main funders shown have between 20% and 70% of all the publications that had acknowledged their support related to at least one SDG, with funders specialized in the Health Sciences showing, usually, the higher shares. These percentages are by no means small and across the range of more than 200 funders for which we could obtain data on publications and expenditure, the percentage of publications related to at least one SDG stays in the range of 20-40%, growing for funders in Low-and-Middle Income Countries, where research naturally gets oriented towards social and economic immediate challenges.

Expenditures and scientific and technological knowledge

Considering that a rough estimate puts the yearly worldwide expenditure of research funding organizations above \$PPP 230 billion, for the sum of 165 funders we considered via desk research, in a preliminary way.

The possibility of quantifying the scientific and technology knowledge related to each and all SDGs opens some interesting opportunities that can be useful for policy evaluation and design, in the arena of Science, Technology, and Innovation for Sustainable Development Goals. Systematic studies using this type of data, or associating this with other data sources could assist, for example, in the understanding of:

- a) The magnitude of the research effort committed to each SDG.
- b) The size and intensity of research collaboration among countries resulting in new knowledge about SDGs and the design of more efficient collaborations – how much room there is for growth?
- c) The role of the business sector in advancing technology related to SDGs – are companies part of the research effort? How much are they

involved and how intense is the exchange between academic and corporate sectors?

- d) The role of academic-business collaborations in advancing knowledge relevant to SDGs.

Policy implications

So, the point of policy we want to bring out here is that by having closer collaboration between the U.N. and research funding organizations worldwide it might be possible to achieve increases in funding, and consequently in the intensity of research targeting many SDGs. Clearly, this is not a silver-bullet solution, but an initiative in this direction could contribute to more SDG knowledge being generated in many regions. To move this idea forward, it is necessary to create effective communication channels with research funding organizations, and this could be done effectively working with entities that congregate many funders, like, e.g., the Global Research Council (GRC) (more than 80 national funders participate in their annual meetings), or other alliances that exist in the Health Sciences Research (GACD, GLOPID, and others) arena.

A key point here is that an initiative to get funders interested in targeting the SDGs is not synonymic to getting the rich to spend money for the poor, though, many times, this might be possible via Official Development Assistance funds. However, another path that has been trailed by many funders is that of collaboration for co-funding calls for proposals in mutually agreed topics. In this case, each funders funds the researchers from their region or jurisdiction and the funding does not have to be equal from each funder. Funding must recognize the fact that the costs of doing research are different in different countries, as the value of fellowships and salaries are different. The benefits of this type of collaboration come from the exchange of expertise among the teams, the sharing of facilities, and the focusing of efforts towards a common target. The collaborations mentioned as examples in the introduction to this Policy Brief are all of the type proposed here.

Conclusion

In summary, the basic proposition here is that the U.N. should step-up its efforts to develop connections with research funders worldwide, possibly via entities that congregate many funders, to learn from their experience and to inform them about challenges and opportunities that the U.N. identifies related to the SDGs. This can only be successful if done as a two-way communication effort where both sides – funders and

the U.N. – contribute information and learn from each other.

References

- Messerli, P., & Murniningtyas, E. (2019). Global Sustainable Development Report 2019.
- Times (2023). Higher Education Impact Rankings, 2023; <https://www.timeshighereducation.com/impactrankings> (20240411)
- FAPESP (2024). FAPESP and the Sustainable Development Goals”, <https://ods.fapesp.br/en> (20240411)
- Elsevier (2024). [SDG Research Mapping Initiative - SEO Metadata \(elsevier.com\)](#) @ <https://www.elsevier.com/en-gb/about/sustainability/sdg-research-mapping-initiative>

ⁱ <https://www.nrf.ac.za/sustainable-development-goals-sdgs-collaborative-funding-call/>

ⁱⁱ <https://fapesp.br/15436/fapespnsfc-national-natural-science-foundation-of-china>