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SESSION 5

A conversation on policy settings for risk and resilience

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& Emeritus Professor Kym Anderson AC⁴

Moderator: The Hon John Anderson AC

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Moderator: John Anderson

Ladies and gentlemen, it's my very happy task to loosely conduct a free-flowing conversation with four of our wonderful guest speakers, to whom I say: 'Thank you, Éliane, Cary, Wendy and Kym, for being here'.

I will open by asking a generic question of all four of you. First, though, some background. Talking with many of the younger people in the audience here today, I find they have enjoyed what they have heard and seen so far. But we are confronted, are we not, with a tsunami of difficult issues, and it would be very easy to say, 'There are so many of them; they look so overwhelming; you need only one or two to go wrong and it's all going to come falling down'. My first response would be: 'Remember what you have learned from history. It's not the first time that there have been massive challenges before humanity at large, or before groups of humanity, and with the right leadership in all sorts of fields we have made enormous progress in the past, and particularly in the area we have been talking about. Despite our worry about the declining outcomes in food security and nutrition levels for people, we ought not to forget that proportionately the numbers were far worse 50 years ago. So let's not talk ourselves down, all the time.'

Now here is my generic question to the panel: *From your talk and from your area of expertise and your knowledge of your field, where are the areas in which up-and-coming young people, who want to make a difference, can have the greatest impact? Nobody can take on all the issues at once: you've got to start chunk by chunk.*



Kym Anderson

Well, being an economist, I would sit down and try and work out the benefit–cost ratios of alternative possibilities! I don't have the answer to your question, John, but I would say to those of you in the audience: 'Be enthusiastic about what you do'. There are so many challenges out there, and from a scientist's point of view they are opportunities – opportunities to solve, or at least to help work towards solutions to those challenges. So, pick up the challenge that really 'turns you on'; get into the science of it; make use of your mentors around here and elsewhere; and 'go for it!'.

Moderator: John Anderson

As a quick follow-on from that, in your talk you touched on something else that is very important: the geopolitics. We also need political leadership, don't we? You made the really important point – which is a bit counterintuitive – that profits and global trade are important to lifting people out of poverty. Now, that doesn't quite fit with the zeitgeist which is very wary of profits and thinks

globalisation has been terrible. But you have put a different case, and I think that's important. And it points to the need for political leadership. One young person said to me, 'I'd really love to make a political difference, but it's hopeless. Where do you start?'. It does matter, doesn't it?

Kym Anderson

Yes. Some of you here from ANU may know Professor Anthea Roberts in ANU's School of Regulation and Global Governance. She published a book in 2021 with Nicolas Lamp of the Faculty of Law at Queen's University in Ontario, Canada, called *The Six Faces of Globalization*. It's a fabulous read that gives a sense of the various anti-globalisation pressures. They set up a Rubik's Cube. On the top face are the people like me that say, 'Globalisation is good; it boosts income, wealth and health. If you redistribute that increased wealth appropriately, you also get good social and environmental outcomes.'. There are people on the bottom face, who say, 'Globalisation's bad; everybody loses. It is terrible.'. And then there are four other faces on this cube, and from them you gain four additional perspectives on why different people take alternative views about globalisation.

It's a great way to think about how the politics of international trade and globalisation work, because those four groups and the one on the bottom are the ones who are pushing the politics away from market openness.

Moderator: John Anderson

Wendy, you are five or six weeks into your role as CEO with ACIAR. Where would you see exciting opportunities, if you were a young person here listening to your talk earlier today? What would you pull out and say, 'Here's an area where you can build a real career and make a difference.'?



Wendy Umberger

I am very envious those of you earlier in your careers than I am. I actually think it's more exciting than ever to be working in this area. For instance, I think there are exciting challenges; and the way that we work together is super exciting. But I do recommend that you broaden your disciplines. Those of you with science backgrounds, say, go and learn social sciences, or business, or some other disciplines. I did my undergraduate degree in Animal Science, and I expected either to go back to the farm or to be a ruminant nutritionist. Then I heard somebody speak about markets, and the need for beef cattle producers to connect to markets – and that opened my eyes to wider fields, and eventually this new role. When you keep learning and travelling, you get to understand so much more. I was probably one of those who thought globalisation was a bad thing, before I started to understand wider issues, never imagining that would lead me to Australia.

