

Opening Address to the Global Forum of Funders

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In 2019, I opened your meeting in Washington by pointing out that individualistic research approaches to addressing the underlying challenges to the global commons would not be effective or timely.

Two years on, that assessment may have been an understatement. The development of the Covid vaccines has been a triumph of research – primarily in the private sector, though on the shoulders of decades of public sector research – however, the variable uptake of public health evidence into the political and public response to the pandemic reflects variable perceptions of the use of science. Political processes have interfered with the best use of available knowledge; there have been markedly variable individual responses; and the multilateral system has largely failed or made poor decisions. Many governments failed through hesitancy, denial, and putting politics ahead of national good, let alone global good. As we head into the second year of the epidemic, we are years from resolving the social, financial, political and multilateral issues the pandemic has revealed, even if we do find our way through the virus-versus-vaccine arms race.

Yet, optimistically, we can see that the inflection point induced by Covid could create an opportunity for accelerated progress on many transformations needed towards sustainability. But there are also strong voices shouting for a return to a pre-Covid business-as-usual approach. The science system could easily fall into the latter category. I hope that we can all see our collective responsibility for significant change.

Consider some of the issues that Covid has exposed:

- The need for stronger risk assessment processes across governments
- The critical role of science advisory systems
- The need for greater integration of social science, and the importance of transdisciplinarity and of systems approaches
- The threats of disinformation and the rise of anti-scientism
- The dangers of nationalism and geostrategic tension
- The fragile state of the multilateral system and the inadequacies of international law
- Incoherent scientific uptake into the multilateral system

The list would be no different if we looked at the challenges of sustainability. So why do I start my remarks here?

Ultimately funders, especially national funders, are key stakeholders in determining how science is done, what science is done and indirectly how science is used. Thus, your decisions on whether to return to business-as-usual or to find an innovative path ahead will be critical in how – and whether – we can address the issues of the global commons.

Funders create many of the incentives that scientists respond to. But are the current approaches well suited for what we now face? Funders largely support disciplinary research, which is often duplicative and predictable in result, rather than intellectual innovation and risk. Most are not really focused on finding the needed solutions to the challenges of the global commons – the problems that will define our futures. Indeed for many, your mandate focuses solely on national issues, yet the pandemic, climate change and many other existential issues demonstrate that national self-interest is best served by a more global and connected approach. Of course, there is a need for science of a detailed nature and that is specific to the country, society and context – and that is essential to be funded. But there is an obvious gap that needs new thinking, new approaches and new mechanisms.

Imagine you are looking from the outside, from beyond our planet. You would see lots of divided and competitive activity by scientists and nations, not really creating strategically informed collaborations that are needed to avoid the inevitable and predictable tragedies of the commons – resource depletion, environmental catastrophe, changes in the very nature of human existence being created through extraordinary technological development, and more. You would surely say that if humans wanted to collectively survive, they would see the need to work together, identify and agree on the key bits of knowledge really needed, obtain that knowledge through collective effort, and make sure that there was clear understanding of how to use that knowledge.

Perhaps that is a utopian vignette. But the reality is that the very research needed is not systematically identified or supported. Most funders use bottom up approaches often driven by institutional and individual incentives, and very linear approaches with minimal strategic analysis. There are exceptions such as Wellcome LEAP and DARPA. Outside the G20 group of countries, funds for research are limited by the very nature and size of the economies, yet much knowledge and many key and diverse perspectives lie beyond. And with few exceptions, the level of coordination in research funding is limited, in part reflecting the realities of how your mandates create specific agendas. In general, the collaborative international research has been the first to suffer in austerity, and we have seen in recent months quite a reduction in funds for such research.

I understand these issues and your challenges, but surely the urgency is clear. We need those who have the capacity to change how science operates and what it delivers to work together and co-design new ways of working on the sustainability agenda. Put simply, the current model is not working for the global good and therefore cannot ultimately be for the national good. Collectively, we cannot be complacent. There is an urgency to reset the focus of science of global need, to engage the scientific community and other stakeholders, and agree on the core agenda for knowledge acquisition and application if we are to save our biotic earth and its inhabitants.

The formal multilateral system has not done so well. Indeed it is now in a very weak position, reflecting the reality that multilateralism only exists at the pleasure of nation states and that we are now in a very nationalistic epoch. Neither the UN General Assembly or Security Council has even

met over Covid. The independent panel has highlighted ongoing issues at the WHO and the need for real change. In such a context we must accelerate track 2 approaches. A new multilateral system will require leadership and participation from beyond governments alone. But governments and science funders must be part of it; they must reflect on their failures to date to effectively address the global commons issues and be open to change.

We need to think about why we have tended to fail to address many wicked problems. There are obvious failures of multilateralism, but even within science there have been issues. These include a lack of strategic analysis to determine priorities, often work limited by resource limitations, or a promotion of competition over collaboration. Academic institutions contribute enormously to these issues, but so too do you as funders.

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

Of course, there remains an enormous need in specific areas for scientific breakthroughs and technology employment. Take food production – we likely have much of the biological knowledge and many of the technologies to reduce the impact on biodiversity, reduce greenhouse gas emissions, and improve human health. But at the same time the social issues are enormous: how to get social license, how to link with indigenous knowledge, how to get beyond short-term market and economic restraints, how to change food supply systems and economics, and so forth. And whatever is done is not independent from every other aspect of human existence, be it transport, connectivity, energy production, our cultural being, habitation, etc, and the issues of food security vary dramatically across the global north and global south. Hence there is a need for systems- and futures-focused approaches.

There is a deeper need for quality social science to be applied: how to reform the multilateral system, how to get politicians to understand that it is in their enlightened self-interest to cooperate across borders on issues of the global commons, how to get policymakers and the public to stop

under-estimating risk, and how to deal with rampant disinformation that can impede progress on the challenges of the commons.

We need transdisciplinary research. The term ‘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 simultaneously through multiple lenses 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; it is not linear in the nature of most traditional research, but it is likely to be 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.

Funding is never unlimited, so to paraphrase Ernest Rutherford: we have little money so we have to think differently. We have to realise that time is of the essence. We need the world's best thinkers – and that’s not just scientists – irrespective of country put in a position where they can come together to identify 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 approaches. It is only through such approaches that can we 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, and the broad mix of major science funders and key players on the multilateral system. The goal would be to agree on a process to urgently define the core rate limiting gaps in our knowledge and its application, and to collectively support that in a mission-led approach. There are multiple ways that could be achieved, but critically it must be collaborative and inclusive. My colleagues from ISC and IASA will expand this conversation during this meeting. Only then can we put a brake on our accelerating path to human, social, environmental, economic and geostrategic collapse.

We are less than a generation away from a global temperature rise increasingly likely in excess of 1.5°C. In the consultations we have been doing during the ISC-led project on the longer-term consequences of Covid, it has become increasingly clear that even before that terrible milestone is reached, there are many other real political and social risks to the human condition, which in turn will impede progress of the sustainability agenda. Let us not forget that the SDGs do not just encompass environmental sustainability; they encompass every component of the human, environmental, economic and political condition. As a science community – and you are part of that community – we must collectively take a much more holistic approach that has intent, focus, energy and urgency. It is time to do things differently and with imagination, collaboration and commitment.