

# Funding Equitable Research Internationalisation

## Recommendations for German funding and research organisations working with low- and middle-income countries (LMICs)

Humboldt Residency Programme 2024<sup>1</sup>

### Abstract

As a global leader in research and innovation, Germany is well placed to advance equitable research internationalisation. By leveraging its strong position in global research, Germany can not only address inequitable funding practices embedded in research partnerships with Low- and Middle-Income Countries but also bolster its position with partner nations in economically and strategically sensitive regions. German funding bodies and research organisations can do more to foster a global research landscape. In doing so they will improve Germany's global economic and diplomatic standing and contribute towards the United Nations' Sustainable Development Goals.

This policy paper argues that important reforms should be introduced in currently existing German research funding strategies, schemes, and practices. To ensure equity in research collaborations, **our recommendations call on funders and research organisations to foster equitable participation, facilitate equal knowledge exchange, unlock community benefits, enable South-South collaboration, adapt research, share results and rewards.**

The recommendations in this paper, the majority of which are cost neutral, offer a clear path to inclusive international research partnerships and equitable forms of global science diplomacy.

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<sup>1</sup> This paper has been written jointly by the **participants of the Humboldt Residency Programme 2024.**

The **Humboldt Residency Programme** annually brings together a trans-disciplinary group of researchers, journalists, artists, and activists to work on a common topic during a six-week residency in Berlin/Brandenburg. It reinforces innovation through transdisciplinary cooperation beyond the boundaries of science. Exploring innovative forms of science communication, the programme aims to share the group's results with selected target audiences in order to generate tangible new impetus in academia, politics, and society. The topic for 2024 is "Power and Knowledge". Find out more [here](#).

Every year, the **Alexander von Humboldt Foundation** enables more than 2,000 researchers from all over the world to spend time conducting research in Germany. The Foundation maintains an interdisciplinary network of well over 30,000 Humboldtians in more than 140 countries around the world – including 61 Nobel Prize winners.

The authors are available for further information and debate on the recommendations. Please reach out to [residency@avh.de](mailto:residency@avh.de).

## Introduction

The global research landscape is now more interconnected than ever. International collaboration is a critical driver in addressing global challenges such as climate change, pandemics, and sustainable development. Germany has recognised the importance of transnational knowledge production as signalled in its Strategy for the Internationalisation of Education, Science, and Research.<sup>2</sup>

As a leading nation in science, technology, and innovation, Germany plays a critical role in shaping the global research landscape. In 2022, Germany invested over €110 billion in R&D, accounting for just over three percent of its GDP that year.<sup>3</sup> This investment in research and development positions Germany amongst the top four countries that fund research, along with the United States, China, and Japan.<sup>4</sup>

Science diplomacy is also critical for developing strategic international partnerships. Germany has a vested economic and strategic interest in ensuring it is seen to be facilitating equal partnerships and combatting structural global economic disparities. If Germany wishes to wield influence in leading global economic and strategic fora in an era of stiff global competition, it must first prepare the ground by developing trust in low- and middle-income countries (LMICs) through – amongst others – meaningful scientific partnerships that also serve the interests of LMICs.

Beyond this, growing the research capacity of LMICs will strengthen Germany's international reputation, enhancing its own global standing in key strategically important regions. In the light of the imperatives of science diplomacy and the simultaneous commitments to research internationalisation in the German Federal Parliament<sup>5</sup>, the Joint African Union-European Union Innovation Agenda, and the European Union's endorsement of the Brussels Statement of 2024<sup>6</sup>, **promoting equity in research collaborations is crucial.**

## Global Knowledge for Global Challenges

**Collaborative, diverse, and equitable research brings global benefits.** A 2020 report by the World Health Organisation (WHO) noted that inclusive research collaborations are 30 percent more likely to produce findings that are applicable and beneficial across widely different contexts. The Global Innovation Index (2023) similarly highlights that nations with higher levels of international collaboration in research tend to score better on innovation outputs, emphasising the importance of diverse and inclusive research networks.

