

2022 SIR JOHN CRAWFORD MEMORIAL ADDRESS

Food and nutrition security in the Pacific and the road ahead for small islands and developing states

Dr Audrey Aumua

CEO, Fred Hollows Foundation New Zealand,
and Member of ACIAR Policy Advisory Council



Thank you to the Crawford Fund for the very privileged invitation to present the 2022 Sir John Crawford Memorial Address. I am delighted to be here in this place in this building – the heart of your democracy.

It is an auspicious time, on the cusp of a new beginning, now that the pandemic clouds and tumult of the past several years have started to clear. We might be forgiven for feeling almost giddy, as it has been so long since many of us have been able to connect physically.

As we step forward into the bright future for agriculture this evening, I would first like to congratulate the Crawford Fund, which this year is celebrating its 35th Anniversary. Thirty-five years of progress as a reliable partner in building a brighter future in Agriculture, globally promoting the vision for a better world through collaboration and training. Your efforts have indeed been felt in the Pacific. I should also mention that this year is also ACIAR's 40th birthday, and I was pleased to be able to join that celebration earlier this year.

These important milestones tell you that Australia has for many years made a significant contribution to the global landscape of agriculture.

Trying to summarise all the challenges and achievements in agriculture, for a region as vast as the Pacific, is an almost insurmountable task. The peoples and nations that make up our Ocean Continent are as unique and diverse as the stars in the sky. However, I believe there are a few commonalities which can help guide us.

Tonight I want to speak about five of these. They are five issues to discuss and kindle a fire for; they are five challenges that could turn discussion into action; and they are five signposts that can help us map our way to a more sustainable future.

1. We see ourselves as a Blue Continent region

You will never know how far you must travel unless you know where you are starting from; so to begin, I want to focus on taking a small snapshot look at the state of agriculture in the Pacific today.

Along with the beauty of the Pacific comes the harsh reality of environmental changes, biodiversity loss, cyclones, natural disasters, pandemics, and economic pressures and shocks.

Most recently, the eruption of the Hunga Tonga-Hunga Ha'apai volcano, one of the largest ever recorded, spewed ash and adversity throughout the islands of Tonga, requiring rebuilding of entire communities, and destroying the entire agricultural and crop sector of Tongatapu. A few minutes of volcanic activity destroyed decades of development. And let's not forget 2016's devastating Cyclone Winston from which Fiji is still rebuilding. The journey to recovery from the impact of Winston is likely to take many years. And, of course, many other increasingly powerful cyclones have been wreaking havoc across the Pacific since then.

There is the ongoing impact of COVID-19, from which we are still slowly emerging, that has left communities and economies across the region completely ravaged.

And now we are even feeling the impact of issues happening half-way around the world as the war in Ukraine has helped trigger rapid inflation of basic goods – from fuel to grain, including agricultural inputs.

What we have learnt and understood more clearly through the COVID-19 and Ukraine disruptions is how dependent, and therefore vulnerable, our agriculture sector is on external inputs and the fossil fuel industry.

Hanging over all of that is a more rapidly changing climate, leading to sea-level rise, droughts, infectious diseases, unsustainable development, food and nutrition challenges, and threats to livelihoods and our traditional ways of life.

These challenges go hand-in-hand with agriculture challenges, and the difficulties farmers often have in getting safe, nutritious food into markets, due to disasters and hazards and competition from cheap imported food – which is slowly becoming a catastrophe of a different kind.

The climate emergency alone has negatively impacted agriculture and has led to declining availability of arable land and declining crop yields.

Our region today is constantly fighting a rearguard action against these continual threats. There is often little time to make long-term plans because of the constant disruptions of the environment, and many governments' immediate actions, needed to save lives today, are not always sustainable. Long-term planning is unattainable for many of our small island nations.

Pacific communities' relationship with nature is changing: forests are being felled, biodiversity is being lost, and the tiny and precious amount of land that our small island states in the Pacific do have is often not managed with a view towards future generations.

Although our starting point looks bleak, it's not one that can't be managed.

We as a region are learning to embrace science, technology, innovation, tradition and flexibility to ensure our small nations achieve big ambitions. We must be proactive in anticipating what is coming. The Pacific needs to become global leaders in adaptation. We have the resources in place: organisations like The Pacific Community (our regional scientific organisation) which is already working to pool our knowledge, expand our scientific expertise, and help us prepare for the future.