In short, I think it is important to have an understanding of other disciplines, not necessarily by going and getting a degree, but maybe by reading. There is so much opportunity, with the Internet, to pick up journals and read. I am always reading the science journals, for instance. Scientists need to learn about social sciences, and business, and how our systems work, and so on. I think ACIAR does a relatively good job of pulling together the disciplines. We need to do a much better job and understand the broader world and what drives people. Why do people make the decisions that they do? Think about that. Don't assume you know everything and that the world we live in is the same as everywhere else. We need to understand what drives people.



Cary Fowler

I really like Wendy's response just then. I think all of you are going to face a certain question in your professional life that I have faced in mind, and I'll give you a little story about how, for once in my life, I gave the right response on the spot.

I was giving a talk one day about a certain seedbank that I was associated with, and somebody came up to me after the talk, and they were red in the face and hopping mad. They got right into my personal space, and they said, 'Well, you're doing all this work to conserve seeds, but what are you doing about pollinators?'. (I happen to be a beekeeper myself, so I do appreciate pollinators!)

You know, usually when somebody puts you in that kind of situation, you only think of the correct response two or three days later, when it's too late. But this time, maybe the only time in my life, I thought of the right answer on the spot. I looked this person in the eyes and I said, 'Nothing. I thought I would leave something for you to do.'

All of you out there that are working in a particular profession are going to face these 'what about?' issues. It's exactly what you were talking about, John. The world is big. You may tell somebody that you are doing something that you think is good and constructive, and then you get these cynical responses, such as, 'Well, yeah, but what about *this* and *that*?'. There's never a response to that.

I think the response we should have in our hearts, in our minds, is, 'I'm doing what I can do. I'm focused. I am going to try to solve my problem. I am going to put one foot in front of the other, and count on the fact that other people are doing work too'. Don't be dissuaded. If there's one big key to success in this life, I think it's being *stubborn* and just *persisting*.

Moderator: John Anderson

Éliane, you could have given up when you were young. You could have said, 'This is all too hard'. There might be people out there who are thinking that, particularly about that relationship between agriculture, food production and forestry that you talked about yesterday.

What jumps out at you as an area where we need people who can make a difference?



Éliane Ubalijoro

The reality is we live in an interconnected transdisciplinary world. What I've realised is that it is very important to find your networks, and build them into communities of practice, so you can bring those different types of expertise together. When I was 22 years old, I wanted to do so much. I was in agriculture going towards my PhD in molecular genetics, but I also thought: 'I should get a law degree and look at patent law and intellectual property; and I should go to medical school and look at the interface of One Health, ...'. I had all these ideas – and then I realised that *I can work with people from all these different disciplines!*

At CIFOR-ICRAF we harness the power of trees, but we also look at value chains that are going to allow us to build the needed, prosperous economic values that come from harnessing trees, not only for food production, for timber, for energy. How do we do that in a sustainable way?

The answer comes down to connecting the genebanks all the way through the production, the value chains, getting to the customers, and connecting in ways that have enabling policies that allow us to say, 'We can harness sustainable economies that take best of what we all can collectively bring forward'. None of us can do it alone. It's really about the power of all of us.

I have talked to many of the young people here, and you are all doing such great and very different types of work. Make sure you talk to each other and support each other. You never know when you're going to need each other.

We think about how biodiversity became such a critical issue with COVID, and really what it comes down to, as we're looking at our food systems, is that we need to bring back biodiversity so that we make sure we prevent future pandemics. And we need to restore soil health so we can bring the needed productivity to our food systems. So, learn what you're doing; bring passion to it; bring grit, because you never know how long it's going to take to get there.

