



**Asia-Pacific
Economic Cooperation**

Services and the Food System

Workshop Report

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APEC Policy Partnership on Food Security

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EXECUTIVE SUMMARY

For APEC, food security is a primary concern in the region. As APEC works towards the finalisation of its successor Food Security Road Map Towards 2030 this year, progressing services for the food system is a strong staging platform. The Policy Partnership for Food Security (PPFS) was tasked with leading action on this issue resulting in the development of the PPFS Services and the Food System Project. The conduct of the workshop completes Action 14 of the APEC Services Competitiveness Roadmap and has made an important contribution to progress under the APEC Services Competitiveness Roadmap in time for the its Mid-Term Review in 2021.

The Services and the Food System Workshop sought to build capacity across the supply chain encompassing food production, processing and delivery to meet the food needs of our people as an essential part of achieving sustainable growth, equitable development and stability in the APEC region. The services highlighted in the Workshop were shown to make a valuable contribution to support and lift productivity and food safety, thereby contributing to food security. The Workshop was segmented into 10 themes:

Theme One – Overview of Food System Services

Theme Two – Covid impacts on Food System Services

Theme Three – Supply chain integrity

Themes Four – Regulatory barriers and issues (case studies from two APEC economies)

Theme Five – Product integrity, traceability and the food cool chain

Theme Six – Food System Services – Policy settings

Theme Seven – Sustainability and services

Theme Eight – Marketing services and sales

Theme Nine – Crisis management.

Theme Ten – Regulatory barriers and impediments (indigenous perspectives)

The Project identified best practice and innovative policies which economies could employ to deliver the services needed to support and grow the food system.

At the conclusion of the Workshop, a number of policy recommendations to improve the provision of food system services in the APEC Region had been extracted over the course of the four days. These were able to be grouped under three key ‘themes’

Recommendation Topic 1 – Regional Coordination (member economy government and industry)

- APEC economies must co-ordinate across borders to facilitate services.
- The greater the coherence between industry and member economy governments, the greater the likelihood of success.
- There is no one “silver bullet” to address food security. Multiple, non-distorting policy levers should be used.

Recommendation Topic 2 – System Collaboration (member economy governments)

- Member economy government agencies needed to cooperate, coordinate and collaborate within their own border and in their own economy to improve the regulatory environment
- A whole-of-government approach was needed for public-private partnerships
- These needed to be applied across the full spectrum of components in the Food System.

Recommendation Topic 3 – Inclusion and engagement

- Comprehensive indigenous engagement was needed
- “Nothing about us without us”
- Member economies should leverage the combined strength of indigenous and broader global knowledge with broader science.

A key outcome of the Workshop is the provision of a virtual toolkit that comprises resources for all member economies and is hosted by the New Zealand Ministry for Primary Industries. This is intended to be a ready reference for economies.

A total of 142 participants and speakers registered for the Workshop (82 (59%) female and 60 (42%) male) from all but one of the 21 APEC economies. The post-Workshop evaluation (benchmarked against a survey conducted at the time of participant registration) was completed by 55 participants. The assessment of the Workshop by participants was very positive, with 100% of respondents stating their overall understanding of issues impacting services across the food value chain had improved as a result of the Workshop sessions. All but six respondents (10%) stated they had learnt a good amount (36 or 66% of respondents) or a huge amount (13 or 24% of respondents).

Participants were asked which Workshop themes they felt they had learnt the most about during the workshop sessions. The top five themes were:

- Indigenous Perspectives on Regulatory Barriers to Success (Dr. Emily McAuley, Marco Nanculeo and Dr. Meika Foster)
- COVID Impacts on Food System Services (Dr. Emily Chang)
- Overview on Food System Services (Shamubeel Equb)
- Food System Services - Policy Settings (Lee Ann Jackson)
- Regulatory Barriers and Issues (Japnit Singh)

When asked about ways that the project team could have improved the overall conduct of the workshop, respondents made a range of suggestions and comments. Overall, responses were hugely positive, with many stating that they especially enjoyed the diversity of speakers, and that the online format made the sessions more accessible to a wider audience. There was resounding support to continue workshops of this nature to encourage ideas, share experience, success stories and best practices. Others noted technical difficulties they had encountered, and several would have liked more participant involvement. Other topics suggested that might have been covered included more success stories and best practice examples, how to upscale production, food waste and climate change impacts.

Join, Work, Grow. Together.
Haumi ē, Hui ē, Tāiki ē.



INTRODUCTION AND BACKGROUND

Introduction

For APEC, food security is a primary concern in the region. The food security agenda demonstrated this concern by adopting the APEC Food Security Road Map Towards 2020 in 2014. The Roadmap has sought to build an APEC Food System that “efficiently links together food production, food processing and consumption to meet the food needs of our people as an essential part of achieving sustainable growth, equitable development and stability in the APEC region.” Furthermore, according to the OECD Trade in Value Added (TiVA) Database, the value created by foreign and domestic services together ranges from 17% to 59% of the total value added in exports across 20 APEC economies in the food products industry, and from 8% to 53% in the agriculture, hunting, forestry and fishing industries¹. This highlights the important contribution that services can play in adding value to exports and wealth creation.

Services can play a valuable contribution to support and lift productivity and food safety thereby contributing to food security. This, however, can be inhibited by regulatory barriers and limited service provision². Examples include financial services, access to insurance, supply chain limitations, technology uptake along the food value chain, and enablers to increase yield and sustainability goals. Challenges such as limited awareness and capacity, state of infrastructure and limited supportive regulations may affect the adoption of ICT technology³ and contribute to lost or wasted food. Approximately one third of the food produced for human consumption is lost or wasted globally throughout the entire value chain from production to final household consumption.

APEC Leaders identified in the APEC Services Competitiveness Roadmap 2016-2025, that action was needed to progress the facilitation of services necessary to improve the regional food system. This would contribute to access to safe, high-quality food supplies across the Asia-Pacific.

The Policy Partnership for Food Security (PPFS) was tasked with leading action on this issue which led to the development of the PPFS Services and the Food System Project. This workshop represents the completion of ASCR Action 14 and will therefore make an important contribution to progress under the ASCR in time for the ASCR’s Mid-Term Review in 2021.

¹ APEC Policy Support Unit Report on “Insights on the Regulatory Environment within APEC Economies and Its Impact on Trade in Services in Food Value Chains, August 2019, page 6

² Ibid

³ Ibid, page 7

The Services and the Food System Project was aimed at developing a shared understanding of the impact of the current services environment on those engaged in the food supply chain (development, production, processing, distribution and sales) of the agriculture, horticulture and aquaculture sectors.

Identifying what the barriers and opportunities are for services involves a coordinated and collaborative response by economies. The focus is to address issues that lead to improving food security and the regional food system, as well as regional economic integration. This requires a “whole-of-government” approach effort, as the formulation of services related regulations usually entails the participation of several agencies⁴. This underpinned the value and importance of conducting the Services and the Food System Virtual Workshop, recording this in a report and providing a virtual tool box of the presentations and related videos.

The specific objectives of the Workshop were to:

- Further identify barriers and opportunities being faced by APEC economies in services engaged in the food system and their contribution to Regional Economic Integration.
- Examine the effect of the global pandemic of Covid-19 on services along the food value chain and identify areas that can be enhanced to build greater resilience and how it may contribute to the recovery of the APEC regional food system.
- Develop recommendations for policy settings and capacity building activities that address issues to improve access to and the trade in food related services thereby improving food security and the regional food system, including Regional Economic Integration.

Background

At the time of planning for the Service and the Food System workshop, the events of the global Covid-19 pandemic were identified as having a significant effect on producers and consumers. The [Ministers Responsible for Trade Statement](#) (5 May 2020) and APEC publication [APEC in the Epicentre of Covid-19](#) (April 2020) highlighted challenges experienced along the food supply chain and called for international collaboration to address issues. It was timely to examine the shock caused by Covid-19 and assess the effect that it had had on the services along the food value chain. The hope was to explore practical insights into improvements to the provision and regulation of services and better understand the choke points and areas that needed to be addressed. The intention was to describe steps to build greater resilience into

⁴ Ibid, page 8

the regional system and identify actions that would result in advances in food supply and food security with a view to providing recommendations to the PPFS and Group on Services.

The result was the establishment of the Services and the Food System Project to respond to Covid-19 in relation to services in recognition that they will play an important role in recovery of the regional food system. The project was funded from the APEC general fund and supported by the economies of Australia, Chile, China, Chinese Taipei, Malaysia, Singapore, United States and New Zealand. The budget developed as part of the project proposal was designed to cover speakers, facilitator (MC), coordinator, scribe video production. The resultant Workshop Program is at [Attachment A](#).

The intention throughout was to try to achieve a gender balance in terms of both speakers and participants. This, alongside the wide range of expertise across the food chain, allowed for a platform where a diversity of voices were able to speak to some of the key issues impacting the APEC food system from each of their unique perspectives.

Of the 17 speakers, MC and Panel Moderator engaged, 8 (41%) were female and 11 (59%) male. Across the four Workshop sessions held on four consecutive days, participation topped 142. The gender spread across all participants including speakers was 82 female and 60 male. See Table 1 for the speaker and participant gender spread.

All APEC economies were represented except for Papua New Guinea.

Table 1: Attendee (Speakers/Participants Registered at 29 April) Summary Table

	Female	Male	TOTAL
Speakers, MC and Moderator	8	11	19
Participants	74	49	122*
All Attendees	82 (58%)	60 (42%)	142

Note *One participant did not indicate gender

Speakers and participants were drawn from 20 APEC economies and 1 other agency, the OECD. The biographical notes of speakers, MC, Moderator, project overseer and project coordinator are at [Attachment B](#).

In seeking participants from member economies, care was taken to emphasise particularly the importance of gender balance in the Administrative Circular, to send a reminder to economies about registering to participate and extending the period of registration to encourage participation.

Once speakers were identified, they were provided with a formal letter confirming their participation, information about scope of presentation in the particular theme area and information about logistics and registration. They were also contacted by the MC individually for a short discussion on their topic to build familiarity with their scope by the MC and comfort for the speaker with the prospective Workshop conduct.

The core team liaised regularly in the lead up to the Workshop with the New Zealand Ministry of Foreign Affairs and Trade coordinating team in relation to the virtual presentation and conduct.

WORKSHOP PROCEEDINGS

DAY ONE

Opening

The **Opening of the Workshop** mihimihi (welcome) was provided by **Mr Raniera Bassett**. He read a **karakia** (prayer), supported by **Ms Shelley Easthope** and **Mr Danny Cowan**, and joined by **Ms Keri Iti**, they sang a **waiata**. The karakia:

Kia hora te marino kia whakapapa pounamu te moana Hei huarahi mā tātou i te rangi Aroha atu, aroha mai, tātou i ā tātou katoa Hui ē, tāiki ē!	May peace be widespread, may the sea be like greenstone A pathway for us all this day Let us show respect for each other, for one another Bind us all together!
--	--

Raniera recited a **Whakatauki : Proverb**

*Hutia te rito o te harakeke, kei hea ra te kōmako
 e kō;*

Whakatairangatia, rere ki tai, rere ki uta;

Mau e ui mai ki au, he aha te mea nui o te ao;

*Maku e ki atu, he tangata, he tangata, he
 tangata.*



*If you were to strip away the centre root of the flax plant, where would the kōmako
 find sustenance;*

It would search to the sea and to the land without success;

If you were to ask me what is the most important thing in the world,

My reply would be – it is people, it is people, it is people!

He wished the Workshop speakers and participants well for the coming days and closed with a waiata, He Honore:

He hōnore, he korōria Maungārongo ki te whenua Whakaaro pai e Kingā tangata katoa Ake ake, ake ake, Āmine Te Atua, te piringa, Toku orange	Honour, glory and peace to the land May good thoughts come to all people for ever and ever, Amen The Lord is the refuge and my life.
---	---

A welcome was then provided from APEC, New Zealand and the chair of PPFS, **Mr Phillip Houlding**. He said 2021 was a big year for food in terms of thinking about the recovery from COVID-19, and the disruption to the food supply. He noted the United Nations Food System Summit would be held later in 2021, which gave recognition to food being a high priority in a number of international engagements this year. New Zealand's theme for their APEC host year is 'Haumi ē. Hui ē, Taiki ē. Join. Work. Grow. Together.' Clear instructions for APEC New Zealand was that the focus should be on what we could do together as 21 economies with shared interests.



