



# Leveraging research partnerships to achieve the 2030 Agenda

## Experiences from North-South cooperation

*Creating an interconnected, transnational knowledge society that provides equal opportunities for everyone could prove a powerful way of moving towards sustainable development. Having experienced decades of North-South cooperation, the authors believe that with more transdisciplinary research and support from funders, governments, the private sector and civil society, research partnerships can help forge a path towards a more balanced production and dissemination of knowledge. The opportunities offered by the digital era can help strengthen the framework and performance of these partnerships.*

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### Leveraging research partnerships to achieve the 2030 Agenda. Experiences from North-South cooperation

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#### Abstract

Transnational research partnerships are considered fundamental for supporting research and creating shared knowledge for sustainable development. They enable the acquisition and global sharing of high-quality information and create shared knowledge and capacity. This paper aimed to identify the enabling factors of such partnerships. In a survey carried out by the authors of this article, partnerships were perceived most beneficial when they provided access to new key features such as funding, technology and training. Compliance with research partnership principles, combined with funds and shared interests, was seen to further enhance the longevity of partnerships. Upon consulting the recent peer-reviewed literature, it became clear that research was lacking with regard to optimising the framework and performance of research partnerships, despite galloping technological progress in other areas of sustainable development. We believe that technological opportunities could be better harnessed to enable the concept of partnership to evolve and move towards transformative research for the advancement of sustainable development.

#### Keywords

global challenges, multisector, partnership, Sustainable Development Goals, transdisciplinarity, transnational

### Background

Addressing the most pressing contemporary global challenges such as climate change and growing socioeconomic disparities is critical for the future wellbeing of humanity, the environment and our planet. The *2030 Agenda on Sustainable Development (2030 Agenda)* with its 17 *Sustainable Development Goals (SDGs)* provides a common framework for addressing these challenges (UN 2015). While the *Millennium Development Goals (MDGs)* were drafted to respond to pressing social issues in low- and middle-income countries (LMICs)<sup>1</sup>, the *2030 Agenda* no longer separates these issues by hemisphere and, moreover, has integrated social, economic and environmental agendas. Additionally, unlike *MDGs*, which were mainly sectoral, *SDGs* are interconnected by their 169 targets and demand a multisector perspective. While rife with conflicting issues, there are synergies between targets spanning from local to global scales. As the implementation of the *2030 Agenda* largely depends on progress at local and national levels, priorities and concrete transformative measures must be negotiated at different levels and correspond to the capacities of the signatory states.

*SDG 17* stresses the need to revitalise the global partnership for sustainable development and to strengthen the means to do so (UN 2015). Prerequisites for global sustainable development include more efficient coordination, collaboration and knowledge

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<sup>1</sup> <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>

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exchange between different sectors and greater balance in terms of their involvement in research and on decision-making panels. Only pluralistic partnerships that operate beyond disciplines, sectors and territorial boundaries will succeed in rising to the complex challenges posed by the interdependency of *SDGs* and so-called wicked problems where both factual certainty and societal agreement on the definitions of problems and adequate solutions are not provided (e.g., genetically modified organisms or the energy transition). Transdisciplinary research, multisector collaborations and transnational consortia are a few of the tools that can be used to handle this complexity (Lang et al. 2012, Keairns et al. 2016, Salunke and Lal 2017, Stibbe et al. 2018, AESA 2019) (box 1).

This research article aims to outline the evolution of transnational research partnerships from the 1950s to date, to establish recommendations that will allow for the advancement of the *2030 Agenda* and to suggest practical means for reinforcing those recommendations.