I realise that on my own journey I have gone through times of deep powerlessness just because of the history of my country, Rwanda, but also times of deep hope. Even today, I think about the Kwita Izina, which is the annual Gorilla Naming Ceremony that was happening last week in Rwanda. This is an opportunity for Rwanda to connect with partners from over the world and locally that are champions of restoration, that are working to elevate green growth that is critical to rebuilding our economy by rebuilding the fabric of society, and also rebuilding our connection to biodiversity, and how biodiversity is critical to our food system – including bees.

Let's *live* our interconnectedness, and build those communities of practice from our networks. That's the power that's going to allow us to *scale* this work and accelerate it towards year 2030 protecting 30% of the planet, and also towards the net zero goals of the world.

Food is absolutely critical in this agenda, and so all the work you are doing can help us accelerate this work. None of it is too small.

Moderator: John Anderson

Cary, it strikes me that you, perhaps more than anyone else in this room, would have a global perspective on the great challenges confronting us: on the one hand, concern about emissions; on the other hand, keeping up food production. In some ways, to a layman, it looks as though there's great difficulty meshing the two.

For example, affordable cheap energy and fertilisers have been something we have taken for granted, and yet they are becoming more expensive, for all sorts of reasons – many of them related to government policies. That's making farming more difficult and it's having an impact on the affordability of food in some areas, along with the other things that we have talked about. We also know that, whether we like it or not, the consumption of coal, gas and oil continue to rise globally quite substantially, setting up even deeper challenges. Australia has a great focus on mitigation, but as a relatively minor emitter (and I say that not to diminish the problem but to highlight the fact that the surveys show the majority of Australians think Australia is responsible for between 10% and 20% of global emissions, which it isn't – and I am certainly not arguing for doing nothing) Australia's capacity to make a material difference to our future is going to be determined by what happens globally.

All that makes me question whether maybe the greatest contribution Australia can make, given our expertise in science and the plant sciences and agriculture, is to work on adaptation, and to make that knowledge widely known here and overseas, because it's going to be a key to mitigation anyway, on a global basis. I guess the question is, should we be focusing more on using our skill set in this country, where we really are amongst the top leaders, on agricultural research and extension abroad?



Cary Fowler

I thought you were going to ask me a question that would give me the opportunity to say, 'I've left something for you to do'!

One of the things that has perplexed me and concerned me about climate mitigation and adaptation is the divisions within the community on those issues. I have encountered people who work on the mitigation side looking quite askance at those of us who work on the adaptation side. That seems weird because, as I mentioned this morning, we have had 533 consecutive months of above 20th-century-average temperatures, so obviously we are already in the realm of needing to adapt. Maybe some people think that if you talk too much about adaptation it makes people feel depressed about their efforts on mitigation.

In fact, you know, we need both. We need to do both.

If I look at countries like Australia and the United States, yes, we do need to work on mitigation, but I think our big value-add, and our comparative advantage in the world, comes from our technology, our R&D. I think the Crawford Fund is very important, and that has a lot to do with adaptation, and we're going to need a lot of it. We are already seeing the effects of climate – and other factors – on agricultural production. We have to remember that there is a lag time with agricultural R&D, but once you get that pipeline started there is also a long, long benefit stream. Phil Pardey at the University of Minnesota talks about a 50-year period in which you get benefits from agricultural R&D, but that depends on keeping the pipeline full. We need to be very careful, as we go forward, to be making those kinds of investments so that we can get that 50-year tail of benefits.

Moderator: John Anderson

Thank you. If I'm honest, my question was loaded. I believe the Australian Government should commit, as never before, to agricultural research in a very big way in this country, because we do it

so well. We know the benefits provided for Australian farmers. Farming has outstripped every other sector of the economy for productivity, year in year out since the 1940s. And now we can extend it globally, in a way as never before. We have already done magnificently, globally, probably feeding as many, or more, people with our science as we do with our actual exports. I think we ought to be building on it. This comment is not party-political, but it is very *political*.