Earlier discussions in PPFS this year had made it clear that food system issues were complicated, and came with a lot of internal contradictions that needed to be worked through. More production was needed but with less impact on the environment. There was a need to respect culture and traditions but also embrace new production means and perspectives. A new Food Security Roadmap with clear service settings was needed. Competition in the system and targets needed to be worked through together with a concentrated effort. It would be particularly important to remind APEC officials of food security and services. The ambition for New Zealand in 2021 was to increase the involvement of private sector in this workshop. Mr Houlding thanked the economies who had co-sponsored the workshop, wished everyone good luck and looked forward to the outcomes.

THEME ONE: OVERVIEW OF FOOD SYSTEM SERVICES

An overview of the food system and the global economic impacts of Covid-19 was intended to set the scene for the four days of the Workshop.

Keynote speech Mr Shamubeel Equb, Economist, New Zealand on “Food System Services – Economic impacts”

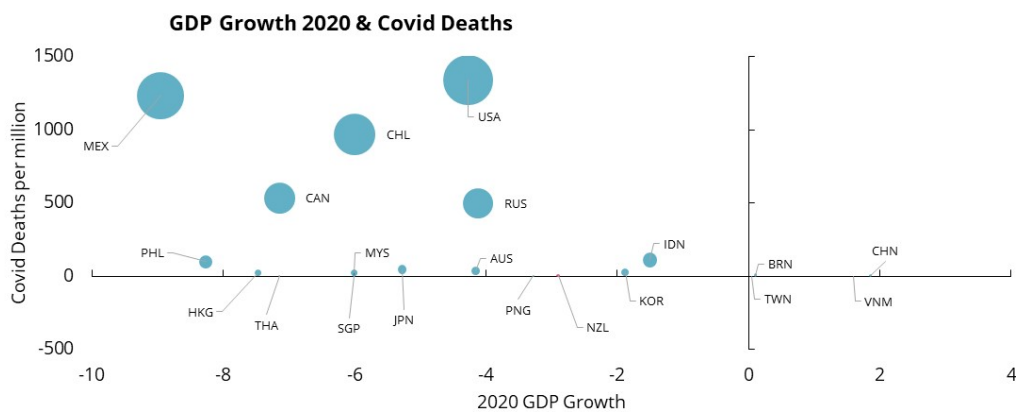
Mr Shamubeel Equb opened by commenting on the disruption caused to populations and economies of Covid illustrating this with Fig 1, that prioritising the health system was key. Immediate disruption was only a small part of how COVID-19 was changing our world. It also demonstrated the ability of governments to be interventionist and 'to do something' different' in the face of such an event such as the level of fiscal impulse and impact on people's movements and freedoms. The principles



of economics and public policy had run their course and change was occurring in industrial and fiscal policy, the role of government and the absence of a rulebook for the global economy. Experimentation was occurring such as shared research and development (in vaccine development and production) and real life value of working together for common goals.

Figure 1 Covid Disruption

Covid disruption



Source: Ourworldindata.org; IMF WEO Oct 2020; Sense Partners

1

The reduction in the number of people globally living in extreme poverty had rapidly decreased over the last 100 years but vaccines were rolling out fastest in rich countries. So the collaboration on vaccine production did not extend to implementation. The political will and ability to work together was not assured. Not all was pessimism. We had seen a rapid rise in GDP per capita as an indicator of economic growth. All the ingredients were there for success, but we had to collaborate on the consequences of growth particularly concerning the environment. We could not continue doing things the way we always had and investment in infrastructure, particularly in relation to food, was going to be fundamental to many aspects, especially emissions.

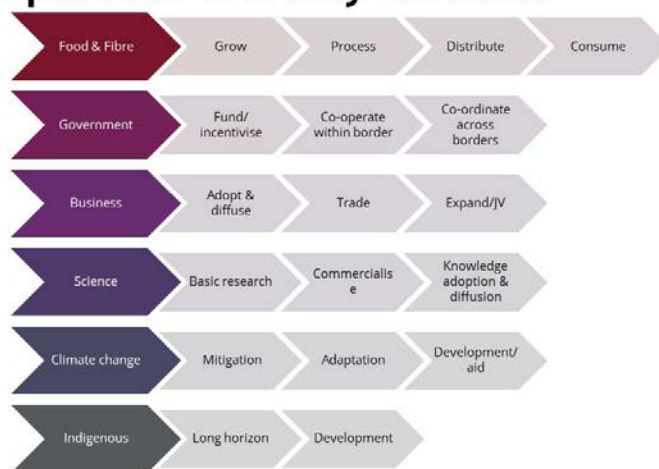
A strong structural force that had been driving growth in the background to date and which could drive a more sustainable economic growth was technology (see Fig 2). By way of example of the force and speed of technology now, Shamubeel referred to communication – the landline took 50 years to become mainstream, the home computer took 17 years, the internet 13 years and the smartphone 7 years. The inequities were the unequal distribution of these technologies. Adoption was key in economies – we had to prioritise working together, taking the best ideas and the best technology and spreading it to places where it would have the greatest impacts. It was not invention but distribution.

For food, it was not just about production but delivery in culturally appropriate ways. Humans were incredibly capable of working together – there was a “vein of love and trust that works through everything”. A lot of the barriers were captured in social and political licence: the rural-urban shift, the food share of jobs. We needed to look at the opportunities these presented.

Globalisation was changing and presented opportunities. Since the 1950s there had been a huge and increasing trajectory in export globalisation but that had slowed/plateaued and what was happening now was that food security (having reliable access to a sufficient quantity of affordable, nutritious food) was changing the ‘composition of exports’ and how we exported – and the supply chain. Productivity would come from changing the way we did things and governments had a huge role to play in that. APEC was in a unique position to collaborate in this area. It needed to be clever, more precise and much more deliberate in this area and coordinating governments across borders was the future (see Figure 2).

Figure 2 Changing the way we do things

Consequences & a way forward



Coordinating across business was very necessary for the supply chain too. It was businesses that took the new technologies and adopted and defused them in their own operations as the forerunners of trade. Joint ventures and investment ensured knowledge sharing that was so necessary. The role of science in the food system was critical – to grow food, get better yields, address climate change, food waste, transport and deal with obesity and under-nutrition. Science could break down political barriers and borders but only if it was able to be commercialised, adopted and diffused. APEC could nurture this. Investment in green (sustainable measures) and building back better, fast tracking developments, changing the language of climate and especially looking at this through an indigenous lens with indigenous

businesses and communities – their long horizons, affinity with land and water, and application of community investment and development. We had the tools and ability to do things differently and now we had the opportunity.

Shamubeel identified four areas of focus:

- prioritise working together, taking the best ideas and spreading it to places where it would have the greatest impacts. It was not invention but distribution.
- impact of food security. This would change the ‘composition of exports’ and how we exported – and the supply chain.
- The role of science in the food system to grow food, get better yields, address climate change, food waste, transport and deal with obesity and under-nutrition. Investment in green and building back better,
- Looking at all through an indigenous lens with indigenous businesses and communities – taking the long horizons, affinity with land and water, and application of community investment and development.

Subsequent speakers looked at these points from specific perspectives and the possible opportunities that would improve resilience, food security and economic growth in the food supply chain.

THEME TWO: COVID IMPACTS ON THE FOOD SYSTEM AND SERVICES

More specific comments of the impact of Covid-19 on the food system and services was sought from an economy perspective.

Impact of Covid-19 – The Case of Chinese Taipei Dr Ching-Cheng (Emily) Chang, Professor, National University, Chinese Taipei

Impacts – Dr Chang provided an overview of global impacts illustrated by: trade volume data which contracted by 3.8% in 2020; Merchandise trade volume contracted by 5.3%; and services trade which took the largest fall due to mobility restrictions and social distancing. All segments of the food chain were impacted together with both supply and demand.



As a result of Covid, four key triggers were observed: panic buying, border disruption, labour and logistic disconnect and consumer behavioural change. In Chinese Taipei, Covid was proactively well-contained through travel alerts, home quarantine, contact tracing and a rationing system for masks. As a result, the overall economy grew 3.1% in 2020 and 4.6% in 2021. Assisted by increased infrastructure projects, stimulus vouchers, online shopping and other fiscal stimulus measures.

In relation to food, wholesale trade decreased but retail increased with the greatest impact being on catering which decreased by 29% due to restaurant closures. All rebounded in 2021. The responses can be described as threefold:

- early prevention measures – sanitation, education, surveillance
- damage control – relief packages, job and wage assurance
- Fiscal stimulus – market promotion, domestic market and restaurant vouchers, online platforms.

Dr Chang presented three case studies to illustrate measures.

Case 1 – Mango exports to Japan – these continued due to cooperation on Sanitary and Phytosanitary (SPS) procedures (some oversight waived) and industry and government working together on transport arrangements. In future, a “whole of government’ approach to improving the regulatory environment is needed to improve supply chains.

Case 2 – Changes in Consumer behaviour – the ‘dine in’ experience that combines eating out, home cooking and meal replacement is the new normal offering greater freedom, variety and functional health. This required more online services and delivery arrangements especially for at-home workers, the very young and the elderly who chose not to leave their homes.

Case 3 – Bundled services provided by e-commerce – accelerated by Covid with more finance platforms and home delivery. Demand for online food and shopping services increased even though Chinese Taipei did not impose a stay-at-home order.

In conclusion, Dr Chang recommended:

- Promoting public-private partnerships to improve food security through greater resilience including investment in ICT-related infrastructure
- Implement targeted measures to assist actors along the food supply chain especially workers in affected industries and vulnerable populations

- Improve the regulatory environment affecting the provision of services along the value chain through a “whole of government” approach
- Promote e-commerce and bundled services as well as partnering with retail SMEs and delivery intermediaries – we need to embrace digital opportunities as well as training and capacity building assistance to bridge the digital divide.

Addressing these areas would take combined effort but was critical.

THEME THREE: SUPPLY CHAIN INTEGRITY

The core of the food system framework is the supply chain and the integrity of the supply chain is a vital component for trade. Two New Zealand examples of the supply chain operation were presented under this theme on Day One.

Dr Garry Udy, Specialist Advisor, New Zealand Ministry for Primary Industries

Dr Udy presented a video clip on the supply chain integrity in New Zealand, its history and the predominant actors of meat, dairy, seafood and horticulture. Garry asked participants to note, in particular, the public-private partnership approach, its extension into indigenous foods and food production and the focus on outcomes. He clarified that this was about the integrity of component parts of the food production system through the key industry sectors and that the filming was primarily pre-Covid.



The video clip covered the value of outcome based legislation that is clear and simple to deliver regulator confidence in the system and consumer confidence in the product. It also outlined the principles underpinning the system:

- Removal of subsidies to encourage more innovation and more productive farming practices and achieve efficiencies and sustainability leading in turn to industry growth, productivity and profit
- Good agricultural practices based on international standards (Codex, OIE and IPPC)
- whole of system outcomes with science and appropriate mechanisation for efficiency and effectiveness all risk-based using HACCP principles
- Public private partnership involving industry associations, and research agencies. This was particularly illustrated with Maori agri-business
- Farmer-led starting with cooperatives to demonstrate ability to become profitable and continuing to lead the way in innovation and change
- Research and innovation to contribute to growth, development and sustainability

- Adaptability to change – also farmer led initiative to diversify, improve and move forward in value-added products, Intellectual Property and trade-marks especially with native foods eg mānuka honey
- System integrity within both government and industry such as food safety, legitimacy and integrity of providers, quality, milk price and economic integrity, sustainability, and integrity of trade.

In discussion, Dr Udy noted the three keys to system integrity as being government and industry roles to deliver common end-goals with food value to the economy; industry research supported in part by government funding to understand and meet consumer needs; and integrities at every step – legislation, economics of the system, sustainability, innovation and development and delivery.

