The Sustainable Development Goals in the IRD's scientific publications

Laurent Guillou,
IRD, MEPR, Marseille, France

Background

The most recent Global Sustainable Development Report (2023) finds that progress towards the majority of Sustainable Development Goals (SDGs) is well behind target, that progress is either slow or non-existent, and that in some cases we appear to be moving backwards. The report also makes clear that further research is needed to better comprehend national and international contributions to the Sustainable Development Goals. In spite of the goals written into the text of research programmes, and the commitments of research institutions under the Agenda 2030 scheme, researchers rarely mention the SDGs in their published output. Some publishers and scientific databases now offer tools which are invaluable when it comes to identifying publications and analyses dealing with the SDGs.

Contact
laurent.guillou@ird.fr

Further reading
https://www.elsevier.com/connect/help-expand-a-public-dataset-of-research-that-support-the-un-sdgs
https://clarivate.com/webofsciencegroup/tag/sustainable-development-goals/

Bibliometric identification and quantification of the SDGs

Identifying and quantifying references to the SDGs in the bibliometric databases of scientific publications is a serious challenge. Numerous methods have been proposed, including:

• the Elsevier method: selecting SDG keywords in Web of Science, a scientific and technical information platform with access to bibliographical databases;

• the Auckland: a variant of the Elsevier method which uses more key words identified by means of textual analysis of publication titles and abstracts (search made via Web of Science [WOS]; https://doi.org/10.21203/rs.3.rs-2544385/v3);

• the WOS method: uses citation networks (links to articles citing articles in their bibliography) to establish a list of themes for each SDG (an internal indicator specific to the WOS platform);

• the Dimensions method: classification by an AI tool trained on search requests employing a vast set of keywords (this indicator is specific to Dimensions, www.dimensions.ai).

Equipped with WOS and DOI (digital object identifier) codes, it is easy to use these methods to examine a corpus of articles from a specific institution. While the limitations of such methods have been discussed in the literature - particularly their capacity to evaluate the contribution of scientific results to the SDGs, or their failure to take full account of publications in the human and social sciences sphere which are poorly represented in WOS - they are still useful when it comes to assessing the extent to which an institution's research priorities are aligned with Agenda 2030.