Ensuring that partners from LMICs are treated as equals and have access to the same resources and opportunities as their German counterparts is essential for building trust and fostering long-term, sustainable research relationships. Equitable partnerships can help bridge the gap between

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<sup>2</sup> Federal Ministry of Education and Research, BMBF (2016). Internationalisation of Education, Science and Research | Strategy of the Federal Government. [https://www.bmbf.de/bmbf/en/international-affairs/worldwide-networking/internationalization-strategy/internationalization-strategy\\_node.html](https://www.bmbf.de/bmbf/en/international-affairs/worldwide-networking/internationalization-strategy/internationalization-strategy_node.html)

<sup>3</sup> Germany Trade & Invest (2024). 2022 Marked a Record for German R&D Investments. [https://www.gtai.de/en/meta/press/2022-marked-a-record-for-german-r-d-investments-1744536#:~:text=EUR%20121.4%20billion%20was%20spent,before%20in%20a%20single%20year.&text=Berlin%20\(GTAI\)%20%2D%20According%20to,reaching%20an%20all%2Dtime%20high](https://www.gtai.de/en/meta/press/2022-marked-a-record-for-german-r-d-investments-1744536#:~:text=EUR%20121.4%20billion%20was%20spent,before%20in%20a%20single%20year.&text=Berlin%20(GTAI)%20%2D%20According%20to,reaching%20an%20all%2Dtime%20high).

<sup>4</sup>Dyvik, E. (2024). Leading countries by R&D spending worldwide 2022. Statista. <https://www.statista.com/statistics/732247/worldwide-research-and-development-gross-expenditure-top-countries/>

<sup>5</sup><https://dserver.bundestag.de/btp/20/20160.pdf#P.20484>

<sup>6</sup>[https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/international-ministerial-meeting-brussels-endorses-statement-principles-and-values-international-2024-02-16\\_en](https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/international-ministerial-meeting-brussels-endorses-statement-principles-and-values-international-2024-02-16_en)

transnational research capacities, leading to more innovative and contextually relevant research outcomes across the globe.

## Historical Asymmetries in Global Knowledge Systems

### Colonial Legacies

During the colonial era, scientific exploration and knowledge production were often conducted by European powers in their colonies and the colonies of others, extracting not only resources but also knowledge that would then contribute to the economic advancement of the colonisers with little benefit for local populations. The consequent concentration of expertise in high-income countries (HICs) continued after World War II, with the consolidation of international research institutions and funding mechanisms that largely reflected the priorities of HICs.

### Extractive Relations

Research in many LMICs has often relied on the exploitation of local resources, with minimal regard for the long-term impacts on host communities. In this extractive model, well-resourced teams from HICs have used knowledge produced and provided by local partners or communities and reaped the benefits whilst partners and communities in LMICs have seen little return for their involvement.

### Epistemic Differences

Research has frequently failed to recognise that scientific practices and conceptions of knowledge differ across cultures and regions. These differing "epistemic conditions" - the diverse ways in which knowledge is created and understood - are still often overlooked during the planning, implementation, and reporting phases of research involving LMICs. This perpetuates and reproduces inequalities and leads to misunderstandings and conflicts that are counterproductive to the goals of effective science diplomacy.

## Contemporary Inequities in International Research

The global research environment continues to be marked by significant inequities in access to resources, opportunities, and decision-making power. Whilst most international funding schemes are aimed at developing equitable research partnerships and knowledge sharing in principle, the mandatory conditions undergirding funding mechanisms have failed to make an appreciable difference. Key reasons driving these imbalances are:

### Misaligned Research Visions and Agenda

International research projects are often shaped by the competitive interests and research imperatives of HIC funders. Even when schemes are drafted to promote collaborations with LMICs, few researchers from the region are typically consulted when the primary research agenda is being established. This leads to the vital considerations and research priorities of the region being ignored and the priorities of the research being aligned largely - even exclusively - with those of HIC partners. These directives inadvertently maintain the hierarchical relationships between HIC and LMIC partners that persist from colonial rule.