Taketake e Tāne – Protecting and enhancing our natural resources Dr Meika Foster, Chief Science Advisor, Wakatū Incorporation, AuOra, New Zealand

Preserve and enhance taonga – legacy – now and for future generations. Dr. Foster provided a snapshot of Wakatū (an incorporation of four tribal groupings covering 4,000+ people, an asset base of NZ\$350m and applying manaaki (care for people and culture), whenua (custodian of land and water), kono (food and beverage basket) and AuOra (delivery of health and wellness solutions to enhance quality of life and the natural world). Wakatū has a 500-year intergenerational vision and is driven by six values including the four mentioned above.



Meika showed a video clip called the Kono Sand Story focusing on the iconography of the 'K' that references Māori art and the junction between the natural and human world and the lines that surround us from beaches to rows of planted crops, topography and the relationships with the world. Four is an auspicious number interlacing the icon – the four directions of the wind and waters, the kinship groups, kono (the woven flax basket of food) and family and friends, warmth of heart and generosity of spirit. The K is a mark of quality and trust.

Dr Foster then spoke about AuOra, the Te Te Tau Ihu Intergenerational Strategy where traditional knowledge and western science has equal validity and sit side by side. Dr Foster then talked about two programmes that illustrate the Wakatū Incorporation approach especially AuOra.

Programme 1 – Indigenous organisms or Taketake e Tāne with the aim to reconnect whanau (families) to their whenua (land and water), capturing information related to customary use, science and biological functionality, developing new models and frameworks to ensure best practice and protection of indigenous organisms and traditional knowledge and identifying potential value-add commercial solutions through unique bioactive ingredient and functional food export offerings.

One outcome has been the establishment of Te Taihū Native Plant Library, the most comprehensive regional library in New Zealand that catalogues all the vascular plants indigenous to Te Taihū region (2,800 native plant taxa, around 60% found in the region and 138 endemic/exclusive to the region and over 200 not formally described).

Protecting Indigenous Organisms – under international law (conventions and protocols), domestic legislation and policy and the Wakatū Access, Utilisation and Benefit Sharing (ABS) framework. This needs domestic ‘bioprospecting’ policy. As a result of its initiatives, Wakatū is the first Maori business to be granted observer status at the WIPO IGC (World Intellectual Property Office of an Intergovernmental Committee on intellectual property, genetic resources, traditional knowledge and folklore).

Programme 2 – Te Anga Whakamua: High-value Industry Pathway with the aim to develop a stream-lined high-value industry pathway to engage effectively with science, technology and innovation in the development of bioactive ingredients / functional foods and beverage solutions for health and wellness. This is in partnership with New Zealand company, Chia Sisters, and collaboration with the MPI Maori Agribusiness Team, The Supply Chain Integrity Programme (SCIP) and a range of government agencies and science partners. There is a strong customer pull and consumer focus and scientifically validated health benefits. This is coupled with a Trade Capability Programme covering the supply chain to the consumer and the relationships necessary for that delivery particularly the priority areas of focus. Challenges identified that need solutions – prioritizing protections; registration of indigenous ingredients in markets; alignment of NZ food safety systems with other economies (eg food safety and risk assessment criteria); and data on functionality.

Panel discussion on Supply Chain Integrity

Moderator: Pat English; Panelists Dr Udy, Dr Foster and Dr Ryan Donovan

Dr Foster expanded on registering a product for market. She said that Wakatū was looking to gain market access to a specific economy for a specific ingredient, but the indigenous plant which was the ingredient source had already been reviewed by that economy and a prohibition put on its use on food. The prohibition resulted in a misunderstanding of classification of the plant. The example illustrated some of the challenges Māori exporters faced. It was concerning that a taonga (a treasured possession) could be registered in another market overseas without the New Zealand Government's knowledge. This emphasised the importance of engaging with indigenous communities regarding indigenous flora and acknowledging the communities' and Government's role in protecting species



Dr Donovan noted that in some economies, organisms could not be registered as a food and as a pharmaceutical product. Risk safety requirements were required around food. It was a big challenge that other economies used different risk assessment processes.

Mr Robert Patzer from Agriculture and Agri-Food, Canada, noted the integration and coherency of the aspirations of Wakatū and how close the work between government and the private sector was.

In response to a question about the interventions made that helped to encourage the weaving of indigenous and western knowledge systems, Dr Foster said it included pan-government policy. Emphasis was needed for government-funded research that focused on Māori development with scientists needing to meet certain criteria. Increasingly, Māori organisations were becoming very savvy about science and business. A lot of work was being undertaken to try to find new ways to do things and to use the knowledge they had to build capability in families and communities as a means of succession planning. There was a lot of work still to be undertaken.

Dr Donovan also noted the need to understand each other. The key elements drawn from the work of Wakatū was finding commonalities and being able to provide funding. On an international level this had the potential to resolve other issues.

Dr Foster noted, in response to a comment made by a participant about consumer preferences, that the AuOra model had a strong focus on working with customers and addressing the needs of the consumer both within New Zealand and overseas. Dr Udy added that there were a lot of species that had potential to deliver novel foods or ingredients. The challenge was to find the active components in new indigenous species. Further, Dr Foster noted the company had strong relationships with other communities around the world. As part of the ABS work, they explored what other indigenous communities were doing in connecting with private partners and how to protect the work they were doing. Wakatū had reached out to the Peru Potato Park resulting in shared learnings. In addition, work had also been explored in China and Australia. There was a need to protect the intellectual property of these knowledge systems, properly and ensure that the benefits realised from them were shared with indigenous communities.

WORKSHOP PROCEEDINGS

DAY TWO

THEME FOUR: REGULATORY BARRIERS AND ISSUES

Regulatory barriers, challenges and opportunities were essential to understand in order to move forward. APEC economies collectively needed to discuss these and find ways to remove barriers, appreciate the challenges and seek out the opportunities for change.

Food System Barriers and Opportunities for Food-related Services: Suggestions for Policy Making

Mr Japnit Singh, Deputy CEO, Spire Research and Consulting, Singapore

Spire Research undertook a research project for APEC and PPFS in 2020 titled *Services and the Food System: Business Insights on Improving Services in the Food System using Illustrative Case Studies from the Horticulture (Fruit and Vegetable) Sector*. The objectives of the project were: to identify barriers and opportunities faced when engaging in food-related services; to develop policy settings and capacity building recommendations to improve access to food-related services; and to provide insight into how the Covid-19 pandemic has affected food security.



Indonesia and Mexico were selected based on a range of criteria (size and productivity of sector, importance to economy, efficiency and sustainability of food systems and technology adoption) to explore horticulture across APEC economies. The method included primary research (interviews) and secondary research (analysis of published papers). Japnit presented the key findings of this research project during the Services and the Food System Workshop in April 2021.

Main findings

Opportunity 1 – Improve supply chain efficiency. Fruits and vegetables change hands multiple times and an excessive number of intermediaries separate farmers from downstream markets. With the COVID-19 pandemic's social distancing restrictions, farmers could not rely on intermediaries as before and were pushed to seek new markets. The system is otherwise characterized by food wastage and a lack of transparency and traceability.

Opportunity 1 Recommendation – e-commerce initiative – develop platforms to close the gap between farmers and markets. This could be achieved in collaboration with the private sector by leveraging existing platforms (e.g., Tokopedia in Indonesia or Mercado Libre in Mexico) with government to get started but eventually, to be commercially sustainable without government intervention.

Opportunity 2 – Upgrade transportation and logistical management, connectivity and capacity. Nearly one fifth of expenditure was spent on transportation services. Transportation is an essential service that consumes a large proportion of stakeholder expenditure. Poor connectivity to rural areas, a lack of cold storage facilities, and a reliance on traditional transportation (e.g., open-air trucks) all make it difficult for farmers to access their markets.

Opportunity 2 Recommendation

a) – Develop an integrated logistics park (an industrial area for activities related to transport, logistics and distribution of goods). Governments might spearhead the initiative and **collaborate with the private sector to launch several decentralised hubs** that will increase accessibility

b) Improve transport infrastructure – Creating and enhancing strategically located road infrastructure can facilitate efficient and effective transportation networks and benefit stakeholders throughout the supply chain. **Identify zones of significant supply and demand which are under-served by roads** or alternative transit routes like waterways.

Opportunity 3 – improve awareness knowledge and technical know-how of farmers. There were some government schemes but uptake low (>30%) due to qualification thresholds and difficult application processes.

Opportunity 3 Recommendation

a) – Explore public-private partnerships to offer extension and training services to farmers.

b) Promote agricultural mechanisation tool sharing among stakeholders.

Challenge 1 – Shrinking workforce and over-reliance on manpower.

Challenge 1 Recommendations

a) Encourage uptake of technological tools (especially for education and extension) and automation practices.

b) Government-led industry collaborations to foster automation in food production and distribution.

c) Encourage adoption of seasonal work arrangements **to accommodate planting and harvest peaks** to assist rural producers when the supply of local labour falls faster than demand.

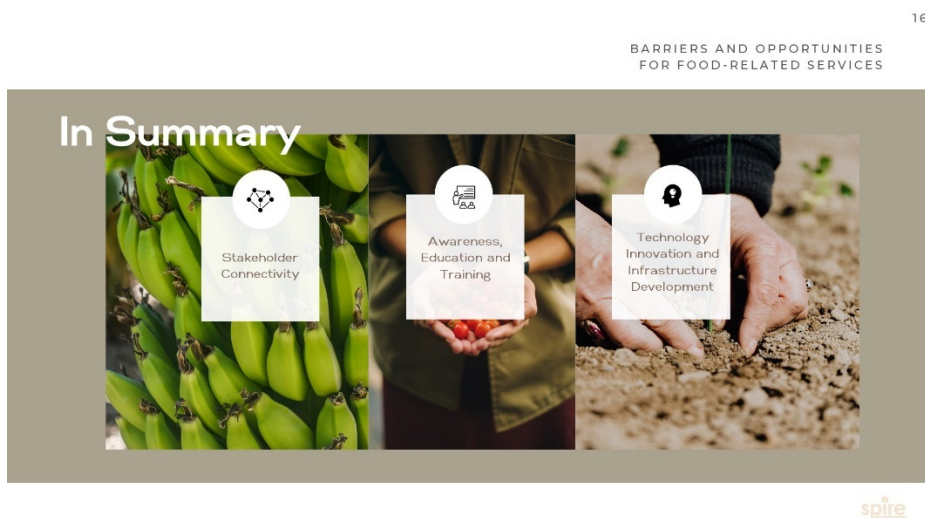
Challenge 2 – Lack of sufficient financial reserves. The COVID-19 pandemic highlighted businesses' need to be financially prepared for long-term (years-long) and not just short term (months-long) emergencies.

Challenge 2 Recommendations

- a) Provision of temporary interest-free plans, payment deferrals and simplification of banking requirements eg support packages.
- b) Collaborate or provide fintech companies with avenues to promote their services as alternatives to traditional lending. Active public-private collaboration and engagement is required to **identify opportunities on how to best manage the adoption of fintech solutions while benefiting all stakeholders.**

The overarching conclusions were a need to improve Stakeholder connectivity, Awareness education and training, and Technology innovation and infrastructure development (see Figure 3).

Figure 3 Summary Conclusions



THEME FIVE: PRODUCT INTEGRITY, TRACEABILITY AND THE FOOD COOL CHAIN

While the core of the food system framework was the supply chain, delivering products that met expectations in terms of both food safety and claims was essential. Traceability was key to both aspects.

Integrity in product traceability

Ms Valentina Tripp, CEO, Davey Water, Australia

Valentina drew on why everyone needed to work at enabling fair, transparent, and sustainable Trade and Systems across the region. She indicated she would reference Fairtrade and Organic certification systems, how they worked and the challenges they faced, in particular how policy makers could help remove the major roadblocks that would enable free and fair trade.



With a background in trading goods, Ms Tripp brought a deep understanding of supply chains to the Workshop discussions. Her immediate past role with Murray River Organics was an example of ethical and sustainable farming systems. Consumer demand for organic and sustainable goods was immense, annual growth was in double digits and the supply chain was vital to integrity. The biggest challenge was the lack of regulation. For example, whether a product had 5% or 100% organic content, it could still be called 'organic'. Yet organic farming was more costly (yields could be lower) and farmers needed to compete on a level playing field to generate appropriate returns for the effort. It was a belief system as well – in consumer health, and sustainability for planet health. Regulation impacted opportunities for export. This was the main driver for New Zealand's nascent regulation.