We must tap into the big thoughts of our small populations to blend tradition with modernisation if we are to thrive in a post-COVID-19, politically dynamic and climate-driven world.

2. Sustainable nutrition

In my second point, I want to spend a few moments talking about the importance of the relationship between nutrition, health and sustainable livelihoods.

Today, Pacific communities are drowning in an ever-encroaching sea of cheap, imported food that often has lower nutritional value than traditional foods. Though growing urban populations and changing diets will require some food imports, research has shown the substantial increases in imported non-traditional foods have been linked to an increase in non-communicable diseases (NCDs), including diabetes – a condition that requires good nutrition to be managed. Today the Pacific is globally known for having the highest rates of mortality due to NCDs and some of the highest rates of obesity in the world.

We have the challenge of both poor nutrition and malnutrition in our children, with some countries having high levels of stunting in our adolescents; and of increasing concern is anaemia in our younger women. This is a double-edged sword for many communities that require good nutrition to manage these conditions.

The truth is that Pacific food production is still currently insufficient to supply the amounts of fruits and non-starchy vegetables required for good human health. Nutrition security has to be at the heart of many of our efforts, and there is ample room for new ideas in thinking about how to embed local production and nutrition-behaviour-change through school feeding.

In regional food production, we must ensure every aspect of getting a plant or animal from the farm to the table is viable – from the seed to the crop to market and, of course, down to the very building blocks of this food: its genetic resources.

I am heartened that we do have a long-time ally and deep expertise in these food building blocks – genetics and seeds in the Centre for Pacific Crops and Trees, CePaCT. A key area of their work is improving planting material, where they conserve and make available different food crops and genetic material; and, more importantly, exploring food options for different and future climatic conditions. There is no doubt the Pacific will indeed need different varieties of food as we face further climatic conditions such as drought, and we will need food that is more salt-tolerant as we face sea-level rise.

I am really so delighted to see that CePaCT's leader, Logo Waqainabete, who is also the Head of The Pacific Community's Land Resources Division and Genetic Resources Programme, is here with us tonight. For more than 10 years, Logo has ensured the Pacific has a fruitful, robust base of agricultural crops and trees. This year CePaCT won the 2022 Island Innovation award for Innovative Island Research. Well done to you, Logo!!

The importance of regional food systems has been brought home, thanks to COVID-19, as many economies closed and markets have become difficult to access over the past two years. Add in the impacts of globalisation and the war in Ukraine recently, and the vulnerability of

Pacific agriculture has become obvious. But the Pacific is not blind to this vulnerability and is already taking steps to meet these challenges.

Last year, The Pacific Community led a series of online food systems dialogues in the lead-up to the inaugural UN International Food Systems Summit. The Pacific dialogues not only led to the regional representation and supported a coordinated regional voice at the International Summit, but also laid the groundwork for The Pacific Community's flagship Food Systems Programme. The initiative is a prime example of governments, community groups, NGOs, research agencies, and business and development partners coming together to act now for a future of hardy and resilient food systems that will feed our communities. I thank the many partners involved in supporting this.

An exciting initiative underway that will have region-wide impact is an integrated program managed also by The Pacific Community on the coconut. In the Pacific we call the coconut the 'Tree of Life' because every part of the coconut – the entire tree from top to bottom – is used to sustain human life. It has to be the most useful tree in the world. However, it is under threat: the rhinoceros beetle is a major pest to the coconut and has, to date, devastated coconut growth and production in many small islands.

A coconut risk-management and mitigation manual, released earlier this year, covers risks from seed to consumption, including climate change, planting, pests and diseases, policy, technology, post-harvest, marketing and, essentially, cultural habits. The coconut and its fruits are an ingrained part of Pacific culture, and this targeted initiative will go a long way in ensuring this culture, and the livelihoods it supports, will remain strong.

I want to acknowledge the work of ACIAR and DFAT for their scientific support in this area.

Every step we take towards ensuring the Pacific has a sustainable, regionally based healthy food system, will be a step towards better and more secure livelihoods that are nutritionally safer for all.

3. The blue–green economy

There is arguably no region on earth in which the connections between the green and blue economies are so intertwined. This relationship is my third signpost.

