

## Funding equitable transdisciplinary research partnerships for societal impact

Tackling complex societal challenges requires transdisciplinary, demand-driven research delivered through international research partnerships that focus on equitable knowledge co-production. In turn, advancing research impact requires funders to foster partnerships that build capacity and rebalance relations between the Global North and South.

### Introduction

#### Box 1. Definitions of interdisciplinarity and transdisciplinarity

Interdisciplinarity can be defined as ‘research involving unrelated academic disciplines in a way that requires them to cross disciplinary boundaries to create new knowledge and theory in pursuit of a common research goal’.<sup>1</sup> The UK’s Global Challenges Research Fund (GCRF) also situates interdisciplinarity as a process to ‘...effectively tackle development challenges’.<sup>2</sup> Transdisciplinarity, in contrast, ‘...is characterised not only by interdisciplinary integration but also by the involvement of non-academic stakeholders in the research process, in part to address the “applicability gap”...’.<sup>3</sup> Transdisciplinarity is also a reflexive, knowledge production process, ‘which offers novel ways to assess quality’.<sup>4</sup>

Global environment and development challenges are complex and cross-cutting. Understanding and addressing them require the collaboration of different disciplines and stakeholders (policymakers), often across geographies and sectors.<sup>5</sup> Universities, research institutes, and research funders<sup>i</sup> increasingly value and call for inter- and transdisciplinary work (Box 1), but in practice, this often does not translate into the desired shift towards inter- and transdisciplinary working.<sup>ii</sup> Understanding how to foster more effective transdisciplinary research partnerships is crucial to deliver knowledge matching the multi-faceted scope of policy design and implementation. This includes the need to support equitable partnerships between Northern and Southern partners. This is vital to build trust, interdisciplinary collaboration and sustained capacity strengthening at the researcher level, but also at the organisational and institutional levels in

### Summary

Addressing societal challenges requires transdisciplinary research involving the collaboration of different disciplines, stakeholders, and research users to maximise impact. Funders play a strategic role in fostering the capacity of international research partnerships and rebalancing relations between the Global North and South for equitable knowledge co-production. Drawing on lessons from the Sentinel research partnership, this brief provides guidance for research funders, focusing on: 1) fostering a supportive research environment; 2) the design of funding calls and structures; 3) strengthening the capacities of research partnerships; and 4) embedding institutional learning in effective transdisciplinary research.

### Background

Sentinel brings together academic and development organisations across the UK, Zambia, Ethiopia, and Ghana to produce research on impacts, risks and trade-offs relating to agricultural expansion, to inform policy in Ghana, Zambia, and Ethiopia.

<sup>i</sup> For example, the UKRI Global Challenges Research (GCRF) Fund which funded Sentinel, had an explicit focus on ‘challenge-led interdisciplinary research’ ([www.ukri.org/what-we-offer/collaborating-internationally/global-challenges-research-fund/](http://www.ukri.org/what-we-offer/collaborating-internationally/global-challenges-research-fund/)).

<sup>ii</sup> see footnote xi.

Partners:



Funded by:



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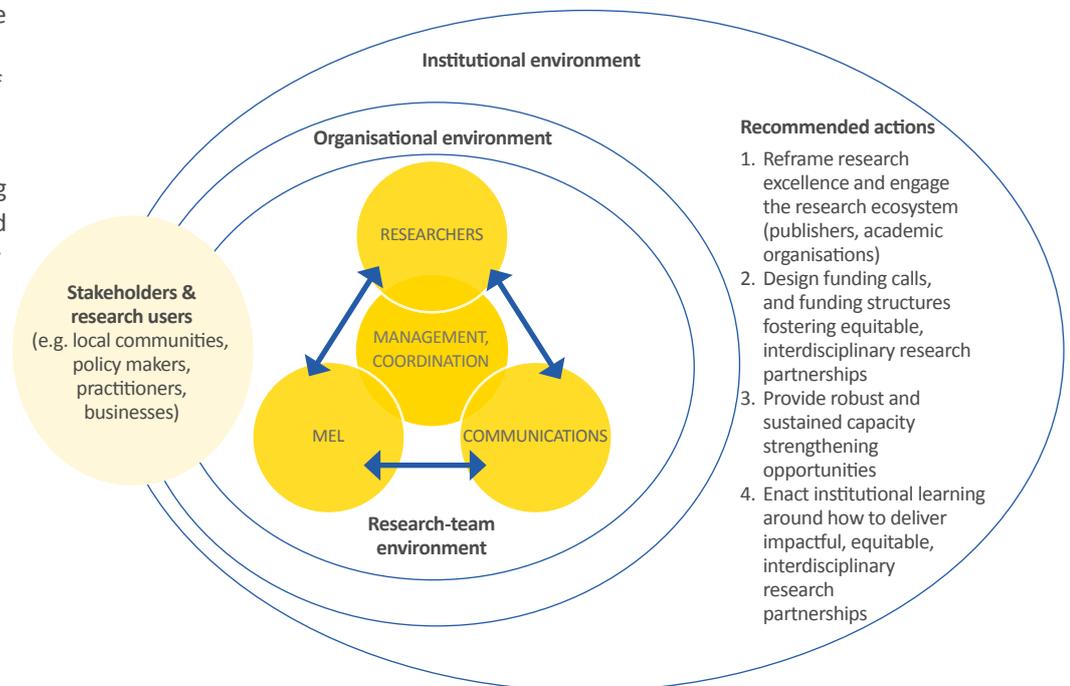
## Box 2. Recommendations

We recommend that research funders:

- Shape supportive incentive structures by: 1) framing research excellence<sup>iii</sup> to incentivise transdisciplinary research (including interdisciplinarity and research user engagement) (Box 1);<sup>iv</sup> and 2) work with organisations conducting research to incentivise transdisciplinary collaborations and outputs.
- Design funding structures that foster equitable partnerships, e.g. establish a direct relationship with partners in both the North and the South (rather than just through a Northern partner) to foster co-leadership and mutual accountability.
- Set up seed grants as part of a multi-stage grant funding process as a mechanism to build and test partnerships.
- Design longer-term funding cycles to reduce the impact of transdisciplinary working transaction costs on researchers, and incorporate budget flexibility and extensions to address unforeseen challenges (e.g. COVID-19), with ample notice.
- Provide ample time for project proposals (between call announcement and submission deadlines) to enable nascent partnerships to genuinely co-create proposals and incorporate new and suitable expertise.
- Ensure that funded partnerships:
  - are balanced (North-South) in team size, time budgeted, responsibilities, expertise, and number of organisations,
  - incorporate and resource dedicated facilitators to support internal communication, relationship building and research integration,
  - incorporate an inception period to co-conceptualise and agree an accountability framework, clarifying expectations around the delivery of interdisciplinary, demand-driven research, equitable partnerships, and capacity strengthening
  - provide sustained capacity strengthening for research, partnerships to support transdisciplinary working and equitable collaboration (e.g. training on tools or methodologies to foster research integration),
  - embed a programme for active monitoring, evaluation, and learning, tailored to capture and disseminate lessons on transdisciplinary working.

partner countries.<sup>6</sup> Effective collaboration across research, communications, and monitoring, evaluation and learning (MEL) roles within research teams is also crucial, to ensure that research users are engaged in the process, the research is guided by user needs, and the impact of (and learning from) these partnerships is tracked. Research funders play a strategic role in how they design funding calls, support research partnerships, and shape the institutional environment<sup>v</sup> for research (Figure 1). Yet, there is a lack of learning on how to operate such partnerships and, hence, a lack of understanding around how funders can better support this process.

**Figure 1. Actions by funders influence the institutional environment (outer ring), which in turn strengthens the capacities of organisations (middle ring) and research teams (inner ring). The research team involves research, management, communications, and MEL roles. Together the research-team interacts with research users and target stakeholders (government, private sector, civil society, NGOs, multilateral organizations).**



<sup>iii</sup>The term ‘research excellence’ is used for the UK Research Excellence Framework (REF) ([www.ref.ac.uk](http://www.ref.ac.uk)). In this briefing, we use the term more broadly, in relation to how quality research is framed, in and beyond the UK and, in turn, how this shapes academic incentive structures.

<sup>iv</sup>We recognise that the extent to which the institutional research environment supports interdisciplinary research and research user engagement likely varies across contexts.