Kym, related directly to what Cary said, we see these ‘camps’ of mitigators and adapters and the capture and the non-capture people. Many of the non-capture people say that carbon-capture just gives people a way to wriggle off the hook and not do the hard work of reducing emissions. I think Robin Batterham, former Chief Scientist of Australia, would say that we need it all. That we need the energy sector to do carbon capture and so forth, to suck carbon dioxide out of the air. We know that there are ways to store more carbon in soils. The biggest barrier, I’d say, towards doing a lot more of that in Australia is that we don’t yet have a system of affordable, reliable, trustworthy measurement. We know you have to measure the carbon stored, on an ongoing basis. You first have to get your benchmark, and then monitor what’s happening in the years after that.

Do you have any thoughts on the urgency of providing farmers, here and internationally, with such a measurement system? In my view, there has not been enough urgency from governments in that area of work. It may reflect a ‘siloeing’ problem where the mitigators rather than the anti-carbon-capture people have too much sway over those who say that we need to have capture as well.

Kym Anderson

I think it’s clear from the work that’s been done so far – where countries have moved down this path and tried to get a sense of how to offer the right incentives for farmers to provide, for example, ecosystem services – that there is enough empirical evidence now, I think, to show that we don’t know enough; that we don’t know how to capture this information about, first, what the baseline is before somebody starts planting a tree and/or putting stuff into the soil. For measuring those sorts of data, there is very poor science so far.

As I mentioned in my talk this morning, there is an OECD paper that came out last week that does a quick survey across the countries that are aiming to try and do this sort of thing (Deconinck *et al.* 2023). It shows how badly we currently know how to do that. This is partly tied up with our efforts in national accounting, aiming to go beyond just GDP-type measurement, to try and identify the natural capital stock: how much land we have got, how much is arable, how much is forest land, etc., and how much water we have, and similarly for other natural resources.

The ideal is to have those data as a baseline and then monitor how they are changing on an annual or five-yearly basis, for example. Carbon is part of that same story. We need to get much better at doing that.

The World Bank started natural capital accounting a few years ago. They have a system, for 60 or so countries, of putting together data on natural capital. They treat it like a stock of wealth, and then look at how it’s changed over time. And in doing that, they take into account not just the physical quantities of land or water or whatever, but also the prices of the things they can be used for, so that when prices change the estimated aggregate value of the stock of wealth changes. The global distribution of this moves around a lot. But we are really at the very beginning of doing this sort of thing, and involving the national accounts people is an important part of what’s required.

Moderator: John Anderson

One of the great difficulties is that many farmers have already adopted policies that will have led to much greater levels of carbon storage, but they can't extract the reward for that now because they've already done it. And there are other farmers who ought to be incentivised to do more, who are not getting the baseline work done. That's another issue.

Wendy and Éliane, can I ask you about a different matter. We had a long talk at the board meeting yesterday about being culturally sensitive in the countries where we try to help out and extend knowledge. Government aid from the west often comes with 'tags' attached, which are resented. For example, we may want the aid recipients to meet a target that reflects *our* values, but perhaps it doesn't mesh with the values of the people that we are trying to work with. It's a question really around social sensitivity and willingness to adopt better technologies and real assistance. I would be very interested in an ACIAR perspective on it, and an African perspective on it. Are we doing it well enough, working *with* people rather than working *at* them, if I can put it that way?

Éliane Ubalijoro

This week (4 – 8 September) in Nairobi, it's Africa Climate Week, which is Africa's opportunity to take leadership in terms of visioning how Africa wants to look at mitigation and adaptation and climate finance in general.



What I think is needed is for all countries to have their *own vision of where they want to go*. Then that can support donors who know *what* issues they want to contribute to, to align their donations with the local vision. I think having that synergy will allow us to accelerate the impact of the dollars that are coming in and the purpose-driven possibilities of implementation locally.

In other words, I think we need shared leadership and vision that builds on our collective vision of where we want to go, and of how we know – locally – that the work can be implemented. Because we know that we *all* want *every* donor dollar to have *maximum* impact. We know that ACIAR does that, and I hope you get the extra funding you need right now, because your impact is so wonderful.