### Global share of research capacity

Transnational collaborations are considered fundamental for supporting research and joint knowledge creation for sustainable development that addresses national and global challenges (Upreti et al. 2012, Nordling 2015). Yet, integrating various stakeholders from LMICs into the international science system and strengthening their academic structures is one of the biggest challenges in terms of building transformative capacities globally. Asymmetric conditions often hinder successful transnational partnerships – “North-South” partnerships in particular. The main sources of inequality are funding, research capacity and access to data (Whitworth et al. 2008, Marjanovic et al. 2017). The share of the global gross domestic expenditure on research and development (80 percent in 2007) fell to 69 percent in 2013 for 55 high-income countries (HICs) and rose from 0.2 to 0.3 percent for 34 low-income countries (LICs) for the same time period (UNESCO 2015). At the same time, expenditure increased in upper-middle-income countries (namely China). The resulting lack of context-specific data and information in LMICs, combined with poor research governance and infrastructure, poses a major obstacle to achieving *SDGs* at the national level and hampers regional and global programmes that require data and capacity sharing (see Kulonen et al. 2019, in this issue).

### The history of North-South research partnerships

Understanding the historic evolution of North-South power dynamics may help in facilitating best practices for creating equitable, efficient research partnerships to support the implementation of the *2030 Agenda*. During the 1950s and 1960s, HICs’ primary aim in cooperating with developing countries was to find quick solutions to development issues through scientific and technological support (Gaillard 1994). In the 1970s, the concept of local capacity building and development emerged and was supported at the United Nations *Conference on Science and Technology for Development* in Vienna in 1979 (UN 1979). In this context, scientific and technological development was considered instrumental for de-

#### BOX 1: Definitions of key words

##### Transdisciplinary research

- focusing on societally-relevant problems,
- enabling mutual learning processes among researchers from different disciplines within academia as well as outside actors, and
- aiming to co-create solution-oriented, socially robust knowledge.

##### Multisector approach

Deliberate collaboration among various stakeholder groups and sectors to jointly achieve a specific outcome or goal. By involving multiple sectors, partners can leverage knowledge, expertise, scope and resources, benefiting from their combined diverse strengths as they work towards the shared goal of producing better outcomes.

##### Transnational

Extending or operating across national boundaries.

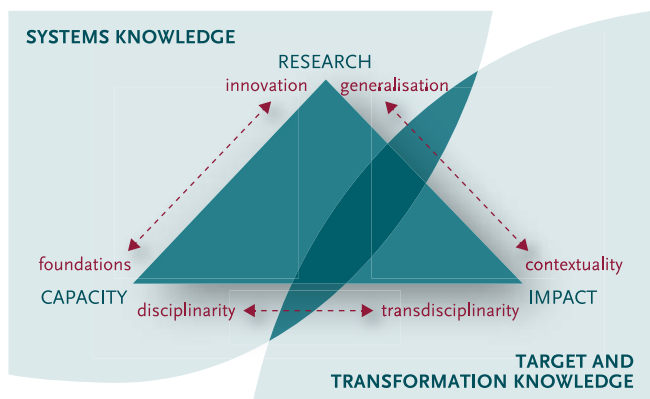
##### Partnership

Initiatives voluntarily undertaken by government and non-state actors whose efforts contribute to the implementation of agreed development goals and commitments.

velopment in poorer countries (Gaillard 1994), the main goal being to build capacity for problem-solving research. The difference between the “quick-fix” approach and local capacity building divided donor agencies at that time (Lewis 1987, Gaillard 1994). In the 1980s and 1990s, many donors and aid agencies convinced the governments of developing countries that tertiary education and scientific research were luxuries that could be acquired from developed countries in the form of “technical assistance”. Some scholars see the results of this stance as a hindrance to the building of local capacities in science and technology at universities in much of sub-Saharan Africa (Gordon and Aryeetey 2012).