<sup>v</sup>Institutions (e.g. in the UK, the Research Excellence Framework - REF), and funding bodies (e.g. UKRI, NERC), play an important role in shaping structures and incentives, which in turn influence academic priorities and ways of working. The REF ‘is the UK’s system for assessing the excellence of research in UK higher education providers (HEPs). The REF outcomes are used to inform the allocation of around £2 billion per year of public funding for universities’ research’ ([www.ukri.org/about-us/research-england/research-excellence/research-excellence-framework](http://www.ukri.org/about-us/research-england/research-excellence/research-excellence-framework)).

## Aim

This briefing draws on research and experience from the Sentinel research partnership to present lessons learned on fostering equitable, transdisciplinary North-South research partnerships to tackle societal challenges. We focus on UK research funders,<sup>vi</sup> but the guidance is relevant to the broader funding landscape.<sup>vii</sup>

## Methods

The findings reported here are based on four rounds of in-depth semi-structured interviews with Sentinel team members over the duration of Sentinel (4.5 years).<sup>viii</sup> Interviews focused on enablers and constraints to inter- and transdisciplinary working, equitable partnerships and collaborative working in the research team. Interview results were presented to the Sentinel team at a workshop with 25 attendees. The team discussed the lessons learnt to co-create guidance.

## Results and recommendations

### Fostering a supportive research environment for transdisciplinarity

Fostering transdisciplinarity implies transformative change in the research process. First, co-creating demand-driven knowledge across disciplines, particularly in international research partnerships, requires time.<sup>3,7,8</sup> We found that the more diverse the team (such as in terms of discipline, geography, or types of organisations), the longer it takes for people to understand each other, align perspectives, and develop trust. Yet, researchers face competitive, demanding research environments, which incentivise peer-reviewed outputs in established, often disciplinary, journals.<sup>9</sup> Although research funders are increasingly calling for inter- and transdisciplinary research, in practice there remains a lack of reward and incentives, notably in universities, to establish interdisciplinary collaborations, or engage research users.<sup>10,11</sup> In this environment, we found transdisciplinary research can impose significant transaction costs on researchers, particularly on early career researchers.



<sup>vi</sup>The UK funding architecture and research reward systems influence the capacity of UK researchers to promote equitable partnerships and demand-driven interdisciplinary research, the core objectives of Sentinel and its funders (UKRI). There were also a number of constraints to interdisciplinary, and transdisciplinary working in partner organisations in Africa – for example reward and promotion systems in universities remain largely based on the number of publications produced by a researcher, as single or lead author.

<sup>vii</sup>Including across higher income countries (i.e. the Global North) and Global South research institutions.

<sup>viii</sup>We completed a total of 90 interviews, involving 35 people in research, management, communication, and monitoring, evaluation, and learning (MEL) roles.

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First, although the UK Research Excellence Framework (REF) 2021 guidance states that journal impact factors should not be used in assessing outputs,<sup>12</sup> there remains encouragement in universities to prioritise work around publishing research in journals with a high Impact Factor.<sup>ix,x</sup> In turn, this shapes incentive structures influencing career progression in academia. This can conflict with the need for transdisciplinary research, which is often practical, situated, and place-based.<sup>4</sup> Furthermore, given that inter- and transdisciplinary research is often more challenging, slower, and sometimes harder to publish,<sup>3</sup> this disincentivises researchers, particularly early career researchers, from pursuing inter- or transdisciplinary research.<sup>11</sup>

Second, although the REF in the UK has taken active steps to support interdisciplinary research assessment and places increasing weight on impact case studies, requirements to substantiate these are onerous. Furthermore, several senior researchers pointed out that these needed to be linked to a published output.<sup>xii</sup> Hence the added value of other research outputs (e.g. policy briefs) or research user engagement processes (e.g. stakeholder engagement workshops, rapid evidence assessments), which do not necessarily translate into journal publications, is seen as lower priority, even though these activities are crucial to deliver impact.

Ultimately, recognising the value of inter- and transdisciplinary research alone is not enough to overcome these barriers.<sup>xi</sup> First, funders are advised to urgently review how research is evaluated, to shift academic incentive structures towards incentivising collaborative transdisciplinary working, while simultaneously lobbying the research landscape (publishers, academic organisations) and working with key decision makers in these organisations to generate supportive structures aligned with the demands of transdisciplinary working. For example, funders could earmark financial support to research organisations, specifically geared at reducing administrative burdens on senior researchers leading transdisciplinary initiatives. This can help free up time for relationship building, research integration, and research user engagement. This would support more effective collaboration

between academia, government, the private sector, and civil society, by aligning academic priorities with societal needs, while not compromising intellectual rigour.