Valentina also said consumers wanted greater clarity about product claims of 'organic'. Other challenges were multiple overseas frameworks and auditors. This could result in audits compounding to several weeks of the year, high costs and time/resources and extensive complexity of some frameworks. The solution was harmonisation and a single [shared] audit. In the case of export to the US that included composite products like chocolate sultanas, each and every ingredient sourced had to be certified to the USDA standard. How could this be made easier? There was a need for access authenticity and certification standards.

Valentina also talked about Fairtrade, a 30+ year agency covering 1.7m farmers across 74 countries and selling into 120 economies. It was very active in Europe ensuring markets

especially for very small single operators at a fair price. This contributed to long term sustainability of the business and delivered positives for consumers and the planet. Some in Australia were sponsored by aid agencies as a means of reaching those in poverty in the Asia-Pacific region. They continued to need help. There was a lot of overlap between Fair Trade and organics: 60% of Fairtrade farmers were certified organic – the base values and philosophies were aligned.

Valentina made reference to “Transforming Trade, Transforming Lives” (<https://www.2iis.com.au/fairtradeintheasiapacific>) research undertaken and published as Fairtrade ANZ when she was Chair (co-sponsored by the Australian Department of Foreign Affairs and Trade and the New Zealand Ministry for Foreign Affairs and Trade).

She then turned to water and her most recent experience with Davey Water. She noted the significance of water in the dry Australian continent and the ongoing challenge of this. Demand continued to grow, supply continued to shrink and what was needed was a better way of traveling. This was an area within which there was already collaboration and in which more could be done. She suggested innovators needed to be looked to, citing developments in Israel as a good example. She believed water security was as important as food security. Access to clean, potable water was vital.

In conclusion, there were three areas to focus on:

1. Leadership role for Australia and New Zealand in domestic regulation
2. Leveraging existing systems eg Fairtrade, and platforms needed to be accelerated and markets aligned across the region
3. Water access and quality needed consideration.

Cool Chain and Traceability

Mr Mark Mitchell, Chairman, Australian Food Cold Chain Council (AFCCC)

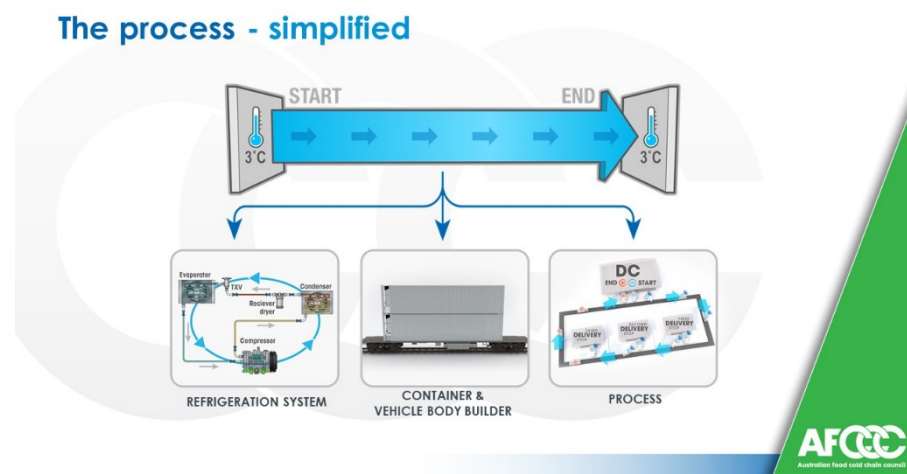
Mr Mark Mitchell provided an overview of the food cold chain, and an introduction to some of the guiding principles and requirements necessary for its improvement in the APEC region.

Mark described **the cold chain** as “a temperature-controlled supply chain of separate refrigerated events sufficient to achieve continuous temperature control of perishable goods. An unbroken, or compliant cold chain is an uninterrupted series of these events used to store and transport perishable products from one destination to another.”



The modern cold chain was based on HACCP principles (Hazard Analysis and Critical Control Point) which identified food processing and delivery procedures at their individual steps to ensure food quality and integrity, including temperature, was maintained from the beginning to the end. A cold chain **critical control point** was where there was no temperature control, which typically was those areas of the chain where the goods were handled from one control point to the next or

transported in an asset with inadequate controls. Temperature verification/checks must occur at all control points/steps during the cold chain process. The simplified process was illustrated by Figure 4 Simplified Cool Chain Process.



When food was stored and transported at its correct temperature, losses were reduced and shelf life was honored. Multiple changes in the handling of temperature across the supply chain made verification harder, temperature abuse more common, and avoidance of

responsibility easier whereas a single owner took full responsibility and greatly reduced those risks.

Mark then discussed the supply chain and critical control points in the process. He described the very wide range of hardware temperature testing and recording equipment currently available. He stressed that product temperature monitoring needed to be continuous and that 'end point testing only' was not good enough. Automatic systems were best. Smart product probe technology was available, but that journey temperature mapping was second best to probing. However, to be effective, it needed to be continuous and automatic and the location of temperature acquisition needed to be meaningful.

Good air flow in containers or storage assets produced heat convection which was crucial for maintaining product temperature in transport. Moving air was forced convection while still air was free convection. When air flow was constricted, such as when palletised boxes contacted the walls of the refrigerated container or the whole pallet touched the wall or pallets were stacked too close, cool air flow was prevented and temperatures rose. In summary, packaging, packing, stacking and wrapping all played a role in air flow and product temperature compliance and any of these could block airflow sufficiently to negate convection and introduce conduction.

The AFCCC promoted an online 'Cold Chain Professional Development Short Course' that covered all the foregoing found at <https://afccc.org.au/training.html>. Other resources included:

- the Australian Cold Food Code comprising a series of booklets covering principles, temperature monitoring, thermal requirements and thermometer use <https://afccc.org.au/cold-food-codes.html>
- FAO Guidance to governments on the application of HACCP in small and/or less-developed food businesses <http://www.fao.org/3/a0799e/a0799e00.htm>
- Australian Department of Agriculture, Water and the Environment (DAWE) and Refrigeration Australia: *A study of waste in the cold food chain and opportunities for improvement* <https://www.environment.gov.au/waste-study-cold-food-chain-improvement-opportunities>.

THEME SIX: FOOD SYSTEM SERVICES – POLICY SETTINGS

APEC economies each set the policy frameworks for the food system. They also set conditions for the provision of services. At times the policies for these might not be connected or coordinated. This theme was to explore better policy making for services in the food system.

How Better Policies for Food Systems can Build Food Supply Resilience

Dr Lee Ann Jackson, Head of Division, Agro-Food Trade and Markets Division, Trade and Agriculture Directorate (TAD/ATM), OECD

Dr Lee Ann Jackson provided an overview of the OECD and the impact of Covid-19 on OECD supply chains commenting that most of the immediate shocks to the food supply were domestic such as consumer demand. She then discussed what were the challenges and achievements of food systems and the role of policies.



She noted that there was a triple challenge for food policies:

1. Food security and nutrition
2. Livelihoods
3. Environmental sustainability.

Policy settings are underpinned by practical principles:

- Awareness of possible synergies and trade-offs with other policy areas
- To rigorously evaluate possible interactions (not all are real, or big enough to matter)
- To remember that synergies and trade-offs depend on the choice of policy instruments
- When there are synergies, one instrument is usually not sufficient and the need to search for the best policy mix rather than a 'silver bullet'
- That resolving trade-offs is not a purely technical question, but involves value judgments.

Dr Jackson made it clear that support to agriculture was not effective at addressing the triple challenges above and could be counter-productive, through market distortions and stifling innovation from industry. Rather, investments were required to build resilience in food systems in the following areas.

Investment in research and development, rural infrastructure and biosecurity services.

Investment in these areas is non-distorting to the agri-food sector. She noted that many governments tended to over-spend on distorting support, but to under-spend on these key services by way of investment.

Investment in knowledge and innovation such as on the governance of agricultural innovation systems, research programming, complementarity of public and private investment, private contribution to research and development and innovation, farm advisory services and creating a stable, enabling policy environment.

Investment in transparency can help to reduce market uncertainty, expose bottlenecks and highlight risks. She gave the example of the G20 providing a platform of trade policies (the Agriculture Market Information) during a food price crisis to help governments avoid the urge to apply disruptive trade measures such as export restrictions.

The final comment was that more could be done to enhance cross-border cooperation and that while the Asia-Pacific did well in a number of areas (see Figure 5), it trailed Europe in all activities.

Explore all OECD data and analysis on food systems at www.oecd.org/food-systems

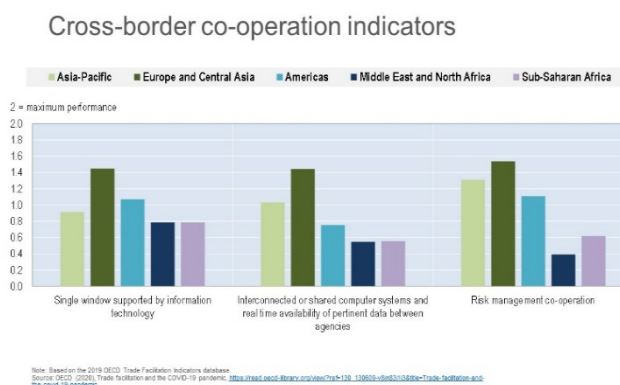
Participants can [sign-up to the OECD's agriculture newsletters](#) to receive monthly updates with the latest OECD briefs and publications. They can also consider:

<http://www.oecd.org/coronavirus/policy-responses/food-supply-chains-and-covid-19-impacts-and-policy-lessons-71b57aea/>

OECD (2021), Making Better Policies for Food Systems; OurWorldInData

Source: OECD (2020), Trade facilitation and the COVID-19 pandemic, https://read.oecd-ilibrary.org/view/?ref=130_130609-v8jn83j1j3&title=Trade-facilitation-and-the-covid-19-pandemic .

Figure 5: Cross Border Cooperation Indicators



WORKSHOP PROCEEDINGS

DAY THREE

THEME SEVEN: SUSTAINABILITY AND SERVICES

Sustainability across the food system was essential to food security and ongoing success. Providing services was one part of assisting the delivery of this.

Sustainability in Services Across the Food Value Chain

Dr Daniela Acuña, Sustainability Specialist, Ministry of Agriculture, Chile

Dr Acuña's opening message was that sustainability requires a balance across three areas: environmental, economic and social activities. Sustainability occurs where all three intersect/overlap, such that development meets the needs of the present without compromising the ability of future generations to meet their own needs". This requires recognition of the UN's 17 Sustainable Development Goals.



In terms of sustainability in services, sustainability to date had been focused on the productive sector but now it was also a challenge for the service industry. This needed due diligence and a sustainable supply chain, a focus in environmental sustainability noting the significant variability in the service industry. Services in the environmental area included recycling, energy management, input efficiency and carbon footprinting. Services in related social areas included customer welfare, employee health, safety, and well-being and fair labor practices. And in governance, fair marketing and advertising and business ethics and transparency.

Daniela then turned to the contribution of services to food value chain sustainability. These covered services in the following areas: *Financial, ICT, Transportation and storage, Distribution, Business, Environmental, Education and Certification*. She illustrated this with a breakdown of the services in the Chilean cherry industry (Bamber and Fernandez-stark, 2018) discussing sustainability across the food value chain. She noted the particular significance of financial services illustrated by the Doble Impacto 'Green loans' for clean energy, soil recovery, irrigation infrastructure and electromobility and the Banco Estado's sustainable investment in food systems, renewable energy and sustainable consumption and production.

Her final remarks were that:

- sustainability was a must
- innovative services were needed for sustainability
- private-public partnerships were key.

THEME EIGHT: MARKETING SERVICES AND SALES

Services in the marketing area of food systems have the ability to cross borders and facilitate trade throughout the APEC economies. The focus of the speakers in this area on technology is evidence of the significance of technology in the Food System.