What is needed is to *maximise the catalytic capacity of those dollars*. And that comes down to whether or not we can bring shared leadership to that.

Africa Climate Week is that opportunity for Africans to create that leadership around mitigation and adaptation and say, 'World, come and help us'. Whether it's a government, whether it's

private sector, whether it's philanthropy, it's Africa saying, 'Let's collectively work to build that vision'. Aligning the vectors in the same direction will give the R&D funding more power, more force, and accelerate the work we can achieve together.

Moderator: John Anderson

I think that donor countries ought to be careful about saying (in effect), 'Here's some help, but we are going to prioritise it being spent to achieve *our* values, and you (recipients) must fall into line'. What we *should* be saying is, 'Our primary objective is to help you and your basic needs, and we will let you take your own society forward from there'. And I worry that we sometimes want to prove a point bit too much.

Wendy Umberger

ACIAR was very excited to see, in Australia's new development policy, the big emphasis on partnerships. That is something where ACIAR, as an agency, has been ahead; something we are already working on.



We have at least 13 different country network offices, where we have locally engaged staff from the country, speaking to government, speaking to multinationals but particularly to governments, understanding what the needs are for the country's government, for our partners. Different countries are at different stages. We have an initiative called Next Generation Partnerships that is being led by our country network.

Something we have talked about in ACIAR – as research program managers and other ACIAR staff in the audience here know already – is that we need to be doing what is important to our countries. And if we are doing that, we are going to have a much better and much greater impact. ACIAR has already had tremendous impact, but that will be so much bigger if we truly understand the needs of our partner countries.

Éliane and I had an excellent talk earlier this week about how we share this philosophy of partnering, where ACIAR is a broker of research, where we commission research. Our funding of \$110 million or \$115 million is not huge, so we need to leverage and work on partnerships if we are to have a bigger impact on the ground and an understanding of the local needs, rather than us, ACIAR, coming into a country with our 'Australian hat' on. We really need, to some extent, demand-driven understanding of the local needs, but obviously what we do needs also to line up with Australia's development policy and our Australian goals. But that's pretty easy. That's actually a really easy thing to do.

Moderator: John Anderson

Who would like to ask a question from the floor?

Q: German Puga, The University of Adelaide, and a Crawford Fund scholar

If consumers were to have a more positive opinion on GMOs, what would be the implications of that on food security? And if the answer is that it will have a positive influence, what should governments do in terms of policy?

Cary Fowler

I think it's a mistake to think that biotechnologies are either the solution or the problem. I'm fairly agnostic about technologies. I think – and my government thinks – that the job is really to get the job done. Having said that, there are some very difficult issues with plant breeding of some crops if there are particular obstacles to overcome to improve production or disease- or pest-resistance. I could mention papaya. In some cases, you are not going to get the amount of investment needed to overcome those problems if you can only use traditional plant breeding methods, because: it takes too long; the genetics are too complicated; there's not enough money involved in it; there's not going to be a pay-off; and so the problem is not going to be solved. Therefore, I think we have to be humble about how we approach some of these problems and we have to be at least open to the different kinds of solutions that are increasingly available, such as the genetically modified solution, the gene editing, and of course also the traditional plant breeding.

Q: Julie Nicol, Victorian Crawford Fund Committee, and the University of Sydney Plant Breeding Institute

What are the opportunities for interdisciplinary research for agricultural development with industry R&D, such as the Grains Research & Development Corporation, the Meat and Livestock Commission and ACIAR working together on projects of Australian and global importance?

Wendy Umberger

Even ACIAR projects don't always work well together and do interdisciplinary work. There are huge opportunities, and we have to have a mechanism to get researchers to work together. Something like carrots and sticks. I have been part of a lot of initiatives in my time in Australia that have been meant to be doing multidisciplinary, transdisciplinary research ... and it's so hard.