Agriculture is the green of the blue–green economy, but we cannot leave out the blue – the ocean – and the food and nutrition it provides. Agriculture and fishing are not just sources of food: they are vital for livelihoods. Across the countries of the Pacific, 50–70% of people depend on agriculture and fishing for their livelihoods. For most small island nations or large island nations we have the necessity of farmers who fish, and fishers that farm. That reality must shape our approach to Pacific agriculture.

The blue–green Pacific economy is facing both slow shocks – such as deteriorating water quality and availability, deterioration of coastal ecosystems, degraded soils, and loss of plant genetic diversity – and rapid shocks such as extreme climate events, as well as extreme natural events, and increases in invasive plant pests and animal diseases. We have economic

disruption from the pandemic and now other global events such as the Russian invasion of Ukraine.

It is important to remember that these shocks are cumulative, and the climate-related ones are forecast to be more frequent and more extreme. The blue–green economy means evolving not only our food systems but also our relationship with food, so that we can capture and emancipate a very powerful means to realise the climate-resilient societies and climate-resilient food systems that the Pacific needs.

Consider for a moment the challenge faced by atoll nations such as Kiribati. With limited soil, a narrow biodiversity base, and access to fresh water difficult, we see mostly fishers that farm, and the changing climate is slowly swallowing the scarce amount of land that is available. What they require are new ways to integrate ridge and reef systems, and investment in multi-sectoral disciplines that support local communities.

A real concern in the region related to food sources in the blue economy is, of course, fish which are the region’s greatest source of nutrition. Our fish are being impacted by ocean warming and are migrating away from their historic territories, and the result has been that the fishermen’s livelihoods and therefore the availability of our traditional sources of protein have been disrupted.

The time is right to better support these nations with our resources and our technology to find new ways to feed their communities. Land Resources teams in the region, for example, are working with their partners on adapting the new Foodcube technology for atoll nations: a trial in Tuvalu is being investigated, on whether gardens could be established using only on-island resources, and trials will be extended to Kiribati and urban Fiji, paired with training on how to use the technology.

We must be careful, however, that these new technologies, in addition to the current technologies and coastal food systems in place, do not damage delicate coastal fisheries. Land-based agriculture should complement or support sea-based food harvesting, just as sea-based harvesting should complement land-based farming.

A good example of this is the research work done by the Government of Fiji into a bacterium fertiliser, made from local resources, which supports soil health and crop productivity while protecting coastal ecosystems and fisheries from hazardous runoff possible with conventional inputs.

These components of the food system will clearly be key to realising blue–green economies in the Pacific, and we must ensure they are progressive and adaptable so that they can serve the different needs and environments of the region’s volcanic nations, as well as its atoll nations.

4. Traditional knowledge and technology

My fourth point is on the critical importance of weaving traditional knowledge with modern science and technology.

A blue–green technology for a blue–green economy must be driven by new thinking and new tools for our new times, but the old agricultural knowledge, traditions and culture that have fed Pacific people and supported them and their communities for generations cannot be left aside. This weaving of tradition and technology is the only way forward for a Pacific that has been swept up into the tides of rapid world transformation and modernisation.

Sadly, many of our traditional knowledge and customs in the Pacific are being lost to modernisation, but we are increasingly discovering that they may hold the key for our agricultural future. For centuries, Pacific peoples have survived on our small, remote islands through intimate knowledge of not only the surrounding seas but also the generous land. Our island countries are small, and their lands and soils are not always rich – particularly in atoll nations – but our communities have always found a way to feed their citizens.

Though traditional knowledge and customs are vital for the future of Pacific agriculture, it is also true that this sector cannot realise progress without merging them with modern science and technology. The pace of science is continuing to accelerate worldwide as a result of globalisation and knowledge interconnectivity. But too often our region has been left out of the international research efforts, like the European exploration maps of old where blank spaces represent the Pacific – ‘There be dragons’.

How can we ensure that the deep and invaluable knowledge locked in the Pacific can become a part of the global knowledge base?

One answer is to ensure that Pacific researchers and scientists are publishing in more peer-reviewed journals and other science-based outlets. We need the Pacific to become part of the conversation: the uniqueness of our agricultural challenges can and should lead to unique scientific breakthroughs.