Development of China's Digitised Food Trade Platform

Bi Yichen, Analyst, National Grains and Oils Trading Centre, China

Bi Yichen noted, by way of background, that China was a very large agricultural economy, feeding over a fifth of the world's population but with only 1/15th of the world's arable land. Although China's food production had grown over the last several decades, year-to-year fluctuations of food supply and prices were significant. Since the late 1980s, grain market stabilisation and food price inflation had been among the major targets of government policy. Yet in undeveloped rural areas, problems such as poor information flow seriously constrain small stakeholders' development. Information asymmetry was one of the primary reasons for the difficulty of small stakeholders' grain transaction behaviour. In recent years, both state and local governments had been actively organising various kinds of grain trading activities, promoting cooperation between enterprises and farmers. For those years, many grain enterprises had been more or less confronted with serious problems of capital shortage and financing difficulties.



On January 8, 2016, the National Grain Electronic Trading Platform was officially put into operation. It is the biggest platform for the standardized and unified national electronic grain trading. It aims to serve the state's macro-control of grain, and promote cooperation in grain production and marketing. The platform has about 40,000 member enterprises and small stakeholders from 30 provinces, covering almost all the grain industry in China. Up to now, 450 million tons of grain have been sold, with a turnover of more than 854 billion RMB.

The Grain Trading Platform has four components: the need to buy, to sell, logistics and financing. For buying and selling, a grain auction could be selected and entered at a designated time.

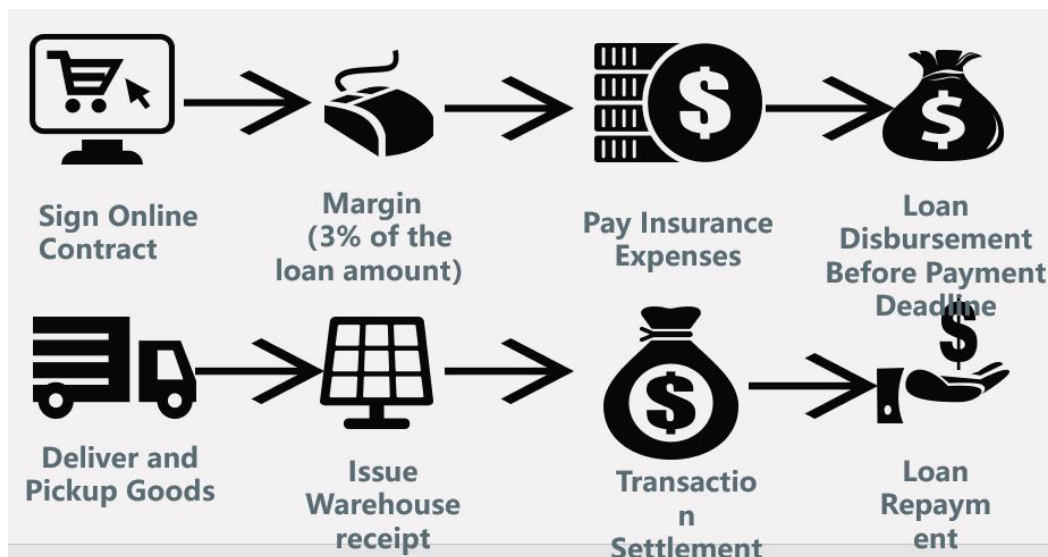
PPP in Financing Services

Nowadays, the competition among banks was fierce. Banks are willing to provide loans for small enterprises. In order to solve the financing problems of member enterprises and enrich the financing service of the platform, we have actively communicated with member enterprises and 12 banks/financial institutions for financing business. New financing products for member enterprises were developed through tripartite corporation, to help member enterprises to lower comprehensive loan cost, simplify the loan process, speed up the audit procedures.

The platform acts as an intermediary. Along with member enterprises and banks, it could lower, share and manage small business loan risks together. Real and effective information of member enterprises must be provided to banks, with the Grain Trading Centre's guarantees, meaning banks could reduce their time spent on information verification and allow enterprises to get a short-term loan without mortgage.

Three banks had responded positively and provided financing options.

China Zheshang Bank proposed to use block chain technology to build a financing subsystem for the platform. In combination with the bank's mature warehouse receipt system and bank's business management mode, differentiated warehouse receipt products could be provided. The funding is based on commodity stocked in the bank's controlled and authorized warehouse after submission of a warehouse receipt. The bank holds the grain stored in the warehouse until enterprises pay for the grain they purchased. This is illustrated in Figure 6:



Besides warehouse receipt financing, the Bank of Jiangsu could also provide bill financing services. Bill financing refers to a commercial activity in which an enterprise borrows funds from a bank using unmatured commercial paper as collateral.

The Grain Trading Platform has achieved the delivery of contract performance loans for large amounts with simple procedures at high speed with low interest rates, the provision to repay the interest and principal at any time and applying a loan performance guarantee insurance system.

Since April 2017, more than 4,000 grain financing contracts have been signed, totaling about 10.6 billion RMB. There are 609 enterprises from 25 provinces applied for the financing services, most of which are small-sized enterprises from small city or rural areas, with the highest financing amount of 21 million RMB and the lowest financing amount of 250 thousand RMB.

To further promote the financing services and benefit more member enterprises, more effort would be put into improving the financing mechanism, striving for financial policy support and strengthening the capacity to share risks. The programme for the future was to strengthen the top design, optimise the cooperation model, provide unified financial guidance/specifications, refine various finance programmes and integrate state-owned fund resources.

Insights from a Digital, Strategic and Branding Agency **Mark Tanner, Founder and CEO, China Skinny**

Mark Tanner opened with responding to why the company was called China Skinny. Skinny, means the inside scoop, the gossip. It always started a conversation, was slightly irreverent and that was the way brand was run. The company provides thoughtful marketing and digital strategy, branding and research services for the China market.



Mark talked on the future of food in relation to China which he saw as incredibly innovative, supporting world-leading developments in food and other categories and how it was creeping into the mainstream in China. He discussed the rich history of China and the advanced developments over 4,000 years. By 1949, when the revolution occurred, China was very advanced in many areas (eg irrigation and food production systems) and power shifted to the people but in 1958 the Great Leap Forward changed this to collectivism, sharing the land, working together and sharing equipment. However, by 1978, the yield per hectare per farmer

was actually lower than in 1949. This caused a reversion back to the days where power was given to the people, resulting in an 'unofficial' but more genuine 'great leap forward'.

Agriculture in China provided indicators and learnings. The most pivotal point since the 1950s was the Melamine event of 2008. This influenced government policy from that point on, bearing in mind that even as recently as 2011, the average dairy farmer had only 3 cows. Consumers had demanded, and government responded to, strengthening the supply chain and one of biggest changes had been e-commerce. It was bigger than all other markets in the world. It got a second wind in the Covid-19 pandemic – it accelerated online shopping in China with food supplies leading. Many had to go online to eat. There was now a much wider and broader customer base. A lot of the deliverers got stuck out of the cities so there was a shortage with food and beverage delivery which boosted direct selling.

One of the big issues had been attracting youth to stay or return to rural areas or rural ways which was a 'strange demographic' of an aging population. Now, more and more saw rural ways as 'kind of cool' – a mindset shift that had partly resulted through the emergence of social media influencers. He gave an example of one influencer who went back to her family in the economy and had broadcast a desirable agricultural lifestyle for youth through livestreaming. Live-streaming was huge in China and this particularly took off after Covid. Almost 800 million lives-treamers were active in China and spent almost US\$80bn on livestreaming.

One of the most exciting developments was in new-retail (online retail). By way of example, Mark recounted the story of the entrepreneur in Chengdu who went through the rubbish bins of the wealthy noting the food packaging and other product they were throwing out. He stocked a little shop with all their products. This was the start of Ali Baba and Ali Pay. They get a lot of data from this (noting the government in China was cracking down on the monopolisation of data). The delivery could be as quick as 30 minutes from time of purchase. In a mature store, 60-70% now went through the app. Most of the big grocery chains were doing this. Net online shopping was integrated with offline shopping and retail facilities.

Another development was community buying – featuring local buyers operating local collectives. Buying food mainly, an organiser identified the product that a group wanted, and contacted the brand for purchase and delivery. For the brand, delivery was to a single point and the organiser distributed to the collective. It was very cost efficient. This grew as a result of Covid. This was the driver for the success of Pinduoduo which after just 6 years was the biggest e-commerce platform in the world. It appealed to Chinese – it represented community, connectivity and digital.

Mark also discussed the emergence of brands that started digitally delivering native, entertainment-driven food such as Three Squirrels. The founder of Three Squirrels was a street vendor and taxi driver. The brand was personalised through the squirrels for snacks. Now there were video games, films etc. This really played on the love of entertainment in China. Within 2 years of launching, it had become the largest top selling food online. The message was that you could come from nowhere if the product was right. It provided a lot of lessons for companies selling in China.

The foregoing had all hastened the application of blockchain traceability. Consumers wanted reinforcement for building trust. The President of China was an advocate of blockchain for this purpose. It was important during Covid for safety. Most of the big importers moved to blockchain eg GoGo Chicken. The investors in Go-Go Chicken saw it as free range (4-6 months to grow). The traceability is tracked by a bracelet on each chicken and consumers, through bird face recognition, could see the chicken. This built trust.

Finally, China had come a long way from the great leap forward moving collectivisation to industrialisation illustrated by the sanitation in very modern piggeries and the use of drones (one company DJI produces 70% of the consumer drones globally) and the development of use in agriculture and do the work of 8-10 men such as spraying activities.

Education and Training in the Food Value Chain

Paul Hollings, CEO, Food and Fibre Centre of Vocational Excellence, New Zealand

Paul Hollings spoke on the Food and Fibre Centers of Vocational Excellence or 'CoVEs' as part of the reform of vocational education in New Zealand. The Food and Fibre CoVE had been set up by an industry-led consortium involving the collaboration of 54 organisations across the entire food and fibre industry. This was a decisive partnership between the food and fibre sector and government.



The CoVE's intention was to build excellence by focusing on the success of learners, industry, and education. In other words, learner-focussed, industry-led and government-enabled. It was focussed on attracting and retaining learners and staff – from school to vocational education, to higher learning, and in the workforce.

With 75% of New Zealand's export receipts gained from exporting food and fibre products, both in bulk form and – to a lesser degree –consumer ready packaged, training was essential at every level in any industry to ensure food safety, quality, leadership, commercial viability, a 'pipeline of talent', staff retention and protection and sustainability of the natural environment.

Work was underway to ensure that what was happening across the sector was understood and what opportunities existed for industry and employees/learners to gain the most benefit.

The talent pipeline had three key elements: 1) Attraction (all ages but particularly the younger generation, all ethnicities particularly young Maori and Pasifika talent, all genders and capable learners); 2) Growth through the gaining of knowledge and skills (at every level with a plan for lifelong learning and the gaining of knowledge and skills for all members of the food and fibre workforce, including employers); and 3) Retention (employees with a plan and a future mapped out, opportunity to become leaders and a reduction in employee churn).

The lessons from Covid-19 had highlighted the reliance of large parts of the wider Food and Fibre industry on foreign seasonal labour. This in turn highlighted the lack of attraction to the industry by the domestic workforce because the work was often physically demanding that should have been mechanized. Future investment in mechanisation and automated technologies and the attraction of technology savvy, capable learners was important for the future.

Links of interest:

- ▶ <https://www.tec.govt.nz/rove/>
- ▶ <https://www.tec.govt.nz/assets/Publications-and-others/TEC-Drawing-the-Future-Report-v2.pdf>
- ▶ <http://www.growingnz.org.nz/images/ResearchPapers/Web-MPI-Human-Capability-in-the-Primary-Sector-2019.pdf>
- ▶ https://www.growingnz.org.nz/human-capability_In-the-primary_Industries-part-2-2002-to-2017-%C2%96-qualification-analysis-by-region-research_paper-93.html
- ▶ <https://www.mpi.govt.nz/resources-and-forms/economic-intelligence/situation-and-outlook-for-primary-industries/sopi-reports/>

WORKSHOP PROCEEDINGS

DAY FOUR

The objectives of the day's session were outlined:

- To examine crisis management (before COVID-19)
- To consider barriers faced by APEC economies and opportunities to improve the role of services, with particular emphasis etc

THEME NINE: CRISIS MANAGEMENT

Crisis Management of PSA Virus Outbreak

Peter McBride, Former Chairman, Zespri, New Zealand

Mr Peter McBride, Former Chairman, Zespri, New Zealand was welcomed and introduced.