I think we have to put in some sort of incentive, and a bit of stick there, to say, 'Okay, you're going to work together on an interdisciplinary team, but you will need to respect each other and have mutual interest in each other's areas'. I think within ACIAR we need to do a better job of that. I think we need to have even our research management areas working more cohesively. It's something we talk about and that we are going to be sorting out how we can do. But I don't have the answer on how you do that, because I've seen it *not* work probably more times than it *has* worked. On the other hand, for my entire career I have worked in an interdisciplinary way and I think it has been the most fun, the most rewarding, and where we have had the best impact.

My very last ACIAR project, which was called IndoDairy, was entirely interdisciplinary, even though it was in the agribusiness area. It wasn't an agribusiness project. It involved technology, technical science, social science. The big outcomes it achieved were because there was a local milk processor involved. I think sometimes we're hard on ourselves, not realising that we actually do a lot of interdisciplinary stuff. Now research & development corporations (RDCs) are moving towards that in Australia, and universities are also trying.

Moderator: John Anderson

Any international perspectives? Is anybody doing it better than Australia?

Kym Anderson

One thing Australia is doing with its RDC system is taxing each of the RDCs a little bit and putting money into a common pool for some big problems that can't be solved solely by the Grains RDC or the livestock RDC, or whatever. So for those of you who want to work on those big problems, don't just look at GRDC if it's a grains issue. Instead, it might be handled by a climate change group that is working across all pertinent rural industries in Australia.

Q: Kim Russell, Stump Jump Foundation

Does anyone know anything about the Taskforce on Climate-related Financial Disclosures, which is a big-end-of-town development of what disclosures big companies have to make on climate-related data? I fear that it is something that will trickle down to smallholder farmers as well as to farmers like yourself, John. Has anyone heard about it? If you haven't, then 'watch that space'.

Moderator: John Anderson

It's a very good point.

Éliane Ubalijoro

There is a taskforce on climate and also another one on nature. They are about how we can bring natural capital into our accounting systems: true cost accounting. For example, for fertiliser production we should think about the true cost of producing it from the environment it's derived from: that is, how does the fertiliser production process affect the quality of the water and of the soil in those production areas? How are the local communities benefiting?

With the International Sustainability Standards Board having been established in November 2021 (with offices in Frankfurt and in Montreal), we are now in an era of looking beyond profit, at natural capital, human capital and social capital, and how they can be integrated into how we look at our economy. We are trying to move towards what I would call a stewardship economy, where we are all contributing to the betterment of humanity and nature. We want to know how our accounting systems can help us move forward. That's important not only for private sector but also for government procurement around the world, in terms of how we collectively can contribute to growing green economies.

These are the trade-offs we need to look at. This is really about data-driven decision making, and it's about how we can look at the true cost of everything we are doing, in terms of its effect on natural capital and human capital and social capital.

This is innovative thinking that is going to be evolving, and there are mechanisms and consultations happening at government level, at private sector and at micro- and small enterprise levels around the world, to make sure that we can do this. It's not going to be perfect, but it's looking at how we can move forward in a way that will allow us to do a much better job in our accounting systems to be bringing all of these elements together.

Q: Sibjan Chaulagain, a Crawford Fund scholar at the Australian National University

Thank you for these two amazing days and inspiring sessions. I am here from Nepal on a generous scholarship provided by Australian Government, and I thank Australia for giving me this

opportunity. During my study at ANU and through events like this I now feel that I have a wealth of knowledge, skills and networks, and when I return to Nepal next year I want to be able to use these resources for international activities and development.

For people like us who are going back home with knowledge and networks, how can we communicate with institutions like ACIAR or DFAT (Dept of Foreign Affairs and Trade) or the Crawford Fund to get this momentum going and create partnerships, so that you also feel that it is useful to have somebody you have trained in Australia to cooperate in the agricultural research and development?

Moderator: John Anderson

Thank you. It's a good question. How do people who want to build careers make contact with the right people in the right organisations? I'd imagine some are more accessible than others. Wendy, do you have a view?

