



COVID-19 recovery: Towards a just and sustainable society

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Professor Köberl, Albert van Jaarsveld, thank you for the honour to again join with IIASA and with the Austrian Academy of Sciences. It is 5 am in the morning here in New Zealand so hopefully, I will stay awake through this lecture. If not, it is the fault of the lecturer.

The genesis of this lecture is in the work ISC and IIASA have collaborated on over the past 12 months to explore how science can inform better pathways to a more sustainable post-Covid world. The existential crisis of Covid has important lessons for the other existential crises of climate change, biodiversity loss, resource exhaustion, loss of social cohesion and human tragedy due to conflict and poverty that we face.

The partnership between IIASA and ISC involved many experts to explore the opportunities that exist if we are willing to recognize that a return to business as usual is unacceptable, but that to avoid doing so requires a cohesive effort between policy makers, natural and social scientists, the private sector and civil society. The challenge is how to achieve that cohesive effort in the face of many centrifugal forces.

There is a growing and manifest tension between those who see the inflection point created by Covid as creating an opportunity for transformation and those who just want to go back to business as usual.

But before I enter on that discussion, let me first say a few words about the ISC, of which I am President-Elect. The Council was formed in 2018 by the merger of the International Council of Science (ICSU) and the International Social Science Council. But it is much more than just the sum of its two precursors. It has already evolved to be a much more outward looking organization committed to its role as the global voice of science, combining the natural, health, data and social sciences through its membership comprised of the national academies, scientific unions, social science associations and other scientific organizations. It heads the major group advising the UN on science and technology. Both IIASA and the Austrian Academy are well engaged members of the Council.

Covid highlights our challenge: on one hand, science has become much more critical to both national and global decision making than ever before; on the other, it has highlighted multiple problems at the science-politics interface at both national and multilateral levels. It demonstrates the challenge of nationalism in the face of a global crisis. It highlights the consequences of denial of evidence-informed assessment of high impact risks. Despite scientific warnings, most countries – and indeed the international community – were not well prepared for the inevitability of a viral pandemic. We have seen anti-scientism move from a marginalized activity to one that is embedded in partisan politics and hyper-fueled by the digital milieu and its disinformation engines. Anti-vaccine, climate change denial, anti-scientism, nationalism and individualism all compete against the need for collective approaches to evidence-informed understandings and actions on the existential threats we face.

But before I proceed, let me acknowledge those who have contributed to this project. It has been an enormous effort, particularly by the authors of the [three reports and two summaries](#), supported by many experts. It had a most distinguished and active advisory board chaired by Mary Robinson. I particularly want to acknowledge the leadership teams of both IIASA and ISC for driving this project forward.

I am caught in a dilemma – I could spend the next 30 minutes just listing the broad range of recommendations and conclusions from these three reports, or focus on a few issues that I feel merit particular consideration. I have chosen the latter and will primarily address the changing nature of science, the use of evidence and risk assessment in public policy and, importantly given we are in Vienna, diplomatic dimensions.

With this audience I need say nothing about the urgency and timeliness of using the inflection point created by Covid to accelerate thinking and action on expediting progress towards sustainability. Early in the pandemic, the mantra ‘build back better’ was used frequently. But as the pandemic extends into its second and by no means last year, the enthusiasm for change is at risk of being replaced by a wish to return to ‘business as usual’.

The pressures for transformation were there before the virus appeared: rapid technological change, demographic change, progressive environmental degradation, rising concerns about mental health and threats to social cohesion, growing inequalities and persistent inequities, a fractured multilateral system, the need to rethink human development, and rapidly changing relationships between citizens and their government. Covid highlighted these pressures. It has shown how vulnerable we are. Between the explosive crisis of the pandemic and the rapid crisis of climate change, every asset that we value, be it human, social, cultural, ecological or biological, is at risk.

Every domain of science contributes to our understanding; the real challenge is how to convert these to meaningful change towards a more favourable set of outcomes than those we now face.

The synthesis report and the associated papers reflect on a range of transformations that are within reach. The primary challenge is how to take what we now know to find a path towards the collective action that is needed. How do we move nations to understand that collective actions will actually promote their own interests far more effectively than nationalistic and individual action? This may sound utopian but it is the fundamental challenge of the 21st century.

So with that background let me use some of the experiences with Covid over the past year to fuel discussion and put the IIASA-ISC project's conclusions in context.

Surely the core obligation of all governance is to protect its assets. In the case of governments this includes human, social, cultural, environmental and economic assets. The Sendai process and the associated framework agreement emphasized the need for the government to have proper risk assessment processes across the many domains of risk, from natural hazards to biological risks. Yet few countries do it systematically, and where it is done a large number of cognitive biases lead to risks often being diminished or ignored. Covid highlights this – pandemic warnings had been loud and clear from the expert community – yet few countries outside those that had experienced SARS had taken heed and were prepared.