One of these breakthroughs is in plant health. Plant health on farms and in agroforestry projects is vital for our communities: our native and farmed species are under growing threats, and without plant health there simply will not be enough food to feed our communities. There has been a focus on plant health in the region for several years now, and farmers have been trained through plant health clinics. This training is now widely available and now also online.

A new app was recently introduced for farmers to diagnose plant disease and other issues, and to get help from experts when needed, to stop a scourge that could destroy their entire crop. And in April this year, regional partners teamed up with Manaaki Whenua (Landcare Research in New Zealand) to open a new molecular laboratory in Fiji that will offer a pathogen diagnostic and genotyping service to the region.

It is a start, but these breakthroughs will not happen if our small island nations do not collaborate and receive support from our large regional partners. So I ask, as science and research progresses in the Pacific, why is our aid lagging and why are our agricultural models outdated?

There is currently a lack of investment in scaling, and most importantly we need a broader regional research agenda that not only provides support but builds capacity for agricultural research in the region, so the Pacific peoples can innovate using their knowledge and skills.

The good news is that the Australian Government has started to recognise the problem and this year ACIAR has partnered with The Pacific Community on a Pacific Regional Research Agenda. The agenda is currently under development and will be presented to the annual Pacific Heads of Agriculture and Forestry meeting, due to take place in Fiji in November. I trust you will join us to ensure this vital initiative gets off the ground and plays an important role in the Pacific's agriculture future.

Although this may sound like a new initiative, ACIAR has long been a solid and trusted partner in the region. For some time ACIAR has been working with various research partners to build and strengthen core research capacity, assisting many of them to build core scientific and technical management capacity. The goal ultimately has to be that we work together collectively to strengthen coordinated research mechanisms across the region as well as build the human resource capability in research – a topic close to the heart of the Crawford Fund.

The science and technology communities need to work hand-in-hand with traditional knowledge practitioners in finding unique and relevant solutions to our unique and relevant agriculture challenges, but we need those solutions to travel beyond the lab and beyond the village. We need solutions that are as extensive and adaptable as the Pacific region itself; that are not reductionist in approach but recognise and work with whole systems.

5. My fifth signpost – 'It Takes a Village' – is about inclusive and comprehensive action

Our efforts, solutions and advances must be available and relevant in all Pacific island countries, and for all their peoples. We cannot prosper agriculturally now and in the future without bringing gender and under-served communities into the conversation. Welcoming and supporting all is the only path to success.

Women already make a large contribution to Pacific economies. In places such as the Solomon Islands, women are responsible for 90% of the activity in Honiara Central Market. In Samoa, 80% of the private sector comprises microbusinesses, and women are estimated to head over 40% of them.

Clearly the Pacific cannot find success in agriculture, or with any sustainable development initiative, without including women, youth and other under-served communities: they drive the economies and provide much of our food. Their workdays are often 'double workdays' as they combine responsibilities for home and family with their economic activities.

Attitudes and cultures towards the contributions of women and youth are shifting, but in order to shift into a plentiful post-COVID-19 agricultural future, we need to do more to ensure they are empowered and recognised for their invaluable contributions.

There are some fantastic examples already in place: DFAT is funding the *Building Prosperity for Women Producers, Processors, and Women Owned Businesses through Organic Value Chains* project that is managed by the POETCom initiative. The project is working in Palau, Republic of Marshall Islands, Kiribati and Pohnpei to help women participate in organic value chains and, importantly, in decision-making processes. Women are gaining increased financial

independence and benefiting from organic value chains which are helping to increase food security. The project will help increase gender equitable policies and practice in four countries.

Furthermore, the *Pacific Women Lead* initiative, again funded by DFAT, will see a greater focus on women in the Pacific leading on key agricultural initiatives.

In Fiji in the village of Nadroumai on Fiji's largest island, Viti Levu, women have taken the reins of an agroforestry project that has prospered in the wake of COVID-19. They have planted trees to improve biodiversity and help stem the impacts of climate change in their village, and this in turn has led to a plant nursery, where seedlings are sold to benefit the community.

