

Remarks at the Global Research Council session on ‘Unleashing Science to Deliver Missions for Sustainability’

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Albert Van Jaarsveld (Director, IIASA), in summarising the joint ISC-IIASA project on the need for mission-led approaches to sustainability, has made a cogent argument for a much more systematic process for identifying where the barriers to effective progress on the existential risks of sustainability and human development can be identified and addressed. The question is: how should these be developed, funded and managed? This is a matter meriting collective action rather than traditionally siloed approaches by different funders.

Within the sustainability agenda there are obvious matters that national and domain focused funders must give priority to. But there are also many issues in which transnational and transdisciplinary action is needed. The challenge is how to do this effectively and rapidly without unnecessary duplication, without leaving critical gaps, and doing it in a truly inclusive manner reflecting the needs of the global commons rather than primarily meeting the needs of an individual country or agency. The ISC-IIASA analysis showed where that effort needs to focus both vertically and horizontally with its five themes and cross-cutting domains.

My comments are aimed at a rather frank assessment of the process needs.

Covid has illustrated many of the issues.

While the development of the Covid vaccines was a triumph of research, primarily in the private sector but on the shoulders of decades of public sector research, the variable uptake of the public health evidence into the political and public response to the pandemic reflects the crisis of science and its use in the current context. Political processes have interfered with the best use of available knowledge, and the multilateral system largely failed or made poor or slow decisions. Many governments failed through hesitancy, denial of risk assessments and putting politics ahead of national good, let alone global good. As we are well into the second year of the pandemic, we are

years from resolving the social, financial, democratic and multilateral issues the pandemic has revealed, even if we do find our way through the health challenge and the virus-versus-vaccine arms race.

Optimistically we might see that the inflection point induced by Covid could create an opportunity for accelerated progress on the very transformations needed towards sustainability. But there are strong voices also shouting for a return to pre-Covid business as usual. This is the time when some truly disruptive change in many dimensions, including in the processes of the science endeavour, will be needed if we are to shift the trajectory ahead of us.

Both climate change and Covid have exposed the need for stronger risk assessment and response processes, the critical role of science advisory systems, the need for transdisciplinarity and systems approaches, the threats of disinformation and the rise of anti-scientism, the fragile state of the multilateral system and incoherent scientific uptake into the multilateral system.

Funders are key stakeholders in determining how science is done, what science is done and indirectly how science is used. Most research agencies support relatively siloed research, often unnecessarily duplicative and too often predictable in result, most not really facing the needed solutions to the challenges of the global commons – the problems that will define our futures.

Understandably for most of you, your mandate focuses on national issues. Yet, it should be clear from the pandemic and indeed from climate change that the national self-interest is best served by a much more global and connected approach.

Of course there is much science needed of a detailed nature and specific to the country or society and context, and that is essential to fund. But the reality is that the very research needed to combat the challenges to the global commons is not as well identified or supported by funders as it needs to be, because there is no consensual process to agree on what is needed and how it should be funded. Instead, funders are duplicative and gaps are left.

Further outside the G20 group of countries, funds for research are limited by either the very state and/or size of the economies, yet much knowledge and many key perspectives lie beyond the G20. An approach driven solely by G20 countries or some of them fails the test of inclusivity and acceptability and will be confounded by geopolitics. And in general, collaborative international research has been the first to suffer in austerity or is a cover for self-interested diplomacy.

We need to think about why we have tended to fail to address many wicked problems. There are obvious failures of political multilateralism, and that is true also of science except when G20 countries want to invest in big science. These include a lack of coordinated strategic analysis to

determine priorities, critical work often limited or slowed by resource limitations, and sometimes promotion of scientific hubris over collaboration.

The fundamental needs for impactful progress on many of the challenges include a greater investment in a range of social sciences, taking a genuine approach to transdisciplinary research and promoting systems-based approaches.

This word ‘transdisciplinary’ is frequently misunderstood. It is not simply getting scientists across disciplines to combine their findings. It is a very different modality of thinking and research. It means *ab initio* framing the question through multiple lenses simultaneously and generally that means from the social sciences, normative humanities and the natural sciences. It means engaging stakeholders from the outset. The research actually emerges out of that interaction between framers and stakeholders. Such research is very different, not linear in the nature of most traditional research, but it is likely the only way we will make real progress with policy makers and citizens on many of the issues we now face. The OECD recently noted that such an approach is critical to progress on so-called wicked problems – that is, the issues of the global commons.

And time is of the essence.

The hardest money for the science system to find is the glue money to strategize, coordinate and to plan. International scientific organisations themselves face funding issues. Yet that glue money is critical. In contrast agencies have found ways to fund big science infrastructure. Provided priorities are set and it is agreed who will take responsibility for what funding solutions are possible, without creating massive administrative infrastructures. But there is an urgency for the key stakeholders and experts both in knowledge production and translation to agree and continue to examine what critical knowledge is needed to move ahead.

The Independent Panel reviewing the WHO’s response to Covid highlighted issues that justified an independent unit with political oversight and technical capacity just to deal with pandemics. Extrapolate from this to the raft of issues confronting the global commons. What we need is the world’s best thinkers – not just researchers – from across the globe put in a position where they can come together to identify both the issues where a collective scientific approach is urgently needed, to define what are the rate limiting knowledge gaps and technologies, and to support transdisciplinary and systems approaches. For it is only through such approaches that we can expect to reach adoption and uptake across the world.

A logical approach would be that a partnership is formed between ISC representing the knowledge disciplines globally, the broad mix of major science funders, both national and philanthropic, and key policy players on the multilateral system. The goal would be to agree on a process to identify

the rate limiting gaps in our knowledge and its application, and to suggest or provide mechanisms to fund it. There are multiple ways that could be achieved, but critically it must be collaborative and inclusive. Such a process would need to be continuous and iterative as knowledge and needs evolve.

We are less than a generation away from global warming, which sadly will almost certainly be well in excess of 1.5°C. In the consultations we have been leading to inform the ISC-led project on the longer term consequences of Covid, it has become increasingly clear that before that terrible milestone is reached, there are many other real risks to the human condition, political and social, which in turn will impede progress of the sustainability agenda. We must collectively take a much more holistic approach that has intent, focus, energy and urgency. It is time to be disruptive – the present system cannot achieve what is needed fast enough. We need to do things differently and with imagination and collaboration.

ISC is inviting you to join in a multi-stakeholder 18-month programme to find a solution to driving ahead on the critical issues of the global commons that the science community must address.