The proper use of science is critical in decision making. But while that is easy to say, it has many nuances. What does it mean? Most countries do not have effective and structured ways of bringing science into public policy – most had to resort to ad hoc processes to deal with the pandemic. It has been disappointing that as yet the lessons from Covid are not extending to the broader aspects of scientific input into policy making.

But, ultimately, policy is never made on scientific advice alone. Quite properly, policy making must consider other more values-based factors. Science communities must avoid hubris and there is a delicate balance between brokerage – that is, the transmission of what we know and what we don't know – and the need for advocacy. And when an advocacy approach is taken by the scientific community, it must be based on robust evidence and analysis, not simply on bias.

And we have another challenge – how often in the pandemic did we hear the politicians cynically proclaim that “we are just following the science”. Often they were using that to justify decisions which were clearly political, and ultimately such misuse of science undermines trust in it.

Political self-interest is the enemy of addressing the global commons. We saw that play out in many ways during the pandemic. Firstly in the early days of the pandemic, in how the major players acted,

and in how the WHO operated and made its decisions. Now we are seeing it in quite egregious decisions being made over vaccine distribution. The multilateral system is not healthy and I will expand on this later in this talk.

But science must also evolve to be more system focused and transdisciplinary, and it must always work to be trustworthy. Disinformation and anti-scientism can severely undermine progress. Both were emerging long before Covid as real threats, whether by state or non-state actors. Covid has sadly catalyzed this linkage between science and political ideology and severely compromised progress on tackling the pandemic through its impact on decision making.

If I remove Covid from the title of this slide and replace it with climate change or biodiversity loss or any other aspect of the sustainability agenda, the list of challenges does not change – nor indeed do the actors. The recommendations of the IIASA-ISC project see the same issues highlighted.

We have a complex interplay between actors in addressing sustainability. Many people, including scientists and governments, still silo their activities and thinking. The marine environment SDG 14 is still thought about almost entirely separately from say SDG 3 human health. Siloed thinking bedevils progress. Perhaps that is inevitable given the complexity of the SDGs, which at least represent some attempt to get beyond siloed thinking by being holistic in their ambitions. But with 169 targets, some of which are very precise and yet others rather utopian, and many in conflict with each other, they are perhaps overwhelming for policy makers. This complexity has impeded progress.

Systems thinking such as that provided by IIASA in much of their work and by ISC in their SDG interactions work is needed. It is thus not surprising that the [Global Sustainable Development Report](#), the [World in 2050 report](#) to which IIASA contributed so much, and the reports from the current project have all converged and point to a need for a much more integrated approach.

One of the things we have not done well either in the policy community or in the science community is properly discuss trade-offs. Advocates often think only about singular actions, but the

consequences of any action nearly always has broader consequences Addressing climate change requires trade-offs in the ways lives are lived, economies flourish and land is used. But actions are needed at every level of society from individuals to governments. Getting action is more than simply finding scientific or technical solutions. Concepts such as co-design and post-normal science become important. Behavioral sciences – the study of values and understanding biases and decision processes – will be critical in the path ahead.

I was pleased to see the OECD recently point to the importance of transdisciplinarity both in policy and in research. Transdisciplinarity is quite distinct from multidisciplinarity and interdisciplinarity. With transdisciplinarity, we are talking about two core characteristics: firstly, framing the question from the outset from multiple perspectives, and secondly, ensuring stakeholder engagement from the outset. Promoting transdisciplinarity into academia and research is a challenge that must be addressed.

In most institutions the organization of academia is discipline based, and research funding focuses on disciplinary excellence, not impact. Academic promotion is too often focused on bibliometrics which in turn overwhelmingly favours disciplinary depth, not transdisciplinarity.

Finding ways to get beyond the 20th century science system is difficult, but we need transdisciplinary approaches to address the wicked problems. But such developments must not be at the expense of undermining disciplinary depth and excellence. Solutions to so many of the issues on the agenda require mission focused activity by scientists and technologists across multiple disciplines working together. Thus the 21st century science system must support depth in detail at a disciplinary level but also transversal integration of knowledge in ways that can impact the broader issues.

Policy making in every country is remarkably siloed, and getting integrated thinking into public policy is a challenge in every jurisdiction.

Decisions and actions that will promote sustainability are made by governments, local authorities, businesses and individuals. But time preferences push decision making towards the short-term rather than the long term. This is particularly so for politicians.

Just today my team published a [report](#)¹ on why policy makers resist preparing for high-impact risks. Fundamentally we have a set of biases that allow us collectively to underestimate future risks. Beyond these biases, there are incentives in every political system that compound such resistance. Few countries use risk assessment well and there is an increasing commentary on the role of accountability avoidance, of cognitive biases and rational ignorance that lead to both policy and political resistance to evidence-informed risk analysis. We saw this in Covid, and we see it in climate change.