The project and its collective knowledge is also being passed onto the next generation: many of the village daughters came home from the tourist resorts in which they worked due to COVID-19 shutdowns. The Nadroumai women taught their daughters their growing methods, and young girls are now interested in their work, carrying on tradition while also bringing their own education and knowledge back to benefit their families and the community. When we pass these traditions to youth, everyone benefits.

These stories tell us that women can lead in our post-COVID agriculture future, and we need to foster and support more examples like Nadroumai and the Women Producers project in Micronesia, throughout the Pacific.

Pulling it all together

The five elements I have highlighted this evening are all essential for the future of agriculture in the Pacific. But I want to emphasise that these and other efforts should not be looked at as a menu of choices. We cannot decide to deal with one area and leave the rest for another time. They are all interconnected. Failure to fund and invest in any one area will inevitably bring down all the rest.

A holistic and integrated approach to all investments is essential for sustainability.

The diversity of the Pacific means that 'one agriculture' – meaning using the same model for every country – will be challenging, but our approach to agriculture throughout the region cannot be successful without putting the One Health approach into practice.

Some of the projects I have mentioned tonight are already doing this, but it is clear we need more: more education, more knowledge, more collaboration, more bold ideas, and more resources from our partners in Australia and beyond.

We have momentum now. Spirits are high, as the fever of agriculture and development in the Pacific is reigniting post-COVID. Old projects are back online, with new projects sprouting quickly. Our region is big. I THINK WE NEED TO THINK BIG!

While we work to regrow our agricultural communities in the next few years post-COVID, let's think about what we can achieve in five years, in ten years, and even the next 30 years. Let's commit to our farmers in the Pacific ploughing only healthy soil in 2050: soil that is rich in tradition, watered by knowledge and technology and bound together by community. We can support our region by thinking about climate-resilient food systems, climate-smart agricultural

production. It is possible, but only if we collectively make comprehensive consistent investments. And not only with *your* knowledge and *our* collective knowledge and resources, but with *your* ideas, *your* ambition and *your* commitment.

Recognition of the roles of women and youth is now being integrated into the narrative of our agriculture traditions and our progress. New projects, technology-based but grounded in traditional knowledge, are taking shape. The Pacific is increasingly being heard on the world stage. This is the time, the opportunity to re-imagine and renew our call for agricultural resilience throughout the region and to recognise and support the role agriculture can play in regenerating our ecosystems and economies.

So I urge you, and all of us, to not let these many opportunities pass: the opportunities to not only revive but also to re-imagine and rejuvenate agriculture and food systems in the Pacific. The potential in our region is boundless, and with your collaboration we can start building the farms and markets of tomorrow, today. DFAT's *Partnerships for Recovery – Australia's COVID-19 Development Response* is a good step forward.

We can turn the Pacific's thorny and increasing rooted challenges into an opportunity. Thriving agriculture seeds One Health, and One Health seeds a radiant future for this region.

Finally, I thank you most sincerely for listening this evening. I am indeed looking forward to a future where we are all fed and all valued.

In fact, I think we have already taken the first step. We have already put shovel to soil, dropped in that seed of collaboration and innovation and watered it. Now I think we just need to help it sprout and grow.

Dr Aumua oversees the work of The Fred Hollows Foundation NZ which has a mission to end avoidable blindness and vision impairment in the Pacific. She took up this role in January 2021 after serving as the Deputy Director General of The Pacific Community SPC based in Suva for 6 years. The Pacific Community, being the largest regional science and development organisation in the region, is the host of the largest scientific agriculture and livelihoods program in the Pacific, including the Centre for Pacific Crops and Trees which is responsible for conserving the region's genetic resources. A key focus of Dr Aumua's work previously had been to shape many of the Pacific region's programs around food and nutrition security to the impacts of disasters and climate change. Pacific food systems – in particular, coastal food systems – have been a key interest. Dr Aumua's background is in the areas of public health and nutrition, and policy, and non-communicable diseases, and she has worked both as an academic and as a practitioner. Dr Aumua has been a member of the ACIAR policy board for three years, bringing both policy and sustainable development knowledge in land resources and nutrition to the work of ACIAR. Dr Aumua has extensive experience in research, policy development and management in New Zealand and Australia, Samoa, Fiji, Solomon Islands, Vanuatu, Tonga and Papua New Guinea. She has worked in regional development and held a variety of regional leadership roles across the Pacific.