There is also a need to design indicators to account for the added value<sup>xiii</sup> of transdisciplinarity and the less tangible contributions made in rebalancing power within North-South research partnerships. Importantly, we recommend that all funders make research funding conditional on the inclusion of MEL and communications experts in projects and programmes, as they are crucial in delivering impact. We find that MEL and communication functions, notably in academia, are often non-existent, or where they do exist, are highly undervalued and understood as passive, one-way processes rather than dynamic two-way dialogues with research users.<sup>xiv</sup> Lastly, we recommend establishing internal structures in funding bodies to support transdisciplinary research, which could include a dedicated team across different programmes, as well as investment in a programme of learning and sharing lessons (see the section on embedding institutional learning).

## Designing funding calls and structures to promote equitable, impactful, transdisciplinary research partnerships

Our research indicates that the structure of funding can impact the emergence of equitable partnerships. Specifically, we found that appointing a Northern institution as the lead, to oversee funding allocation and compliance, can inhibit the emergence of co-ownership between Northern and Southern partners, as also highlighted by Vincent et al., 2020.<sup>7</sup> A direct connection with a Northern and Southern partner through a co-leadership structure may foster more equitable partnerships.<sup>xv</sup>

Second, we found that a lack of familiarity between partners can discourage collaborative working, team building, and research integration. Therefore, we recommend shorter-term 'start-up' seed grants for new research partnerships, to help foster relationship-building and create opportunities to explore ways of

<sup>ix</sup> [www.ref.ac.uk/publications/panel-criteria-and-working-methods-201902/](https://www.ref.ac.uk/publications/panel-criteria-and-working-methods-201902/) (see paragraph 207).

<sup>x</sup> The Impact Factor™ is a proprietary measure published by Clarivate. In short 'it is a measure of the frequency with which the "average article" in a journal has been cited in a particular year or period' and as such is not designed to assess the extent to which an article is related to 'real world' impact. For more, see <https://clarivate.com/webofsciencegroup/essays/impact-factor/>.

<sup>xi</sup> REF guidance states that case studies must reference one or more key research outputs (see point 319).<sup>12</sup> Although these outputs are not limited to peer-reviewed journal publication outputs, it highlights the need for references, produced by the submitting unit, from research underpinning the impact described in the case study (REF 2021 - Panel Criteria and Working Methods, 2019). [www.ref.ac.uk/publications/panel-criteria-and-working-methods-201902/](https://www.ref.ac.uk/publications/panel-criteria-and-working-methods-201902/). Hence, the issue seems to be how the REF guidance is interpreted, either by some researchers, or their own organisations, perhaps because ultimately, the overall weight of peer-reviewed journal articles in REF evaluations is 60%, in contrast to 25% for impact case studies.

<sup>xii</sup> In the UK, the REF explicitly acknowledges the value of interdisciplinary research and research user engagement ([www.ref.ac.uk/about/interdisciplinary-research/](https://www.ref.ac.uk/about/interdisciplinary-research/)).

<sup>xiii</sup> For an example of a framework tailored to evaluate the quality of transdisciplinary research, see Belcher et al., 2016.<sup>9</sup>

<sup>xiv</sup> Transdisciplinary working requires knowledge brokers, to engage in dynamic, two-way dialogues with research users to design research for impact and to track the impact. In Sentinel, this function was supported by communication and MEL officers in partner countries.

<sup>xv</sup> We recognise that some partners may lack accounting capabilities or systems to report to funders. In such cases, mechanisms should be implemented to actively strengthen partners' accounting capacities.

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working and refine research proposals (as part of multi-stage grant funding processes).<sup>xvi</sup> Such start-up phases would also provide the opportunity to assess partners' organisational capacities, which is critical to ensure effective liaison with funders (e.g. in relation to financial reporting), and hence effective co-leadership structures. Furthermore, we found that interdisciplinary working, partnership building, and capacity strengthening impose significant demands and costs on researchers, creating tension with delivering academic publications. Therefore, we also recommend that, to strengthen transdisciplinary research, longer-term funding cycles (beyond four years) are needed, as well as establishing mechanisms to support research partnerships in team building, cross-disciplinary dialogue, and learning.