Peter McBride explained that the kiwifruit industry in New Zealand was different to most other New Zealand horticultural industries because it was regulated. It had a strong consumer and customer orientation and had built a strong brand, Zespri, globally. It had recognised that research and development was crucial and had a strong investment in science.



The crisis Peter was involved in was the discovery of PSA (*Pseudomonas syringae* pv. *Actinidiae*), a bacterial disease in New Zealand. PSA carries no risks for human or animal health or other plants other than kiwifruit vines but is transmitted by weather events and humans. PSA can exist on plant surfaces without causing high levels of infection or it lives in the vine resulting in severe infection which can cause reduced production and vine death. In Gold kiwifruit, the symptoms become apparent very quickly.

Peter had been on the Zespri Board for eight years at the time of the New Zealand PSA crisis and was tasked at developing pathways forward to get out of situation. There had been a strong biosecurity focus in the industry prior to PSA, however the outbreak was a new shock and revealed a blind spot in the biosecurity system as to where it could enter. The incident resulted in a number of significant learnings for both government and industry in managing major biosecurity incursions.

Before the outbreak, the Zespri share price had been NZ\$1.20 and this dropped to 26 cents over night. One large scale operator had gone to negative income overnight. The impact on growers and their families was severe. Businesses suffered, school rolls and house prices dropped, and unemployment rose in the Tauranga Region.

The key challenge for the kiwifruit industry was limited knowledge. It was unclear as to whether New Zealand kiwifruit conditions were more conducive to the disease. It spread fast, and strategies had to be developed in a knowledge vacuum (that is without understanding the dynamics or vectors of the spread). The power of observation was critical and this was the key pathway for the industry going forward.

Collaboration was also an integral element of the response. The industry initiated cooperation with Italy which had already experienced PSA, in particular with Italian scientists. Ongoing work occurred on the ground around ways to deal with it but, even so, the industry was going backwards.

The key decision points where the impact changed direction were around the funding received from the government and the development of a pest management strategy. MPI wanted to pass the responsibility over to industry early on and when this occurred, it had been imperative to develop a pest management strategy.

Policy beacons went on between private and public sector. However, within one year, banks had lost patience and were going to foreclose on growers. Business models were prepared as a potential pathway forward to change rootstocks. Working with the banks involved socialising a business case to move forward. It took a bit of convincing of the banks that the numbers would work. At that stage, the involvement with government was minimal.

In due course, the key solutions were partnerships and the partnership with MPI was eventually much stronger. The industry had an industry-government partnership and there were also global research providers. Investment in research and development had paid off.

As a result, the state of the industry now was very good. Confidence in markets had improved hugely and that had been a key industry turning point. A lot of pastoral care had been undertaken through the period to support farmers to avert mental health catastrophes which proved very successful. Zespri shares had been split by 30 percent and the share price was now \$12.90. Gold kiwifruit orchards were now worth three times more than in 2010.

In terms of lessons learned that could be applied to Covid-19, Peter McBride said that in crisis management mode, decision-making processes had to ramp up dramatically. More risk needed to be taken because if nothing was done the risks were much larger. He was unsure whether the balance was right on how we perceive risk. Private sector involvement was critical and there could be a bigger role for private sector involvement in the Covid-19 response. Developing stronger partnerships between government and private sector was key.

As a result of its PSA experience, the kiwifruit industry had managed the Covid-19 situation well. There had been uncertainty as to whether kiwifruit should be deemed an essential industry and social distancing requirements had been difficult in horticulture. In terms of the market, Covid-19 had been reasonably positive for agriculture. Supply chains had been good early on, but pinch points were beginning to be felt now as with other industries.

The PSA outbreak had helped to prepare the industry for a crisis even though a pandemic had not been included as a risk. Peter recommended time be spent on what could be the industry's next blind spot.

In relation to Peter McBride's current role as chairman of Fonterra, milk and its products were one of New Zealand's most critical primary sectors. Fonterra's experiences with Covid-19 had been good. A hard-line approach had been taken with internal policies as the impact of getting Covid-19 into a plant or manufacturing site had been seen as devastating. He noted that different governments were handling things in different ways, but Fonterra was cementing in its own rules across its global network to the point where, in some places, people had been locked down in their apartments for 12 months.

On the importance of science and government investment in basic science, Peter McBride considered these as critical to the success of the economy. It was generally underfunded and there was an ongoing need to keep investing in human capability. His key recommendation would be a partnership model between the private sector and the government. There needed to be a strong orientation towards the consumer. There was no use in innovating unless it could be monetised. "Just in time delivery" should be implemented and continuing the development of long-term relationships. He noted that large scale cooperatives could address transport and logistics challenges, but small exporters would get hit in this area especially for products that needed refrigerated containers.

In terms of partnership effectiveness, Peter said these needed to be monitored as they developed to assess how the relationship was progressing over time. If people were not

benefiting in some way, the relationship would break down. Maintaining partnerships in a closed border environment takes a lot more time. Face to face meetings were better but now we could be more efficient with travel and engaging effectively online. There were cost savings, however, every industry needed to get back in front of people as soon as possible.

THEME TEN: REGULATORY BARRIERS AND IMPEDIMENTS

Indigenous Perspectives on Regulatory Barriers to Success

Moderator Keri Iti

Dr Meika Foster (NZ)

Dr Emily McAuley (Can)

Marco Ñanculeo (Chile)

The panel discussion was moderated by **Ms Keri Iti**, International Māori Agribusiness Programme Manager, MPI. Keri provided a mihi (welcome) and a karakia (prayer) to all participants, particularly indigenous peoples. She commented that the panel would share its knowledge and stories and intertwine these with their journeys. The saying, “Nothing about us without us,” had been used at APEC 2021 to convey indigenous peoples’ journey and unity – join, work and grow together. Each of the three panellists were able to present their experience in 5 minutes.

Dr Emily McAuley opened with a short presentation on *Indigenous Food Systems in Canada*. These had adapted and developed over many generations. They were very holistic and intricately interwoven with the family system, communities and cultural practices. As a result, they were proving to be quite resilient. Historically, government interventions had ongoing legacies: under agricultural treaty provisions comprising a pass and permit system, reserve lands, peasant farming policies and Indian Residential Schools.



The current challenges: were:

- Legislative and policy barriers, market limitations for remote communities.
- Intergenerational legacy and trauma: capacity and training deficits related to land management and agriculture; underrepresentation in STEM (science, technology, engineering and math).

Strength/Opportunities-Based Approach

Strong interest had been recorded in environmental protection and restoration, cultural revitalisation, socioeconomic independence including food security. Opportunities existed from the land base, indigenous knowledge systems, indigenous branding and market demand. Indigenous people want to be able to use their own land again. There was support for indigenous innovation across government departments and demand for indigenous products for domestic and international markets. An “*I-Stem cluster*” involved 11 Federal partners and was co-developed with indigenous partners. It had a number of elements including regional coordination, international linkages, indigenous leadership and participation.

Mr Marco Ñanculeo (Chile, Area Professional, Sercotec) presented the context for indigenous people in Chile: that there were 10 ethnic groups; that as a result of assimilation policies, indigenous people had lost control of most of their resources and had weakened their cultural and political aspects. Despite major international agreements, the indigenous people did not have their political and economic rights guaranteed and they could not develop in harmony with their environment. There existed a history marginalisation as a result of colonisation, which had prevented indigenous cultures from contributing to current environmental solutions. Producers as well as consumers had changed their behaviour patterns in the last decades. Food production and eating habits are no longer the same. The western model of development along with the usurpation of native lands had fuelled extractivism, exhausting biodiversity and strongly limiting productivity. Economic policies had been based on an open market with little regulation and a predominance of large companies, that limited the participation of small indigenous producers.

Indigenous participation in the food system: current situation – During the first part of last century, state-driven economic policies pushed Mapuche communities to switch from livestock and gathering to an agricultural and forestry economy. The forestry industry has been widely subsidised by the State to grow exotic monoculture tree plantations. This has had negative externalities on the local population. Mapuche agriculture could not compete, or become part of the large food industry, with some exceptions, due to the cost of raw materials, low yield land, scarcity of services, inadequate logistics, and low production volume. The sector’s policies were centralist with no participation, no local and cultural relevance, and they were governed by market criteria. The areas that were highly populated by indigenous inhabitants had been left behind and relied on the large food industry for their supply, which had a direct impact on the type and quality of their diet.

Indigenous participation in the food system: food opportunities – The COVID-19 crisis had shed light on the importance of local markets as well as the need to access a healthy diet. For indigenous people, it was an opportunity to rethink the economy and strengthen food sovereignty. The economic empowerment needed to be a priority, as they had been affected by welfare policies for so long. There was a need for advances in recognition, restitution and assurance of cultural, political and economic rights, along with adequate participatory mechanisms, for example, a revision of the tax and tariff system as well as patrimonial rights.

Economic initiatives that had an impact on local food production needed to be strengthened, as did promotion of local produce, with local marketers inside and outside communities, based on local good quality produce. Economic policies needed to be decentralised and better coordinated and indigenous participation incorporated, including their knowledge. Applied economics research centers should be created with a local, intercultural approach. Highest-income APEC members should favour the participation of indigenous enterprises in the food system, not only through market inclusion but also through the transfer of knowledge and successful experiences.

Dr Meika Foster (NZ) provided a brief background on Wakatū, which has more than 4,000 owners. It has a 500-year vision and an asset base of \$350 million. Their four areas encompass: manaaki, whenua, kono, AuOra.

Dr Foster noted two important programmes – Taketake Tāne (Protecting Indigenous Organisms) and Te Anga Whakamua (High Value Pathway). Their region was a biodiversity hotspot. This brought opportunities for having unique flora and fauna but brought responsibility to ensure traditional knowledge was enhanced for future generations. It was important that traditional knowledge was protected.

Wakatū had been collaborating with MPI, with support from MPI's supply chain integrity programme, in addressing the challenges. They also had support from the Ministry of Foreign Affairs and Trade, New Zealand Trade and Enterprise and the Ministry for Business, Innovation and Employment and many strategic science partners.

Areas of improvement were:

- The need for New Zealand to put in place fit-for-purpose mechanisms including the protection of flora, fauna, the language and data.
- New Zealand needs to agree on domestic approach for indigenous organisms.

- The need to address challenges with the New Zealand regulatory system. This system is under review.
- The need to address the requirements of all stakeholders and include indigenous reporting at all levels (legislative mandate has happened through Public Sector Act).
- Bridging the public-private divide – the need for long term resourcing to support development.
- Requires a coordinated approach with government in partnership with Māori.

This was a perfect time to look at a streamlined New Zealand Inc approach.

Following each panellist's opening remarks, Keri Iiti then lead an open discussion.

In relation to how indigenous and western science could complement each other to revitalise indigenous systems, Dr McAuley said that knowledge systems should be built off each other. There was a lot of potential to combine western knowledge tools and indigenous knowledge to create new knowledge or ways of thinking and approaches to problem solving. Dr Foster referred to the Te Tau Ihu Plant Library, the comprehensive regional plant database established by Wakatū which reflected doing things differently. Wakatū had contracted a leading plant scientist and this had realised a lot of important finds that could enhance Wakatū's guardianship responsibility. Having the two working together was important. There needed to be a recognition of traditional knowledge systems and a respect for cultural relationships with species. This could also be extended into concepts such as ensuring that there was co-publishing and collaboration on further priority areas. This showed that the knowledge systems were being valued.

Dr McAuley, in commenting on the research priorities of indigenous people in Canada, said there were many different priorities within the economy. Communities were interested in rejuvenating bison herds, propagating native plants and sharing their learnings with other communities. Keri noted that there seemed to be a return to the flora and fauna that used to be there, possibly as a result of the push to bolster indigenous wildlife and biodiversity.

Mr Nanculeo elaborated on the historical marginalisation, that in inhabiting the same territory all must look after and sustain it for the future. There was the possibility of using a holistic approach by joining the knowledge of the indigenous people and scientists to enable water and environmental issues to be tackled. The western approach could diminish indigenous knowledge could help bridge the gap. Keri agreed that bringing back the traditional knowledge

alongside western science could have a huge value-add to how issues and future challenges could be addressed going forward.