One of the key trends in North-South research collaborations over the past three decades has been the move towards more multi-, inter- and transdisciplinary research (Bradley 2007). New research based on such approaches requires long-term collaboration built on mutual trust and fairness (Tanner et al. 1994, Bonfoh et al. 2011). To address asymmetries, researchers from LMICs requested that a code of conduct be drafted in the 1990s. The need for such guidelines was also discussed at an international conference convened by the Commission for Research Partnerships with Developing Countries (KFPE)<sup>2</sup> in 1996. The latter led to eleven *Principles for Research in Partnerships*, which were first published in 1998 (KFPE 1998). In 2012, the KFPE reformulated the research partnership principles and added seven questions (Stöckli et al. 2012). Over time, these principles became one of the most popular tools for shaping the global development research schemes among various science funders. While the eleven principles support the process of establishing productive North-South research partnerships by building mutual trust, learning and ownership, the seven questions point to factors that hinder or enable partnerships in different contexts. For example, the trio of innovative re-

<sup>2</sup> [www.kfpe.ch](http://www.kfpe.ch)



**FIGURE 1:** Dynamic between the three basic but conflicting goals of research partnerships: capacity, impact and research (Wiesmann et al. 2014).

search, capacity development and societal impact often forms the basis for goal-orientation of partnership-based research (figure 1). The assumption is that high-quality research results in greater relevancy and capacity development. However, practical experience and theoretical considerations suggest that these three goals often conflict. The KFPE guidelines offer options for managing conflicting goals and applying the eleven principles based on the complexity of the collaboration.

## Gathering evidence

### How do research institutions benefit from partnerships?

The authors of this research article in director positions were consulted in order to gain insight on 1. how research institutions in LMICs can thrive; 2. the “dos” and “don’ts” of research partnerships; and 3. the perceived value of the KFPE principles. To address the first question, the main features of the five South research institutions, headed by our co-authors in three African and two Asian countries, were compared: the Centre Suisse de Recherches Scientifiques en Côte d’Ivoire (CSRS) in Adiopodoumé near Abidjan in Côte d’Ivoire; the Ifakara Health Institute (IHI) based in Ifakara, Dar es Salaam and Bagamoyo in Tanzania; the Nepal Centre for Contemporary Research (NCCR) in Kathmandu, Nepal; the Centre for Training and Integrated Research in ASAL Development (CETRAD) in Nanyuki, Kenya; the Centre Asiatique de Recherche sur l’Eau (CARE) in Ho Chi Minh, Vietnam (table 1, p. 146).<sup>3</sup> Most of these institutes have in common a long institutional history and have developed different strengths, core functions and struc-

tural features over time. Each institution has had a measurable impact both at the national and regional level and was built on long-term transnational collaborations, programmes and support (Bonfoh et al. 2011, Upreti et al. 2012). All of them serve academically-oriented research that generates transformative knowledge and evidence-based policy dialogue. Most of the institutions were built based on public-private partnerships, which affords them greater freedom and speed in terms of processes than do purely public structures. Most are integrated in international networks and receive core funding or overhead from the national governments. Differences between the institutes include their size and research strategies (table 1).

We asked the authors representing both South (outlined above) and three Swiss research institutions – Centre for Development and Environment (CDE), University of Bern, the Cooperation & Development Center, EPFL, and the Swiss Tropical and Public Health Institute (Swiss TPH) – to complete a questionnaire on good partnership practices.<sup>4</sup> Each author described up to three partnerships that they viewed as most beneficial to their own institution’s growth. The seven respondents described 21 partnerships they perceived as beneficial and 15 partnerships they did not.

Partnerships that provided access to new key features, namely funding, various technologies, areas and/or types of research, knowledge, stakeholders and channels of dissemination were perceived as the most beneficial. Partnerships that allowed for post-graduate training and student exchanges were also seen as highly valuable. Historical long-term partnerships were elaborated on extensively, owing to the lasting and profound mutual influence at all institutional levels.<sup>5</sup> These included the CETRAD’s collaboration with CDE and the partnerships between Swiss TPH and CSRS and IHI, respectively, all of which were established decades ago.