The IIASA-ISC report strongly makes points about science advice which will be central to overcoming some of these human and institutional issues. Few countries have systems that ensure the appropriate insertion of science into policy in the right time. Of course, science alone does not make policy. Ultimately policy making is about making choices between different options, including the option of doing nothing. And those choices affect different stakeholders in different ways, with both predictable and unpredictable spillover effects. What science can do is inform what the evidence base is, what the options are and the implications of each option. It is for the policy community and the political community to consider the broader values-based dimensions of each option which range from affordability to diplomatic considerations as well as public opinion.

Science advice has multiple components and requires an ecosystem firstly of knowledge generators such as universities and research centres. Secondly, it requires pluralistic evidence synthesis; academies can be well positioned to lead on this. But thirdly, there is the challenge of knowledge brokerage – the business of transmitting that evidence synthesis to the policy maker and the needs of the policy maker to the scientific community. This is a different set of skills, requiring an

¹ Gluckman P and Bardsley A (2021) Uncertain but inevitable: The expert-policy-political nexus and high-impact risks. Auckland: Kōi Tū: The Centre for Informed Futures. DOI: 10.17608/k6.auckland.14399654

understanding of both the cultures and languages of science and policy and the skills of acting as a broker.

The anglophone countries use the concept of an adviser to the prime minister, ministers and senior officials to ensure brokerage. Much of that interaction is informal to make sure the policy maker or the politicians understand what is being suggested. This is not the same process as having formal reports alone; it is a form of diplomacy and relies on trust.

There are several other ways of ensuring both evidence synthesis and brokerage, but whatever the system all countries need science advisory systems that function well. As we have seen in Covid, many were caught short and had to put in place ad hoc solutions. Will the opportunity be taken here to turn these experiences into more permanent structures? Sadly, I see little evidence of this happening.

If we look honestly at either Covid or climate change, the multilateral system has been less than fully effective. It is extraordinary that given the most immediate risk to humanity of the last 80 years, neither the UN General Assembly nor the Security Council has met to discuss the pandemic and work to stop geostrategic and nationalistic interference in seeking optimal outcomes.

And when we look at every aspect of the sustainability agenda and the politics of the global responses to climate change, marine degradation, biodiversity loss and many other dimensions where we need global cooperation, it is clear that citizens across the world are being let down by the multilateral processes. Is this the time to seriously rethink the multilateral system, as difficult as it may be, in an unstable multipolar world?

The UN itself has no effective input of science into its decision making through its central agencies. Some of the UN family of agencies, especially the technical agencies, have established effective processes but they are weak in the policy focused agencies. Groups such as the ten-member group to the technology facilitation mechanism and the expert group preparing the Global Sustainability Development Report have but variable influence. The experimental and very transient science

advisory board to the Secretary-General failed for many reasons: it was not funded, and it reported in Paris not New York and had no effective mandate. Yet, science is critical to virtually every issue the UN must consider. We need a new solution. My preference would be an formal engagement of the UN major group on science and technology as the brokerage system between the UN and the science community.

But the key decisions in the multilateral sphere are made not by scientists, but largely by diplomats. The importance of a closer relationship between science and diplomacy is clear. The term science diplomacy is often used without clarity as to what it means. It is more than scientific cooperation across jurisdictional borders; it is about employing science to promote diplomatic goals. And just as policy makers have not understood the importance of science in virtually every decision they make, so too generally, diplomats have failed to understand how critical scientific advice and input is to enhancing their role.

The matters we are discussing here involve recognizing that to address the issues of global commons requires nation states to understand that avoiding a tragedy of the commons is a form of enlightened self-interest.

I am pleased to say that an increasing number of foreign ministries recognize the importance of science advice being embedded within them. The UK, Japan, Netherlands and USA are among countries that now have science advisors within their foreign ministries, not just to promote the innovation economy but to engage in the very issues we are discussing.

Some years ago an informal grouping – the Foreign Ministries Science and Technology Advice Network (FMSTAN) – was formed under INGSA. It now has some 30 or more countries involved, including Austria. It has been highly active over Covid. Such informal networks will become critically important especially with such a fractured formal multilateral system.

We face a number of potential existential threats, many encompassed within the reports being discussed today. In each one of these we need a partnership between science, society, and national

and international policy communities. Risk assessment and management, anticipatory policy making, and transdisciplinary and systems focused science are all needed. All need a more science and technology aware engagement by the diplomatic community.

I have not had time to consider the broader economic, social and other dimensions covered in the reports. The reports raise important issues. They require both the science community and the policy community to reflect on why progress has been slow. My intent has been to highlight where some of the roadblocks lie and how they might be removed.

I hope the deeper thinking that both informed them and might flow from them, can help lead to change. The role of IIASA in systems thinking and analysis is critical. As President-Elect of ISC I can confirm that we are committed to ensuring the science community's central role in addressing these issues and to promoting the engagement of the science community globally and nationally.

Thank you.