### Inequitable access to and participation in research

The lack of both infrastructures and practices enabling inclusive and accessible research systems continues to disenfranchise many researchers in developing countries. In the postwar and postcolonial era, helicopter research, referring to research in or on LMIC conducted by researchers from HICs with little or no inclusion of local actors, has been the norm rather than the exception. Often LMIC researchers are contacted in the later stages of application development for schemes

that require international participation. This continues to perpetuate existing power hierarchies and ignores the research impetus of LMICs.

### Disproportionate Burdens and Benefits of Research

Despite frequently working alongside peers from HICs, researchers in LMICs are severely under-represented in academic literature and often receive less recognition for their work. In the wake of the publishing industry's successful evasion of the goals of the Berlin Declaration (2003) and the emergence of pay-for-publication models of open access research, the issue of co-authorship and / or research resourcing for LMICs has become yet more pressing; this too, when bibliometrical data, the statistical assessment of academic publications, simplistically serves as a global proxy for "research excellence." Researchers from LMICs who are unable to fund the cost of publishing in high quality science publications are often unfairly seen as falling behind. A 2021 study published in *Nature*<sup>7</sup> found that only about two to three percent of papers in leading scientific journals included a first or corresponding author from an LMIC.

### Analysing research partnerships through publication metrics

By mapping the absence of LMIC partnerships in terms of the number of publications, we seek to showcase the scope for improving funding practices in international cooperation. Whilst Germany's widespread research network is to be celebrated, there is merit in recognising that more can be done to improve the quantum and quality of research partnerships with LMICs.

Between 2022 and 2023, Germany's scientific publications were co-authored with researchers in 159 different countries. Most of these collaborations, however, involved researchers based in other high-income countries; only relatively few were located in LMICs.



Fig.1. Papers published by German researchers in partnership with authors from different countries between 2022-23 according to Scopus data accessed on 18 August 2024.

If we remove countries with less than two percent of the total number of papers co-published with Germany, the resulting representation of international collaboration makes dismal reading.

<sup>7</sup> <https://www.nature.com/articles/s44185-023-00021-7>



Fig.2. Co-authorship with different countries where the number of papers exceeds two percent of the total publication output (threshold: > 3517 papers).

By mapping the absence of LMIC partnerships in terms of the number of publications, the need to improve funding practices for international cooperation becomes clear.

**Whilst Germany's increasingly global research network is to be celebrated, there is strategic and intrinsic merit in recognising that more can be done to improve the quantum and quality of research partnerships with LMICs.**

## Balancing the Scales: Prioritising Equity in Research Internationalisation

**Funding is critical to advancing equity in research internationalisation.**

Simply put, where the money comes from dictates where the control over research resides. In international research collaborations, funding usually originates from high-income countries such as Germany, creating new forms of dependency. Often, researchers based in LMICs have little influence on where, how and to what ends the money being spent on research in their countries is used. German funding for international research partnerships in LMICs remains of paramount importance since national governments in LMICs lack the resources of HICs. However, current policies, strategies, and practices in funding internationalisation must be improved.

Research agendas, administrative processes, project workflows, and success criteria are mostly pre-determined by HIC researchers and funding organisations. These restrictions often hamper meaningful research partnerships in LMICs but rather lead to mere performance compliance and lip service from HIC collaborators. Partnerships can be made more equitable when LMIC researchers are empowered both to participate in developing applications for research projects alongside their peers from HICs in the early stages and to initiate locally meaningful collaborations with researchers in high-income countries. Dismantling this dependency and supporting sustainable funding is a step towards more equitable research partnerships.

Funding organisations often operate on the assumption that the principles of research ethics, considerations of justice and equitable global practice can be addressed on an individual basis in the respective project proposal and/or execution phase. But operationalising a standard and mandatory protocol promoting shared responsibility that begins with the design of funding schemes, calls for proposals, and research programmes would ensure better outcomes for more equitable research internationalisation as well as more impactful global knowledge production and utilisation.