Dr McAuley said there needed to be a system to that aligned knowledge. There was a need for clarity around the regulatory framework that governed the continuum through medicine and dietary supplements. Dual use needed to be recognised but it should not exclude the use of products in food. The framework should not be cost prohibitive and must enhance traditional approaches.

In relation to the impact of COVID-19 on indigenous communities, Dr Foster noted it had made it challenging for those in horticulture and aquaculture to maintain strong relationships with Pacific neighbours but it had opened up the opportunity for Wakatū to engage with the MPI supply chain integrity system. Mr Nanculeo said that in Chile, it had impacted food security and the quality of food for all. It had restricted movements, but it had made people more aware of local production, its relevance and value and the prospect of it sustaining local communities.

Dr McAuley agreed that Covid had devastated a lot of communities especially remote ones, but it had also highlighted the readiness of communities to engage in local production.

In terms of policy-making, the panellists suggested that what was needed were changes to the internal policy arrangements to make them more welcoming by having people involved in the discussions; that constitutional recognition in Chile was still lacking; it was important for indigenous involvement to be accepted as socially valid, for indigenous knowledge and frameworks that had produced indigenous knowledge to be valued. It was paramount that decision-makers incorporated indigenous professionals in the process. Participation was the key for the development of policies; “Nothing about us without us” should be the key. It was important for early-stage engagement with people and their involvement at all policy-making levels. Economies needed to make sure the things that were special to indigenous communities were protected, for example, flora, fauna, knowledge, data, and language and that indigenous communities had sovereignty over these.

In terms of examples of successful policies that could be suggested to promote the insertion of indigenous peoples into the food chain system, the panellists believed there were many examples including sustainability and the promotion of companies that were fostering those values and helping them to sustain their activities.

Keri supported Canada in noting the difficulty of simultaneously coordinating efforts of stakeholders. Dr Foster's response: It was a work in progress. They had established excellent relationships across government agencies. Wakatū spent a lot of time in out-reach initiatives to ensure connection at many different levels. There needed to be a willingness from government to partner with them. However, they were still in a situation where, as a small business, it was about being more than just a supplier. They were looking at exporting to bring back the communities rather than a one stop shop. Small businesses were having to navigate a lot of areas and relationships and there was a need to streamline these and be effective at bringing groups together. Solutions were being looked at, which also involved strategic science partners. Keri acknowledged that it was not a simple process and there was a lot of time, effort and investment from businesses and entities to ensure it could work.

In response to a remark made by Thailand about the incorporation of STEM in indigenous economic activities and collective efforts to promote sustainable development, Keri supported this. In relation to whether there had been situations of conflict or divergence between western and indigenous values, the panellists said that views could be opposite to each other; a lot of projects did not have a western economic outcome; the best solution was to agree to a set of principles in advance to avoid conflict; issues needed addressing on many fronts; and working together to find a way forward.

Workshop recommendation topics

Mr English presented a summary of the overarching policy recommendations that had emerged over the four days of the Workshop. These were high level recommendations that had been drawn from more specific recommendations made by many of the speakers.

Recommendation Topic 1 – Regional Coordination (government and industry)

- APEC economies must co-ordinate across borders to facilitate services.
- The greater the coherence between industry and governments, the greater the likelihood of success.
- Multiple, non-distorting levers should be used to support industry and grow the economy.

Recommendation Topic 2 – System Collaboration (governments)

- Government agencies needed to cooperate, coordinate and collaborate within their own border to improve the regulatory environment.
- A whole-of-government approach was needed for public-private partnerships.
- Public-private partnerships needed to be applied across the full spectrum of components in the Food System.

Recommendation Topic 3 – Inclusion and engagement

- Comprehensive indigenous engagement was needed.
- “Nothing about us without us” should be the key principle.
- APEC economies needed to leverage the combined strength of indigenous and broader global knowledge with broader science.

The Wakatū example of a 500-year vision could be a beacon.

These Workshop recommendation topics were linked back to the Workshop goals. They were not exhaustive and were still part of the process.

The full set of recommendations is at [Attachment C](#).

Closing session

Mr English thanked the workshop organisers, Ms Amy McKeefry (Project Workshop Overseer), Ms Carole Inkster and Ms Iti. He extended further thanks to the speakers and the APEC secretariat for their support, facilitation and administrative diligence. Attendees were thanked for their participation and questions and he hoped that more knowledge and experience had been gained from the workshops.

Mr English finished with a whakautkī (proverb): What is the most important thing in the world: It is people, it is people, it is people. Participants were encouraged to complete the evaluation forms, which would be distributed via e-mail.

Ms McKeefry then gave her closing remarks as the Project Overseer. She made comment about the intensity of the four days and the range of ground covered. She suggested the biggest highlight had been the many voices and perspectives from both large and small businesses, industry, government representatives, economists, scientists, education providers and the panel. The workshop had started with Mr Houlding’s objectives for the Roadmap

Towards 2030 and bringing the 'private' back into 'the public-private partnership'. Improving food security was a complex and multi-faceted issue, and APEC economies needed to join, work and grow together. Learning would help inform the roadmap.

Ms McKeefry advised that the presentations, recordings, videos and extra resources would be included in the virtual toolkit. These learnings would be available to a wider audience as well as addressing the goal of food security in the Asia Pacific region. She then extended thanks to the participants for engaging with the speakers and supporting New Zealand's PPFS. She thanked the Chairman, the technical team, the project team including Mr English, Ms Robyn Bennett (Note Taker), and Ms Carole Inkster.



The workshop concluded with a karakia.

EVALUATION BY PARTICIPANTS

Pre-Workshop Benchmark Evaluation

As people registered for the Workshop, they were invited to complete a survey to assess several aspects of understanding and knowledge. Ninety-seven completed the survey by 29 April 2021. In addition to details such as name, economy, email and gender, they were asked:

- Their understanding of the food supply system
- The part of the food supply chain they were most interested in
- What they would like to hear most about
- Their interest in the private sector

Understanding of the food supply system – There was a split between fair (33%), neutral (21%) and good (34%). Poor or very poor (6%) and very good (6%) made up the balance.

The part of the food supply chain they were most interested in – Participants could select more than one option. The areas were primary production (43%), distribution and storage (21%), marketing (12%), sales/exports (11%) with primary processing, further processing, all, and other making up the balance.

One mentioned end-to-end traceability from source to table and another, services supporting Indigenous-led and determined agricultural production, food processing and marketing.

What they would like to hear most about – Participants could select more than one option. By far the greatest interest was in supply chain resilience (83%). Traceability followed (45%) with regulatory impediments (41%), sustainability consulting (40%), Quality management and performance (30%), business planning and management (27%) with product recall and crisis management, financial management and other from 22%-1%.

The interest of the private sector in attending – This was spread over not interested (2%), somewhat interested (40%) and very interested (52%).

Gender of Registered Pre-Evaluation Participants – The gender split of those that completed the pre-evaluation was female (62%) and male (38%).

Post Workshop evaluation

The project team asked participants who had attended the workshop to complete a post-workshop evaluation form. Over the four days, the Workshop attracted 142 participants (including speakers) but a number did not log in to the online platform for all four days. However, it should be noted that we were unable to determine the attendance of multiple participants who watched the workshop sessions from one device. Fifty five post Workshop evaluation forms were received from participants in 14 economies (32 female, 23 male).

The post Workshop evaluation by participants was very positive, with all stating their overall understanding of issues impacting services across the food value chain had improved as a result of the workshop sessions. All but 6 (10%) stated they had learnt a good amount (36, 66%) or a huge amount (13, 24%).

In terms of which of the Workshop themes participants felt they learnt the most about from the sessions, the leading theme was Indigenous Perspectives on Regulatory Barriers to Success (Dr. Emily McAuley, Marco Nanculeo and Dr. Meika Foster) which was noted by 26 (47%) respondents. The evaluation form allowed for more than one theme to be included. The balance of the themes in order of learnings delivered were:

- COVID Impacts on Food System Services (Dr. Emily Chang); 24 (44%)
- Overview on Food System Services (Shamubeel Equb); 22 (40%)
- Food System Services - Policy Settings (Lee Ann Jackson); 22 (40%)
- Regulatory Barriers and Issues (Japnit Singh); 21 (38%)
- Supply Chain Integrity (Dr. Garry Udy and Dr. Meika Foster); 19 (35%)
- Sustainability and Services (Dr Daniela Acuña); 13 (24%)
- Product Integrity, Traceability and the Food Cool Chain (Valentina Tripp and Mark Mitchell); 12 (22%)
- Crisis Management (Peter McBride); 11 (20%)
- Education (Paul Hollings); 9 (16%)
- Marketing and Sales (Bi Yichen and Mark Tanner); 7 (13%)

In terms of improvement, the participants made a range of suggestions although some commented that they merely enjoyed it, especially the diversity of speakers. Several commented that the online format made the sessions more accessible to a wider audience and supported more APEC workshops in future to encourage ideas, share experience, success stories and best practices. Others noted technical difficulties they encountered (noting slides were always useful and should be added in future so that when the sound stops, participants can still follow), how it might have been helpful to have material disseminated in

advance so that participants could be more prepared, and the difficult timing for the North and South American participants. One participant suggested simultaneous translation /interpretation and several would have liked more participant involvement suggesting the use of real time tools, like using Menti or Kahoot. Another comment was that recommendations at the very end of the sessions could have been stronger and policy aspects of food security could have had more emphasis in the overall conversation.

Suggestions for other topics that might have been covered included:

- reducing food waste, food rescue,
- moving from home production to larger scale production,
- climate action options to improve health, create jobs, deliver healthy food and affordable energy,
- Strengthening SMEs in agriculture as food supply chain businesses

Table 2: Participation in the Workshop by APEC Economies at registration

Participation on the topic of Services and the Food System by APEC Economies	
Australia	Mexico
Brunei Darussalam	New Zealand
Canada	Peru
Chile	The Philippines
People's Republic of China	Russia
Hong Kong, China	Singapore
Indonesia	Chinese Taipei
Japan	Thailand
Republic of Korea	Viet Nam
Malaysia	United States

Promoting the Virtual Toolkit will be an important post-Workshop activity for the Project Overseer.

CONCLUSIONS

Workshop participants enthusiastically embraced the four days of knowledge raising, sharing ideas and views that resulted in a range of policy recommendations to be taken forward within APEC. Services can play a valuable contribution to support and lift productivity and food safety thereby contributing to food security, but this could be inhibited by regulatory and non-regulatory barriers and limited service provision. The Workshop strove to develop a shared understanding of the impact of the current services environment on those engaged in the food supply chain. The value of private-public partnerships and “whole-of-government” approaches was repeatedly noted across almost every theme explored during the Workshop.

The global pandemic Covid-19 was shown to have had a significant effect on producers and consumers. Challenges experienced along the food supply chain were explored and innovative solutions highlighted. Choke points and areas that needed addressing were identified in order to build greater resilience into the regional system. Consideration of these issues have formed part of this report and the recommendations to PPFS and GOS.

The Workshop objectives of capacity building, information transfer on good regulatory practices from APEC economies on services in the food system and understanding the viewpoint of the private sector, were clearly met. Areas where the regulation of and for services along food value chains could be improved to create a favourable services environment were identified and reflected in the recommendations. This was confirmed in the post Workshop evaluation provided by participants.