Funding sources for those partnership projects consisted of competitive funding, official development assistance, bilateral funding arrangements, core funding, consortium participation and mixed support. All of the partners described as beneficial were recognized for abiding by KFPE or equivalent guidelines for partnership and research fairness either fully (n=17) or in part (n=4), and almost all the resulting partnerships had continued beyond the initial collaborative project. Of those partners perceived as least beneficial, most did not seem to follow any of the partnership guidelines (n=10). Here, work only continued with four of the partners beyond the initial project. The main factors for failure were the perception of the partner as being controlling, monopolistic or restrictive. Non-compliance with institutional frameworks and a lack

<sup>3</sup> For a more detailed description of the five institutions see *Supplementary Material*: [www.oekom.de/supplementary-files.html#c14564](http://www.oekom.de/supplementary-files.html#c14564).

<sup>4</sup> For the questionnaire see *Supplementary Material*: [www.oekom.de/supplementary-files.html#c14564](http://www.oekom.de/supplementary-files.html#c14564).

<sup>5</sup> The following two statements are exemplary for the answers: Boniface Kiteme, Director CETRAD: “CETRAD collaboration with CDE is historical and has therefore evolved over close to four decades [...] This long term collaboration has enabled CETRAD to grow her own research infrastructure and administration capacity in terms of technical and professional human

resources, institutional network and visibility, integrative methods, approaches and tools for collaborative research, integrated data/information base and broad topical and practical competences in research-policy interfacing”. Jürg Utzinger, Director Swiss TPH: “It’s as simple as that, without the partnership with IHI, going back to the 1950s, Swiss TPH would not be what we are today. We [Swiss TPH] have a track record in tropical medicine, parasitology, public and environmental health, etc.; this track record has been established – over decades – by having access to data, human resources and infrastructure”.

**TABLE 1:** Structural and strategic key features for successful southern research institutions (\* average figures from 2016 to 2018).

CARE: Centre Asiatique de Recherche sur l'Eau (Ho Chi Minh, Vietnam); CETRAD: Centre for Training and Integrated Research in ASAL Development (Nanyuki, Kenya); CSRS: Centre Suisse de Recherches Scientifiques en Côte d'Ivoire (Adiopodoumé, Côte d'Ivoire); IHI: Ifakara Health Institute (Ifakara, Dar es Salaam and Bagamoyo, Tanzania); NCCR: Nepal Centre for Contemporary Research (Kathmandu, Nepal).

KEY FEATURES	CSRS	IHI	NCCR	CETRAD	CARE
year of inception	1951	1957	2000, as local office of the Swiss National Centre of Competence in Research North-South with official inception in 2012	2002, after almost 40 years of collaborative bilateral research	2012
number of staff	170 researchers, 100 support staff	140 researchers, 275 support staff	13 researchers, 6 support staff	5 researchers, 6 support staff, pool of 130 ad-hoc support persons	36 researchers, 10 support staff
research strategy	broad portfolio of activities, built around 8 research foci	broad portfolio of health-related activities, built around 3 departments	4 areas of research	focus on water/land resources and agrarian transformation	focus on water resources
partnership arrangement	public-private	public-private	public-private	public-private	public
core funding	30% of annual turn-around	15% of annual turn-around	no core funding but 6–10% overhead	none since 2012	€ 480,000 per year
funding budget	€ 2.8 million per year*	€ 13–14 million per year	€ 175,000–800,000 per year	€ 1.3 million per year	€ 1.8 million for 2012–2017
inter- and trans-disciplinary research	yes	yes	yes	yes	yes
autonomy	yes	yes	yes	yes	yes
integrated in international networks	yes	yes	weak link only	yes	yes
adhering to 11 KFPE principles	yes	yes	yes	yes	yes

of alignment with priorities as well as a lack of will and funding by one or both partners were also among the main obstacles for forming and maintaining research partnerships. In addition, insufficient mentoring and supervision, quality limitation, too small initial joint projects and administrative issues were mentioned. Also here, different funders and funding strategies were stated, most notably, competitive research funding, official development assistance and private sector funding.