Wendy Umberger

ACIAR's alumni network, whether it's via Australian awards or a John Allwright Fellowship, is actually I think one of our best assets. We put funds into development working with our friends in the countries you go back to. We are improving that alumni network and doing more regular communication. For Nepal, I think we have communication with someone in your country with whom we can keep the alumni network going. For ACIAR, staying involved with our alumni is very important. We will continue to bring you into events, as also will the Australian embassy. You are a huge asset and a friend for the future, and communicating with you will be a good way for our countries to continue work together.

Moderator: John Anderson

Many of you should have been able to build a relationship with your mentors as well, and those mentors will have their own networks that will be useful for you in the future. If not, come to me and tell me your mentor was no good!

Q: Maria Ortiz, Tasmanian Farm Innovation Hub, and a Crawford Fund scholar

With the increased amounts of animal protein and changes in human movements driven by climate change, what is the role of policy in ensuring disease control, surveillance and monitoring while maintaining global trade and food security?

Kym Anderson

You are asking how do we control disease spread globally. Globalisation of course increases that risk. We have seen that happen with avian flu and swine flu, as well as the Hendra virus in horses. This is a reality of globalisation: ships moving around, aeroplanes fly us around, and they and we can carry diseases from one country to another. We need to have good biosecurity. Every country needs that. Australia puts a lot of effort into biosecurity elsewhere through training people in neighbouring countries, because we have an interest in them excluding foreign diseases too. I think this is something that's done globally; for instance, the Americans, New Zealanders and others also train biosecurity staff in developing countries. Those policies are very important, so we need good bureaucrats in that area of work to make sure that we do the best we can to minimise that negative effect of globalisation.

If you think a long way back, Aboriginal people suffered in Australia from Europeans arriving here a couple of hundred years ago, and similar human diseases spread across the North Atlantic. But globalisation brings other good things: it introduced potatoes and tomatoes to the world from their original sources, and in the other direction there has been poverty reduction and increased food and nutrition security. We have to trade off the positives and negatives. There are negatives, but they're tiny compared with the positives.

Moderator: John Anderson

Thank you very much to our four panellists. We have gained real value from them, and please all show our appreciation in the usual Aussie way.

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Bios of the four panellists

Éliane Ubalijoro, PhD, is Chief Executive Officer of the Center for International Forestry Research and World Agroforestry ([CIFOR-ICRAF](#)) and Director General of ICRAF. An accomplished leader with a background in agriculture and molecular genetics, she serves on several boards and has been recognised for outstanding contributions in the areas of innovation, gender equity, and sustainable prosperity creation. Dr Ubalijoro has been a professor of practice for public–private sector partnerships at McGill University since 2008, with research interests focusing on innovation, gender and sustainable development for prosperity creation. From 2021 to March 2023, she was the Executive Director of Sustainability in the Digital Age and the Canada Hub Director for Future Earth. She is a member of Rwanda's National Science and Technology Council and Presidential Advisory Council, the Impact Advisory Board of the [Global Alliance for a Sustainable Planet](#), the Science for Africa Foundation, and the Capitals Coalition Supervisory Board, among others. She is a fellow of the International Science Council. Recognised for her work in leadership and gender equity, Dr Ubalijoro is a recipient of the International Leadership Association's 2022 awards in women and leadership for outstanding practice with broad impact, and is part of a cohort of appointed International Science Council fellows in recognition for outstanding contributions to promoting science as a global public good. She has facilitated the UNAIDS Leadership Programme for Women at the United Nation System Staff College. Dr Ubalijoro was a member of FemStep, a research network highlighting rural girls' and women's perspectives for engendering poverty reduction strategies in Rwanda, South Africa, Tanzania, DR Congo and Ethiopia using arts-based methodologies. Her career path was featured in Forbes in celebration of International Women's Day 2019.