## The Role of German Funders and Research Organisations

**German funding bodies can become strategic allies by addressing inequities in international research.**

Better policies guiding funding allocation, partnership models, and project evaluation can significantly influence global research dynamics – whilst often being cost neutral. They have the power to address existing inequities and the efficacy of Germany's science diplomacy. **By embedding the principle of equity and co-design in funding mechanisms, German funding bodies can advance a fairer global research landscape.**

### Recommendations:

To implement the above principles on responsible collaborative research with researchers and institutions in LMICs we recommend German funding bodies to modify their schemes to mandate the following when research is conducted in or in conjunction with LMICs. This can, for example, be achieved by requiring corresponding statements on application forms for funding, thereby ensuring that equity in research is included in the project from its initial inception.

All German researchers and research projects involving collaborators in LMICs must collaborate with their LMIC research partners to:

#### 1) Foster Participation

Co-develop and implement a plan for consultation, co-design, participation and accountability with LMIC partners which is responsive to the resources, needs and perspectives of research partners in low- and middle-income countries. This may include accepting in-kind contributions from international partners with fewer resources rather than demanding unaffordable co-funding arrangements, as well as increasing the number and project control of principal investigators based in LMICs.

#### 2) Facilitate Equal Knowledge Exchange

Develop and implement a plan for peer-to-peer, horizontal HICs/LMICs knowledge exchange that recognises different research and social priorities as well as the differing epistemic conditions surrounding the creation and management of knowledge. This needs to be done through consultation before and during the active research phase involving both researchers and communities affected to facilitate an understanding of the context in which the research is conducted. It means apportioning time and money for deliberative consultation to request input that reflects communities' lived experience of working with researchers.

#### 3) Adapt Research

Develop and implement a plan for the monitoring and adaptation of research activity that includes community representatives affected by the research who understand local contexts. Research objectives, questions, and targeted outcomes must be translated into languages that local host communities can understand.

#### 4) Unlock Community Benefits

Co-develop and implement a plan to build sustainable research and research administration capacity and ensure lasting community benefits for research partners and communities affected or hosting. Prioritise members of the community in the allocation of data collection work, training opportunities and other roles.



## **5) Enable South-South<sup>8</sup> Collaboration**

Integrate support and flexibility for developing multisectoral collaborations between LMICs through the funding schemes. Wherever possible, provide avenues (such as workshops and capacity building training) for cross-country knowledge sharing amongst partners of LMICs through dedicated annual meetings and conferences.

## **6) Share Results**

Develop and implement a plan for the equitable and linguistically accessible sharing of research agendas and results, including via open science structures enabling broad access and participation in LMICs. This should include mandatory budgeting for open-access publication costs, enabling opportunities for lead author publications for LMIC partners as well as a commitment to publishing the research results on platforms that are accessible to the local communities affected to improve host community knowledge.

## **7) Share Rewards**

Where research is expected to have commercial potential, develop, and implement a plan for equitable profit sharing and the protection of intellectual property rights with LMIC partners. This can be achieved by legally formalising the equitable division of any financial gain stemming from the outcomes of research, naming LMIC partners on any patents, formally (legally) recognising the intellectual property rights of LMIC partners elsewhere, and where appropriate, the host communities who were affected by or participated in the research that developed them.

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<sup>8</sup> By South-South collaboration, we refer to the mutual exchange of resources, technology, and knowledge between developing countries also known as countries of the Global South. Many countries in the Global South are classified as low- and middle-income countries.

## Relevant Literature

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8. European Commission. (2024). July 2024 marks the One Year Anniversary of the adoption of the joint AU-EU Innovation Agenda. [https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/july-2024-marks-one-year-anniversary-adoption-joint-au-eu-innovation-agenda-2024-08-02\\_en](https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/july-2024-marks-one-year-anniversary-adoption-joint-au-eu-innovation-agenda-2024-08-02_en)



## Appendices

### Appendix I: Action items for funders to promote equitable internationalisation in grant schemes involving research partners from LMICs

The recommendations in this policy paper provide concrete proposals for measures that can be implemented in the short, medium and long term. These proposals only apply to extended funding projects with a duration of at least three years.