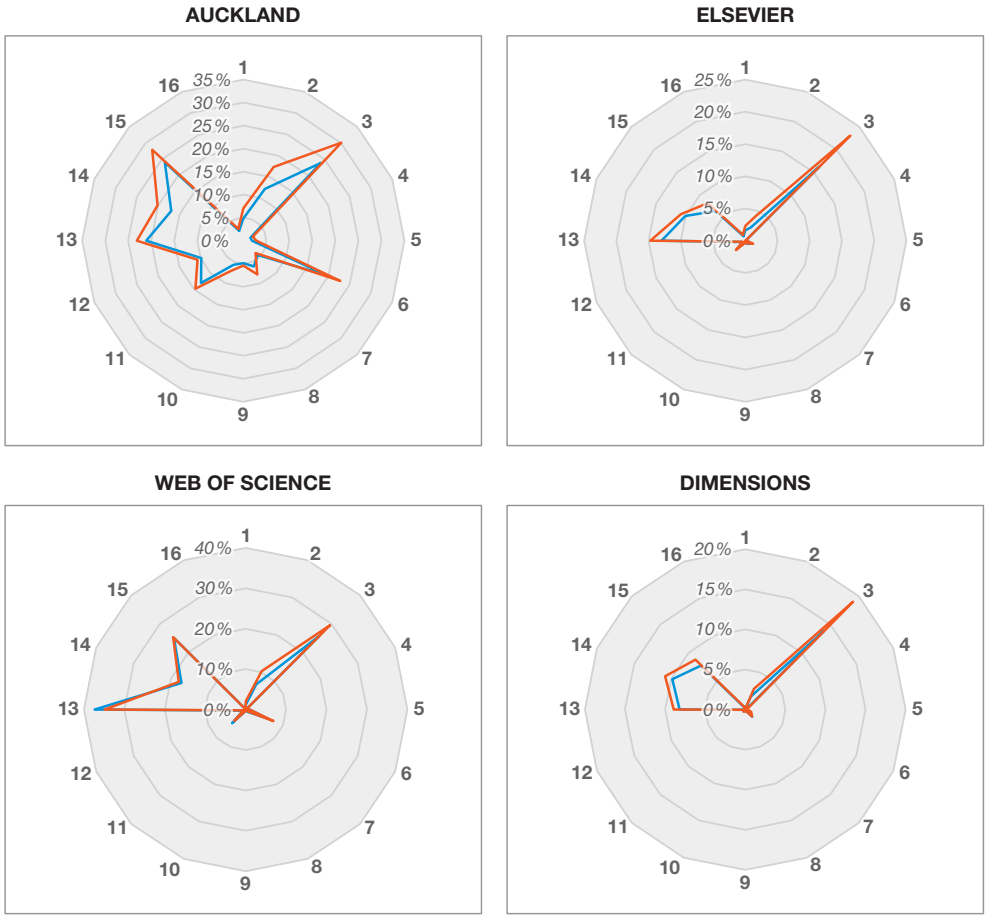
IRD's contribution to the SDGs

What results do we get if we apply this method to the IRD? Our first indicator, for the period 2017-2022, tells us that the corpus of publications emanating from UMRs under IRD supervision comprised 33,072 WOS articles; that number falls to 9,493 if we include only publications with at least one author based at IRD. This means that IRD researchers contribute, on average, to 29% of the publications of their UMRs pertaining to one or more SDGs. Within this corpus, the proportion of publications aligned with the SDGs is around 90% (for both perimeters - UMR and IRD). Nine out of ten publications by IRD members are thus aligned with the SDGs, a figure which compares favourably with the 66% global average. Our second general result is that, while some data may diverge depending on the method employed, different analyses are consistent on certain points:

• the 4 most well-represented SDGs in IRD output (UMR and IRD) are:

- SDG 3 (good health and well-being) corresponds to 25% of IRD output, on average,
- SDG 13 (climate action) corresponds to 20 % of IRD output, on average,
- SDG 15 (life on land) corresponds to to 18 % of IRD output, on average,
- SDG 14 (life below water) corresponds to 15 % of IRD output, on average;

• the 4 least cited SDGs are SDG 4 (quality education, mentioned in just 0.7% of IRD output), SDG 5 (gender equality, mentioned in 1.1% of IRD publications), SDG 9 (industry, innovation and infrastructure, 1.4% of IRD



Percentage of IRD publications associated with an SDG, based on 4 analytical methods (IRD perimeter in orange, UMR in blue). SDG 17 is not shown here, because the majority of articles involving search engine requests do not include it.

output) and SDG 16 (peace, justice and strong institutions, mentioned in 1.1% of IRD articles). This result may be attributable to the non-exhaustive representation of HSS publications in the WOS database.

If we compare these figures with the global mean values, the IRD is well above the international average when it comes to publications on SDGs 13, 14 and 15, but far below average on SDGs 4, 7 (renewable energies) and 9. Moreover,

IRD researchers (both UMR and IRD perimeters) tend to explicitly cite the SDGs in their publications: this tendency is especially evident for SDG 4 (despite the fact that IRD researchers publish relatively little on this subject) and SDG 5.

Mentions (or absence) of SDGs in articles

At the global level, only an extremely small proportion of academic articles explicitly mention the SDGs. This trend can also be observed at the IRD, where the SDG citation rate its very low: around 1% of UMR articles and 1% of specifically IRD articles Nevertheless, IRD researchers are more likely to link their publications to SDGs than UMR authors on the whole, and this is particularly true of SDGs 4, 5 and 12 (responsible consumption). SDG 7, on the other hand, is mentioned less frequently in IRD publications than the UMR average.

KEY POINTS

The four methods used in this study suggest that, in the years 2017-2022, the IRD's scientific output displayed a trend of specialisation in SDGs 3, 13, 15 and 24 (between 15 and 25% of IRD publication invoking each of these SDGs). However, the IRD publishes very little on SDGs 4, 5, 9 and 16. IRD publications invoking SDGs 13, 14 and 15 are more numerous than the global average. Proportionally speaking, IRD members tend to explicitly state the connections between their publications and the SDGs. While the results obtained using different methods are relatively congruent, they still raise questions as to the bibliometric definition of the SDGs, and whether it is preferable to use external methods or internal processes when constructing indicators. Different methods may diverge in terms of the number of publications they include, depending on the key words employed and/or the way in which the platforms train their algorithms. Implementing and SDG progress barometer at the IRD would allow for: 1) greater long term stability in SDG studies; 2) greater sensitivity to the specificities of the IRD at the institutional level; and 3) a strategic tool for monitoring activity.

SUSTAINABILITY SCIENCE

UNDERSTAND, CO-CONSTRUCT, TRANSFORM

Volume 3

Collective thinking coordinated
by Olivier Dangles, Marie-Lise Sabrié and Claire Fréour

IRD Éditions

French National Research Institute for Sustainable Development
Marseille, 2024

Editorial coordinator: Corinne Lavagne
Editorial preparation: Jasmine Portal-Cabanel
Cover, design and layout: Charlotte Devanz

Cover photo: Rock painting, Cueva de las Manos, Argentina.
© IRD/O. Dangles – F. Nowicki/*Une Autre Terre*

Photo p. 14: Preparing tubes for saliva samples, Gabon
© IRD/P. Becquart

Photo p. 40: Health centre in hot conditions, Senegal
© IRD/A. Makosi, Mopga project

Photo p. 70: Launching a drone on Changri-Nup, Everest, Nepal.
© IRD-CNRS/S. Vergoz, Preshine expedition

Photo p. 92: Participatory exercise on the theme of erosion, Indonesia
© IRD/Rights reserved

Photo p. 106: Fabrication of a terra cotta jar, craft village, Vietnam
© IRD/J.-M. Borée

Photo p. 128: Child's drawing, Madagascar
© IRD/S. M. Carrière

ISBN PDF: 978-2-7099-3041-3