Dr Cary Fowler is perhaps best known as the 'father' of the Svalbard Global Seed Vault, which UN Secretary General Ban Ki-Moon described as an "inspirational symbol of peace and food security for the entire humanity". This facility provides ultimate security for more than 1 million unique crop varieties, the biological foundation of agriculture and the raw material for all future plant breeding and crop improvement efforts. Dr Fowler is the former Executive Director of the Global Crop Diversity Trust, an international organisation co-sponsored by the Food and Agriculture Organization of the UN (FAO) and the Consultative Group on International Agricultural Research (CGIAR). Prior to leading the Crop Trust, he was a Professor at the Norwegian University of Life Sciences, and a senior staff member of Bioversity International. Earlier, he oversaw the UN's first global assessment of the State of the World's

Plant Genetic Resources. He was responsible for drafting and negotiating the first FAO Global Plan of Action on the Conservation and Sustainable Utilization of Plant Genetic Resources, formally adopted by 150 countries in 1996. Following this, Dr Fowler twice served as Special Assistant to the Secretary General of the World Food Summit and represented the CGIAR in the multi-year negotiations on the International Treaty on Plant Genetic Resources. In 2015, Dr Fowler was appointed to the Board for International Food and Agricultural Development by President Obama. He is a former board member of the International Maize and Wheat Improvement Center, and former Chair of the Livestock Conservancy. Dr Fowler has been recognised with several honorary doctorates and many awards including the Thomas Jefferson Award for Citizen Leadership, the Heinz Award, the Meyer Medal from the Crop Science Society of America, the Wm. Brown Award from the Missouri Botanical Garden, and the Proctor Medal from the Garden Clubs of America.

Professor Wendy Umberger is the new CEO of ACIAR. Previously, she was the President of Australia's Policy Advisory Council (for International Agricultural Research and Development) and an Honorary Professorial Fellow in the School of Agriculture and Food at the University of Melbourne. She is an expert in agricultural economics and development and food policy. She has worked on food system issues across the Indo-Pacific region and led interdisciplinary value chain research projects in Asia, Australia, North America, the Pacific Islands and South Africa. Her research has explored opportunities for agricultural smallholder households in producing high value (horticulture, dairy, beef) food products and adopting new technology to gain access to modern food value chains.

From 2013 to 2022 she was the Foundation Executive Director at the Centre for Global Food and Resources at the University of Adelaide and a Professor in the School of Economics and Public Policy. She served on the Board of Trustees of the International Crops Research Institute for Semi-Arid Tropics (ICRISAT) from 2015 to 2021. She is also an Independent Director of Grain Producers South Australia (GPSA), a Director of the International Association of Agricultural Economists, a board member of Food Bank SA, an Honorary Fellow of Food Standards Australia New Zealand, and a Distinguished Fellow of the Australasian Agricultural and Resource Economics Society. Wendy has a B.S. in Animal Science (1996) and M.S. in Economics (1998) from South Dakota State University and PhD in Agricultural Economics (2001) from the University of Nebraska-Lincoln.

Emeritus Professor Kym Anderson AC FAAEA FASSA DFAARES DFESA has contributed to economic development in the overlapping fields of international trade and political economy, with a strong focus on agriculture and products of importance to developing economies. His work and outputs, prodigious and varied, have been widely recognised for their quality and significance, in Australia and abroad, including by leading international agencies. Kym is the George Gollin Professor Emeritus in the School of Economics and Public Policy and formerly foundation Executive Director of the Centre for International Economic Studies at the University of Adelaide, where he has been affiliated since 1984; and he is an Honorary Professor at the Australian National University's Arndt-Corden Department of Economics where he was a Research Fellow during 1977–1983 and a part-time Professor of Economics during 2012–2018. He has held senior research leadership positions at the World Trade Organization and the World Bank; and a large number of significant research advisory positions, including in Australia. He is highly respected internationally for his knowledge, understanding and leadership, with an excellent citation rate that indicates his international leadership in agricultural economics. Kym has also played major roles on the ACIAR Commission and Policy Advisory Council and has chaired the Boards of the International Food Policy Research Institute (IFPRI) and the International Centre of Insect Physiology and Ecology (ICIPE).