#### Can be actioned within one year:

- Mandate a co-lead from LMICs on the application form
- Request a statement on official development assistance (ODA) compliance and how the research question is relevant for partnering LMICs
- Request plans for dissemination of research findings on the application form.
- Request a statement on participatory action research (if applicable to the scheme) on the application form
- Ensure all grant-recipients commit in writing to share intellectual property rights equitably
- Request statement on in-kind support to be provided by lead HIC organisation on the application form
- Provide funds for open access publishing
- Provide funds for research manager for co-lead LMIC organisation

#### Can be actioned in two to five years:

- Ensure more participation of researchers from the Global South and LMICs in agenda-setting panels
- Ensure participation of researchers from LMICs on decision-making committees assessing funding submissions
- Plan a dedicated networking session at all annual conferences for knowledge sharing amongst researchers in the Global South
- Include budgets for training and capacity building for research staff (students and fellows) in LMICs
- Modify criteria for evaluation to include equitable research partnerships
- Develop mechanisms to transfer funds directly to the LMIC partner's institute

#### Can be actioned in five years:

- Schemes for structuring long-term funding
- Include monitoring, evaluation and learning plans for assessing the internationalisation of research

## Appendix II: Questions for Programme Managers to assess their schemes involving international research partnerships with institutes/researchers in LMICs

This is a self-assessment tool for programme managers to assess the strengths and weaknesses of a specific grant scheme with regard to promoting equitable research partnerships based on the recommendations of the policy paper. The survey tool will generate a radial chart highlighting the strengths and weaknesses of the scheme, enabling programme managers to prioritise areas for improving equitable research internationalisation.

### Foster Participation

- Is there a provision for adding a co-lead investigator to the research proposal from the LMIC research institute?
- Does the scheme allow the transfer of funds directly to the LMIC co-lead investigator's institution?
- Does the application form require a statement on co-design, highlighting the benefits of research to the LMIC researcher?
- For projects involving engagement with local communities (either for collecting data or those potentially affected by the study) - do you request community engagement plans at the application stage?
- Does the funding scheme allow for collaboration with non-academic institutions such as civil society organisations and industry?
- Are you aware of contracting difficulties with research institutions in LMICs and do you have contingency plans for reasonable flexibility in contracting processes?

### Facilitate Equal Knowledge Exchange

- Are budget allocations for capacity development in LMICs mandatory at the application stage?
- Do you check whether the lead HIC research investigator has allocated funding for capacity development for the partnering LMIC institutes?
- Does the funding scheme mandate the development of shared learning resources?
- If so, do you request a plan for making the resources freely available?
- Do you provide funds/infrastructure (in the form of funder websites/knowledge base) for making the learning resources freely available to all?

### Unlock Community Benefits

- Research partners in HICs have access to certain institutional resources lacking in LMICs. Are research partners from HICs required to provide a statement to the research partners in LMICs on in-kind support?
- Do you ask for a sustainability plan on fostering the collaboration beyond the duration of funding?
- Does the funding scheme allow budgeting for equitable research support structures, for example, research administration, financial administration for HICs and LMICs research partners?

### Enable South-South Collaborations

- Do you maintain a database of all institutions and countries being funded in the Global South?
- Have you enabled institutions based in the Global South to connect with one another?
- Do you have plans to enable research institutions within the network to connect with each other?
- Have you or do you have plans to set aside time at annual meetings and conferences for South-South knowledge exchange?

### **Adapt Research**

- With regard to expected results, is a monitoring, evaluation and learning plan requested at the application stage?
- Does the guideline for the monitoring, evaluation and learning plan require it to be inclusive of the needs of the partners in LMICs?
- Are researchers from LMICs on the decision-making committee?
- Are researchers from LMICs on the agenda setting committee?

### **Share Results**

- Is a science communication/public engagement plan requested at the application submission stage?
- Are researchers evaluated on a science communication/public engagement plan for making the results equitable and linguistically accessible to researchers and local communities in LMICs?
- Does the funding body have a policy on making research outputs from its funding openly accessible to everyone and useful to decision makers?
- If so, does the funding body provide open access funds for publishing research findings in scientific journals?

### **Share Rewards**

- Are there policies in place to ensure shared ownership of IP rights for outputs and outcomes of the research?
- Where research is expected to have commercial potential, is equitable profit sharing included in the grant conditions?
- Is there a plan for implementing and monitoring the grant conditions regarding IP rights and equitable profit sharing?