Based on the respondents' answers, good partnership practices rely on building mutual trust, implementing joint decision-making, co-establishing the research agenda and transparency. In addition, mutual interest and capacity building, equitable management of resources, expectations and ownership, as well as having a long-term plan were perceived important. The main "don'ts" were unequal sharing of benefits and information, unilateral decision-making and a lack of mutual trust, clarity, communication and common interests. Biased behaviour and disrespect was further mentioned as a major strain to a long-lasting partnership, as well as lack of mutual expertise and contextual knowledge. Unilateral decision-making was effectively a main explanatory factor for feeling exploited, which negatively impacted partnerships' stability and duration.

Furthermore, the authors ranked each of the eleven KFPE principles according to importance (see *Supplementary Material*).

Most of the principles were deemed "very important" or "important" by the majority of respondents, while none of the principles were perceived as unimportant. "Joint agenda setting" was the most highly valued principle. It is crucial to note that the survey respondents both from North and South institutions all valued and adhered to the general partnership principles. Compliance with these principles in combination with available funds and common interests formed the basis for the success of North-South and other partnerships. The starting point for founding a relationship of trust is prioritizing joint agenda setting and avoiding unilateral decision-making. Based on qualitative information gathered for this article, we developed our set of 13 key recommendations on how to leverage research partnerships to advance the *2030 Agenda* (box 2).

### Evolution of partnerships in the *2030 Agenda*

The *2030 Agenda* reflects the view that partnerships are more essential than ever, dedicating *SDG 17* to *Strengthening the means of implementation and revitalizing the global partnership for sustainable development*. Enhancing North-South, South-South and triangular cooperation is specifically mentioned in targets *SDG 17.6* and *17.9*. Moreover, the *2030 Agenda* specifically encourages multisector cooperation as the targets established under each *SDG* rely on coordinated action from different sectors.



### BOX 2: Key recommendations to advance the 2030 Agenda by means of research partnerships

The following recommendations were derived from a survey of the leaders of research institutions, a review of the life science and biomedical research literature and the synthesis of the main conclusions drawn during recent initiatives, meetings and research related to research partnerships and the 2030 Agenda.

#### Evolve the concept of partnerships by:

1. Implementing good partnership practice.
2. Creating more empirical evidence on the effectiveness of a type of collaboration vs. project.
3. Research and innovation to enhance partnership framework and performance.

#### Move towards transformative research by:

4. Designing research that is solution-oriented.
5. Re-evaluating the current research assessment and reward systems.
6. As a funder, demanding a proof of good partnership practice when assessing research.
7. As a funder, adapting their assessment procedures.
8. As a funder, supporting partnership matching.

#### Adapt to a new level of collaborating within the sustainable development community by:

9. Investing more into transdisciplinary, transnational and transformative research.
10. Engaging the civil society as equal partner.
11. Engaging in multisector partnerships.
12. Including relevant stakeholders from the beginning.
13. As an academic/research institution, adapting their governance system and curricula.
14. Complementing and synthesizing existing knowledge.

### Partnerships for sustainable development

The concept of multisector cooperation indeed permeates most areas of the 2030 Agenda, as reflected for instance in the life science and biomedical research literature published since 2016. A systematic review<sup>6</sup> revealed that of 98 articles 44 expressed the need for multi-, inter- or cross-sector collaboration. An additional 14 articles emphasized the need for increased involvement from the private sector, citing technical knowledge, core business competency and investment as being among the main benefits (Roehrich et al. 2014). Yet, empirical evidence revealed mixed results on the effectiveness of public-private partnerships as well as other forms of partnerships, suggesting that science should gain more empirical evidence on matching a given type of collaboration to the characteristics of a research/policy project (Roehrich et al. 2014, Pattberg and Widerberg 2016). A need for more involvement was also expressed for the civil society (in eight articles) and academia (in six articles). Smith et al. (2016) call for providing civil society with more decision-making power within the 2030 Agenda, owing