Third, at the proposal stage, our results suggest that ensuring buy-in and shared understanding is crucial to foster shared ownership and collaboration. We therefore recommend ample time for project proposal turnaround to enable partnerships to co-create these, in addition to an inception period within the project's timeframe. This could occur during the aforementioned start-up seed grants. This would allow research teams to incorporate suitable capacities and skills at the start, while providing time to build familiarity with partners.

Importantly, we also found that imbalance in the number of Northern and Southern partners, their team sizes, time budgeted, and roles and responsibilities compounded each other, significantly constraining co-ownership and equity. We recommend ensuring that funded partnerships strive to establish this balance. In addition, we found that facilitation was key to fostering cross-disciplinary dialogues, shared understanding, collaboration, and equitable participation. This strongly points to the need to mandate that funded partnerships incorporate a dedicated facilitator to support internal communication and relationship building, as we found this fostered shared understanding, and collaboration. Additionally, projects should include partners with explicit 'bridging roles', to coordinate research processes across disciplines. This requires individuals with a breadth of understanding, systems thinking skills, and relational skills. Lastly, we recommend that funders require research partnerships to draw up an accountability framework. Such a framework would set expectations and constitute a shared agreement around the delivery of transdisciplinary research, equitable partnerships, and capacity strengthening to minimise the risks<sup>xvii</sup> associated with participatory, multi-organisational collaboration.

## Supporting the capacity of international research partnerships

Funders can foster the capacity of international research partnerships in other ways. First, budget flexibility (e.g. allowing research teams to shift earmarked funds between cost categories or partners, depending on emerging needs), as well as funding extensions, can help support continued relationship building and transdisciplinary working in times of uncertainties or shocks (e.g. COVID-19). We found that uncertainties in funding flow, compounded by the challenges imposed by COVID, seriously constrained transdisciplinary working and partnership building. Second, funders can actively support transdisciplinary working through the provision of capacity strengthening for research teams they are funding, in partnership with a dedicated facilitator. This could include training on tools or methodologies to foster research and knowledge integration or building dialogue across disciplines. Additionally, providing finance and guidance for easy-to-use internal communication and information-sharing platforms, would help foster knowledge exchange and shared understanding.

## Embedding institutional learning on how to deliver equitable, transdisciplinary research partnerships which tackle societal challenges

We recommend a greater emphasis on MEL, drawing from MEL processes in place within development programming, including the need to be demand-responsive, and incorporate MEL and communication experts throughout the research process. First, our collective experience suggests the need for support to research teams in establishing robust MEL systems to promote reflection and co-learning<sup>13</sup>, evaluate capacity-building progress, and track partnership dynamics. Second, at the research funder level, we recommend investing in a programme of learning and sharing lessons on how to design, operate (and manage risks), and track the impact of transdisciplinary research, as well as to understand what funding structures, processes, policies, and staffing would need to be in place to support transdisciplinarity. A focus should be placed on capturing learning on how to promote effective collaborations across disciplines and the various roles involved in research teams (such as between communications partners and researchers), as well as the impact of research

<sup>xvi</sup> For example, [the Wellcome Trust](#) provides Seed Awards to help researchers develop novel ideas that will go on to form part of larger grant applications (Also, the UKRI CGRF Collective Programme – Cultures and Histories of Agriculture, Food, Nutrition (May 2019) provided up to £200,000 to establish interdisciplinary partnerships and jointly develop new projects.

<sup>xvii</sup> Multi-stakeholder research collaborations can be challenged by differing ways of working, expectations and priorities across organisations and cultures. To support accountability, Sentinel established a partnership agreement, clarifying expectations around the delivery of demand-driven interdisciplinarity, equitable partnerships and capacity strengthening. This agreement included shared aims, definitions, ways of working, finance administration, internal peer-review processes and dispute resolution, and intellectual property rights. Sentinel also promoted accountability by regularly monitoring progress towards project objectives, through an internal progress tracking tool.

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expenditure on transdisciplinarity. Dedicating substantial resources for building institutional learning on how to effectively design, implement, monitor, learn and disseminate lessons, is crucial to get transdisciplinary research right.

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