



Growth and impact of research collaboration between The Netherlands and Brazil

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Key findings:

- *Average annual growth rate of joint Dutch-Brazilian publications is well above the overall growth rate of Dutch international publications;*
- *Dutch research collaboration with Brazil results in higher scientific impact for the Netherlands due to higher score than the Dutch international publications;*
- *In terms of volume and impact, Brazil is key partner among Latin American and BRICS+ countries.*

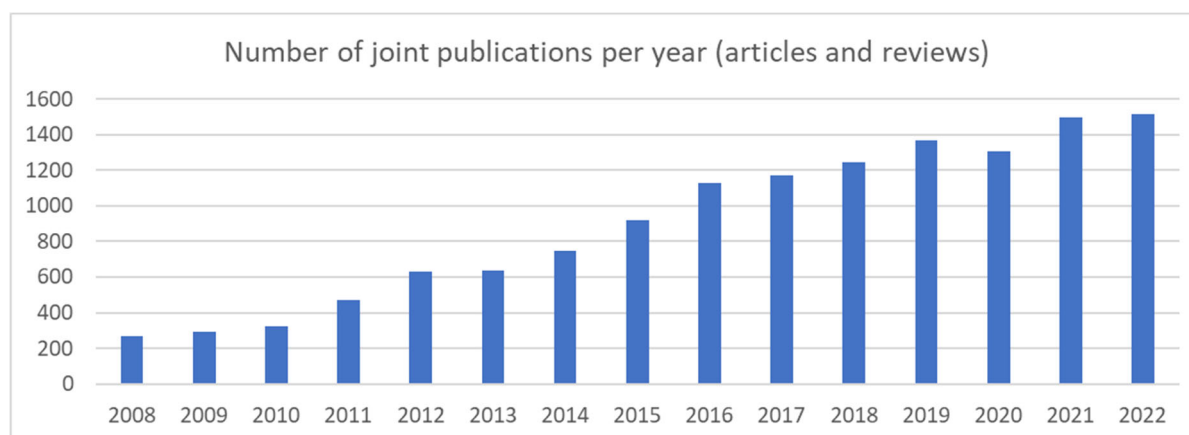
Besides strong economic ties, The Netherlands and Brazil have a strong academic collaboration, for many years now. Practically all Dutch universities have some form of research collaboration with Brazilian partners, of which many examples are shown in our [showcase booklets](#). And the Dutch Research Council (NWO) recently [celebrated](#) ten years of joint research funding with the São Paulo Science Foundation (FAPESP), totaling well over EUR 30 million in joint investments.

Although very important, this does not yet describe or quantify the full extent of the collaboration between researchers. So in 2024, we gathered, in collaboration with the Centre for Science and Technological Studies (CWTS) at Leiden University, data on joint scientific publications¹ of Brazilian and Dutch researchers for the period 2013-2022. Through a so-called bibliometric analysis, we were able to quantify co-authorship patterns, how the Dutch-Brazilian science collaboration developed over time and which impact this collaboration has. The impact is derived from citation metrics, which can be seen as a proxy for the quality of the joint research.

Double-digit growth over the last decade

Looking at the period 2013-2022, the number of joint scientific publications involving Brazil and the Netherlands grew on average 10% per year. The total joint output was 11,531 publications. These numbers include a brief drop in 2020, due to the COVID-19 pandemic.

The average growth rate is notably higher than the general trend that the Netherlands publishes increasingly more with international co-authors (6.5% growth per year). If we include data from earlier bibliometric analyses and look at 2008-2022, then the average growth rate is even higher, about 14% per year.

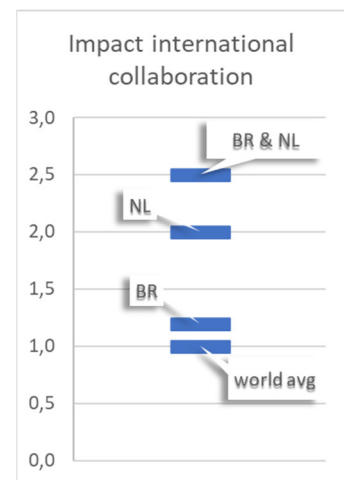


¹ Publications (articles and reviews) with at least 1 author affiliated to a Brazilian organization and at least 1 author to a Dutch organization, in bilateral or multilateral cooperation (with sometimes many other co-authors).

Win-win in scientific impact

Scientific impact, an indicator of research quality, is measured by the number of citations. The calculation of this impact takes into consideration how similar publications score in a particular knowledge domain. The joint publications of the Netherlands and Brazil have a fairly stable impact score of 2.5 times the world average.

This means that, besides growth in quantity, the publications also score higher in quality than the average of all international cooperation of both the Netherlands (2x world average) and Brazil (1.2x world average). In other words, both countries benefit from the cooperation in terms of impact.



Key science partner in Latin America and BRICS+

For the Netherlands, Brazil is by far the most important science partner in Latin America, in terms of number of joint publications. And of the BRICS+ countries, only China scores higher in number of publications, but these publications have a lower impact score than the joint publications with Brazil.

In the ranking of Brazil's top international science partners, the Netherlands ranks 11th in terms of number of joint publications and of the 10 countries that precede the Netherlands, only Brazil's collaboration with Australia achieves a higher impact score. In other words, for both countries this scientific collaboration is very important.

Main partners and knowledge fields

The bibliometric analysis also identifies other characteristics of the science collaboration with Brazil:

Main research partners in Brazil are the University of São Paulo, Federal University of Rio de Janeiro, Brazilian Center for Physics Research, University of Campinas and Federal University of Juiz de Fora.

The figure below ranks the most active Dutch organizations (in descending order from left to right) and for each organization the top 5 scientific fields of their joint publications with Brazil.



About half the publications that we analyzed contain acknowledgement of the funding source(s) used for the research. The top 5 acknowledged funding organizations are as follows (in descending order of number of acknowledgements): CNPq (Brazilian Ministry of Science, Technology and Innovation), European Union, Dutch Research Council NWO, São Paulo State Research Foundation FAPESP, and CAPES (Brazilian Ministry of Education).