to its importance in advocacy, accountability systems and monitoring (Mendis 2017). As a source of expertise in SDG research and education, playing a key role in mediating and leading multisector partnerships was recommended for academic/research institutions. While scientific research is expected to provide policy option scenarios for negotiations that will reveal the possibilities and probabilities of transformative pathways, governments should ensure that academic institutions are systematically involved in discussions relative to SDGs (Rabbani et al. 2016, El-Jardali et al. 2018). Additionally, it was recommended that universities adapt their curricula based on sustainable development needs in order to address societal challenges (Clifford and Zaman 2016). Based on the findings from this literature review, recommendations 2 and 10 to 13, were identified and included in our set of key recommendations on how to leverage the 2030 Agenda (box 2).

### Efforts for advancing research partnerships in the SDG era

As transdisciplinary, transnational research partnerships (TTRP), multisector approaches are essential for advancing the 2030 Agenda by allowing for the combination of different skill sets, resource pooling and mutual learning. They also face common challenges, including inefficient data sharing, unequal distribution of information and funding and divergent priorities. A recent publication and two key events have attempted to address those challenges.

In 2015/2016, the *Research Fairness Initiative*<sup>7</sup> developed a global reporting system that can be used by research institutions, funders and the private sector to foster fair and equitable research partnerships that support the development of a locally adapted research culture and research infrastructure in LMICs.

In September 2018, a workshop was jointly conducted by UK Research and Innovation and KFPE in Dar es Salaam, Tanzania to identify what constitutes best practices in TTRPs and to integrate researchers from the Global South in a more just way. The main take-home messages for funders were that they should support good partnership practices by requiring collaboration agreements and evidence that research proposals were co-designed with partners in LMICs. Furthermore, they could support partnership matching by offering a database of research partners.<sup>8</sup> Funders should also consider adapting their assessment procedures and evaluating researchers', research infrastructures' and the target community's potential for capacity development (report in preparation).

The second event – the conference *Leveraging Research Partnerships for Global Challenges* – took place in November 2018 in Bern, Switzerland.<sup>9</sup> One of the main messages that emerged was the need for research to be more solution-oriented. Stronger integration between science and society was also suggested. To achieve this, relevant stakeholders must be brought in from the project, programme or intervention's inception. Funders can speed up the

6 For more information see *Supplementary Material*: [www.oekom.de/supplementary-files.html#c14564](http://www.oekom.de/supplementary-files.html#c14564).

7 [www.rfi.cohred.org](http://www.rfi.cohred.org)

8 For example, [www.research-partners.ch](http://www.research-partners.ch).

9 [https://naturwissenschaften.ch/organisations/kfpe/workshops\\_seminars/108828-stronger-integration-and-dialogue-between-science-and-society-for-the-sdgs](https://naturwissenschaften.ch/organisations/kfpe/workshops_seminars/108828-stronger-integration-and-dialogue-between-science-and-society-for-the-sdgs)



process by providing greater financial support to TTRPs and consortia in a long-term perspective using a programmatic approach and by investing more in transformative research.<sup>10</sup> Notably, investments in research and science in LMICs were deemed central for developing stronger science systems and capacity building at the institutional and individual levels. This, in turn, would help developing countries integrate into the international scientific community, where they will have the opportunity to become equal partners and would speed up global knowledge production and implementation. Knowledge and promising transformative solutions exist but are scattered; science and research partnerships therefore must focus on complementing and synthesizing existing knowledge and scaling up successful solutions.

Conclusions regarding the issues briefly outlined above affirm that research partnerships are currently not sufficiently effective in terms of implementing the *2030 Agenda*. Screening the recent *SDG* research literature (*Supplementary Material, Methodology*) to understand if and how these shortcomings are being addressed, we retrieved 328 titles only to discover that not a single one was dedicated to optimising the framework or performance of a research partnership (or any collaborative arrangement, in fact) created in pursuit of the *2030 Agenda*. Given the galloping technological progress in the face of the global challenges, it is somewhat surprising that greater investments have not been made in research and innovation in order to facilitate and optimise partnership framework and performance – for example, by taking better advantage of the technologies afforded by the digital era. We derived key recommendations 3 to 9 and 14 from the recent events, initiatives and research (box 2).

## Synthesis

### Potential of digital solutions to optimise *SDG* research partnerships

Global challenges have never been more pressing; on the other hand we are witnessing the dawn of a new digital era. The blockchain concept, for instance – overhyped by some and exploited by others – nevertheless holds promise in terms of bringing greater transparency and traceability to several aspects of research, such as publishing, funding and establishing research metrics. Currently, 50 percent of the world population has access to the Internet. The proportion of Internet users in LMICs has increased from eight percent to 45 percent since 2005, with the strongest growth reported in Africa. Yet, LMICs are far from reaping the maximum benefits that Internet and digitalisation have to offer. It is important to prioritise investments in digital technologies, as they have the potential to optimise the framework and performance of research partnerships and to support the emergence of an increasingly interconnected, effective and efficient global workforce for sustainable development. We believe that information access, research metric systems and match-making are three key areas that, if adapted to our needs, digitally enhanced and backed by the right stakeholders and investors, will reinforce the 14 recommendations we identified.

The EU's *Plan S* to only fund its fellows' publications in fully open access journals by 2020 follows the lead of the UK's *Wellcome Trust* that has already implemented a similar – though less

<sup>10</sup> For example, [www.ukri.org/research/global-challenges-research-fund](http://www.ukri.org/research/global-challenges-research-fund).



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**FIGURE 2:**

Researchers from the Institute of Geoecology, Centre for Desertification Study, Mongolian Academy of Science, and from the Centre for Development and Environment, University of Bern, validate land change modelling at the Gobi Desert margin, Uvurkhangai Aimag, Mongolia (*National Desertification Monitoring Programme*).



restricting – policy years ago. We welcome this change in a fundamentally flawed system where funders pay for both the research and access to research outcomes. Keeping this opportunity from countries that cannot afford access to high-quality scientific data and literature contradicts and compromises the goals set out in the *2030 Agenda*.

Equally challenging is the current assessment and reward system used in academic research. The importance of transdisciplinary, transnational and transformative research is not reflected by the conventional bibliometrics used, resulting in an academic disadvantage and lack of incentive for researchers to pursue such approaches. The research metrics therefore imposes a challenge to mobilising a sufficiently large research work force able to handle the interdependency and complexity of the *SDGs*. The difficulties researchers from LMICs face in terms of finding partners and funding options are another obstacle to establishing a large research workforce. To innovate research metrics and optimise match-making, we propose establishing an alternative digital funding platform for the research community working on the *SDGs* by taking address book-style partner institutional databases a step further and using them as a daily tool for reporting metrics, networking with peers and competing for funding. Driven by a major funder such as the EU, the *SDG* funding platform should bring together researchers, non-academic partners and other funders who may join provided that their modus operandi is founded on a set of redefined impact measures and they adhere to good partnership practices. The *SDG Partnerships Platform*<sup>11</sup> may be a good place to start.

## Conclusion

In our view, an interconnected, transnational knowledge society is one of the most powerful strategies for moving towards sustainability and rising to the most pertinent challenges of our time. To achieve this vision, equal access to information and opportunities must be assured and incentives put in place. Real and lasting change can only occur if top-down and bottom-up approaches are implemented in synergy and if we, as researchers, can change our mindset to viewing our colleagues from LMICs and collaborators from the private sector, civil society, policy and other areas as equal partners in co-creating knowledge that matters (figure 2). Significant modernisation and adaptation of the key areas, shaped by our 14 recommendations, will provide the necessary practical tools to drive this change to researchers, funders and our partners outside academia, seeking to contribute to the *2030 Agenda*.

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