ATTACHMENT A

APEC WORK SHOP AGENDA**DAY 1**

Tuesday 13 April 2021

14:30 – 15:00 Preliminaries	Test time, Connection confirmation Familiarisation with 'Chat' function
15:00 – 15:10 Administration	Delegates and Guests joined MC Patrick English – Introduction Procedures for day and Rules of Engagement
15:10 – 15:25 Opening Session	(1) Welcome from New Zealand Aoteroa Kaituitui, Raniera Bassett (2) Welcome Remarks APEC / New Zealand – Phillip Houlding, PPFs Chair (3) MC – Objective for Day
THEME	OVERVIEW ON FOOD SYSTEM SERVICES
15:25 – 15:45 Keynote	Food System Services – Economic impacts Shamubeel Eaquib, Economist, New Zealand
15:45 – 16:00	Q&A, Patrick English
16:00 – 16:10	Rest Break
THEME	COVID IMPACTS ON THE FOOD SYSTEM AND SERVICES
16:10 – 16:15	Speaker intro Patrick English
16:15 – 16:35 Speaker	Dr Ching-Cheng (Emily) Chang Professor, National University, Chinese Taipei
16:35 – 16:45	Q&A, Patrick English
THEME	SUPPLY CHAIN INTEGRITY
16:45 – 16:50	Speaker Intro Patrick English
16:50 – 17:00 Speaker	NZ Supply Chain Integrity Dr Garry Udy, Specialist Advisor, Ministry for Primary Industries, New Zealand
17:00 – 17:10 Video	NZ Supply Chain
17:10 – 17:40 Speaker	Protecting and Enhancing our Natural Resources Dr Meika Foster Chief Science Advisor, Wakatū Incorporation – AuOra, New Zealand
17:40-17:55 Panel	Panel Q&A, Patrick English Dr Meika Foster, Dr Garry Udy and Ryan Donovan (Specialist Advisor, MPI)
17:55 – 18:00 Close Day 1	Closing Session Patrick English – What is planned for Day 2
18:00	CLOSE DAY 1

APEC WORK SHOP AGENDA DAY 2

Wednesday 14 April 2021

Day 2 – Wednesday 14 April 2021	
14:30 – 15:00 Preliminaries	Test time, Connection confirmation Familiarisation with 'Chat' function
15:00 – 15:10	MC – Recap, Objectives for Day and Rules of Engagement
THEME	REGULATORY BARRIERS AND ISSUES
15:10 – 15:15	Speaker Intro Patrick English
15:15 – 15:35 Speaker	Improving Services in the Food System Using Illustrative Case Studies from the Horticulture Sector (Mexico and Indonesia) Japnit Singh , Deputy CEO, Spire Research and Consulting, Singapore
15:35 – 15:45	Q&A, Patrick English
15:45 – 15:55	Rest Break
THEME	PRODUCT INTEGRITY, TRACEABILITY AND THE FOOD COOL CHAIN
15:55 – 16:00	Speaker Intro Patrick English
16:00 – 16:20 Speaker	Integrity in Product Traceability Valentina Tripp , CEO, Davey Water, Australia
16:20 – 16:30	Q&A, Patrick English
16:30 – 16:35	Speaker Intro Patrick English
16:35 – 16:55 Speaker	Food Cool Chain and Traceability Mark Mitchell , Chairman, Australian Food Cool Chain Council
16:55 – 17:05	Q&A, Patrick English
17:05 – 17:15	Rest Break
THEME	FOOD SYSTEM SERVICES – POLICY SETTINGS
17:15 – 17:20	Speaker Intro Patrick English
17:20– 17:40 Speaker	How Better Policies for Food Systems can Build Food Supply Resilience Dr Lee Ann Jackson , Head of Division, Agro-food Trade and Markets, OECD
17:40 – 17:50	Q&A, Patrick English
17:50 – 17:55	Closing Session Patrick English What is planned for Day 3
17:55	CLOSE DAY 2

APEC WORK SHOP AGENDA DAY 3

Thursday 15 April 2021

Day 3 – Thursday 15 April 2021	
14:30 – 15:00 Preliminaries	Test time, Connection confirmation Familiarisation with 'Chat' function
15:00 – 15:10	MC Patrick English – Recap, Objectives for Day and Rules of Engagement
THEME	SUSTAINABILITY AND SERVICES
15:10 – 15:15	Speaker Intro Patrick English
15:15 – 15:35 Speaker	Sustainability in Services Across the Food Value Chain Dr Daniela Acuña , Sustainability Specialist, Ministry of Agriculture, Chile
15.35 – 15.45	Q&A, Patrick English
THEME	MARKETING SERVICES and SALES
15:45 – 15:50	Speaker Intro Patrick English
15:50 – 16:10 Speaker	Development of China's Digitised Food Trade Platform Bi Yichen , Analyst, National Grains and Oils Trading Centre, China
16.10 – 16.15	Q&A, Patrick English
16:15 – 16:30	Rest Break
THEME	MARKETING SERVICES and SALES (cont.)
16:30 – 16:35	Speaker Intro Patrick English
16:35 – 16:55 Speaker	Insights from a Digital, Strategic and Branding Agency Mark Tanner , Founder and CEO, China Skinny
16:55 – 17:15	Q&A, Patrick English
THEME	EDUCATION AND TRAINING AS A SERVICE
17:15 – 17:20	Speaker Intro Patrick English
17:20 – 17:40 Speaker	Education and Training in the Food Value Chain Paul Hollings , CEO, Food and Fibre Centre of Vocational Excellence, New Zealand
17:40 – 17:50	Q&A, Patrick English
17:50– 18:00	Closing Session Patrick English What is planned for Day 4
18:00	CLOSE DAY 3

APEC WORK SHOP AGENDA DAY 4

Friday 16 April 2021

Day 4 – Friday 16 April 2021	
14:30 – 15:00 Preliminaries	Test time, Connection confirmation Familiarisation with ‘Chat’ function
15:00 – 15:05	MC Patrick English– Recap, Objectives for Day and Rules of Engagement
THEME	CRISIS MANAGEMENT
15:05 – 15:10	Speaker Intro Patrick English
15:10 – 15:30 Speaker	Crisis Management of PSA Virus Outbreak Peter McBride , Former Chairman, Zespri, New Zealand
15:30 – 15:50	Q&A, Patrick English MC Instruction to be back for a panel session
15:50 – 16:00 Rest Break	
PANEL	REGULATORY BARRIERS AND IMPEDIMENTS
16:00 – 16:05	Moderator Intro Patrick English introduces Moderator
16:05 – 16:40 PANEL	Indigenous Perspectives on Regulatory Barriers to Success Moderator Keri Iti Dr Meika Foster (NZ) Dr Emily McAuley (Can) Marco Nanculeo (Chile)
16:40 – 17:10	Q&A, Keri Iti
17:10 – 17:15 Rest Break	
NEXT STEPS	RECOMMENDATIONS
17:15 – 17:45	Proposed recommendations including Day 4 Patrick English Amendments/suggestions
17:45 – 18:00	Closing Session – Patrick English Post Workshop Evaluation Closing Remarks (NZ Host) MC to note other workshops coming up in the APEC 2021 programme
18:00 CLOSE WORKSHOP	

ATTACHMENT B

PRESENTER BIOGRAPHICAL NOTES

(In order of speaking in the Programme)

Patrick English, Chair/Moderator

Patrick English has been involved in international trade and in particular China, since 1989. He has degrees in Chinese studies, International Relations and International Management/Trade. Patrick is an experienced Trade Commissioner and diplomat having served in Malaysia and China, most recently in Guangzhou/Southern China as Consul General. Patrick also represented NZTE on the New Zealand China FTA negotiations team and led the market implementation programme for the FTA agreement.



Patrick returned to New Zealand in 2013 to become the first Executive Director for the New Zealand China Council. Patrick is on the Board of Auckland Confucius Institute, is a media, conference and seminar speaker on the New Zealand China trade and economic relationship, as well as contributor to programmes with a number of New Zealand universities. In 2015, Patrick was appointed as the founding Chair of the Ministry for Primary Industry's New Zealand Growth Partnership Executive Board, and was recently appointed as a chair/moderator for a number of MPI related working group sessions for APEC 21.

Raniera Bassett

Ko Te Parata raua ko Kahutianui ōku Te Parata and Kahutianui are my ancestors
tupuna

Ko Mamaru tōku Waka
Ko Ngāti Tara tōku Hapu

Mamaru is my ancestral waka
Ngāti Tara is my subtribe, *my Ūkaipo, place
of nurture*

Ko Ngāti Kahu tōku Iwi
Tihe wā Mauriora!

Ngāti Kahu is my Iwi
It is the breath of life!

In 2002 I was employed by the Auckland Regional Public Service as an adviser to promote food safety in the community. In 2004, prior to the initial merger with Fisheries NZ, Biosecurity NZ to become the Ministry for Primary Industries (MPI) in 2012, I was offered a position with NZ Food Safety Authority. This work led to publishing food safety material, '*He Whakatairanga i ngā ahuatanga mahi mō te tunu hāngi*' - *Food Safety Practices in preparing and cooking a hāngi*; '*Te Kai Manawa Ora*' – *Marae Food Safety Guide*; and '*Umu Pasifika*' – *Food Safety for Pacific Peoples*. A positive follow up to these publications, led to the television show *Marae Kai Masters*, which MPI sponsored for five years.



I am the Kaititui Principal Adviser Tikanga (Indigenous protocols) for MPI and in this role I oversee the cultural development across the organisation. I have been with the Ministry for Primary Industries and its predecessor Government agencies since 2004.

In 2012, I was nominated as the lead speaker by my whanau and hapū to negotiate our Treaty of Waitangi claims with the Government which are still ongoing. I am based in Tamaki Makaurau – Auckland.

Phillip Houlding

Phillip Houlding is the Director of International Policy at the New Zealand Ministry for Primary Industries. He leads teams focussed on trade policy (including international standards setting bodies), environment negotiations, international fisheries issues and New Zealand's international primary sector relationships. Prior to taking up his current role in February 2019, Phil was Trade and Economic Counsellor at the New Zealand Embassy in Washington, DC. He was responsible for leading the Embassy's advocacy efforts in Washington on trade, environment and economic issues, including the Trans-Pacific Partnership.



Before his assignment in Washington, he was the Trade and Economic Manager for the Meat Industry Association of New Zealand, and before that, spent 8 years with the Ministry of Foreign Affairs and Trade, principally working on trade policy, including leading market access negotiations in trade negotiations with Korea, India and in the Regional Comprehensive Economic Partnership (RCEP). He had other roles in the Ministry of Foreign Affairs and Trade's Economic and APEC divisions. Offshore, Phil was posted to the New Zealand Embassy in Jakarta, Indonesia for three years, where he led work on trade and environmental policy, including Indonesia's ratification of the ASEAN/Australia/New Zealand free trade agreement. Phil holds a First Class Master's degree in English literature, a BA in German and a BSc. in Applied Mathematics from the University of Auckland.

Shamubeel Equb

Shamubeel Equb is an experienced economist who makes economics easy. He is also an author, media commentator and a thought leading public speaker. He has near two decades of experience as an economist in Wellington, Melbourne and Auckland in leading international banks and consultancy. He is a partner at Sense Partners – a boutique economic consultancy. Shamubeel lives in Auckland with his wife and two sons. He grew up in Canterbury and holds a BCom with Honours in Economics from Lincoln University.



Dr Ching-Cheng (Emily) Chang

Ching-Cheng Chang holds a PhD degree in Agricultural Economics from Pennsylvania State University of the US. Her PhD thesis won the Outstanding PhD Dissertation Award of the American Ag. Econ. Association in 1988. She was promoted to Research Fellow in the Institute of Economics in Academia Sinica and Professor of Agricultural Economics in National Taiwan University in 2000.

During 2015-18, she was appointed as the Director of the Socio-Econ Dept of APEC Research Center for Typhoon and Society.

Her main research interests include:

- Assessing the economic impact of public policies and free trade negotiations on sustainable usage of natural resources and production decisions involved in the agriculture and food sectors.
- Global climate change impact and related risk-reduction policies.
- Trade policies and market structure of international commodity market.

Dr Chang has published widely with more than 100 articles in refereed journals and served as associate editors or members of the Editorial board of several journals, e.g., *Agricultural Economics*. Currently she is the Associate Deputy Editor of *Climatic Change*. She is also the co-editor of a book: *Global Warming and the Asian Pacific (2003)* and a few book chapters.



Dr Garry Udy

Dr Udy has been a Specialist Advisor in the International Relations team, Ministry for Primary Industries, since 2009, leading co-operation programmes [Specialising in supply chain and value chain integrity, dairy production, and agriculture capability and developments in foreign countries]. Prior to this he spent seven years as Operations Manager and Business Manager for LIC Diagnostics - laboratories involved with production animal genetic screening and animal health disease testing. Prior to that he spent fourteen years working as a Technical Specialist and the National Veterinary Trainer for the New Zealand Food Safety Authority and MQM with specialist skills in HACCP, risk management, food safety systems evaluation and verification.



Prior to 1996 he was a Research Scientist and Programme leader working in the areas of stem cell research, animal transgenics and animal developmental biology. This followed his graduation PhD from the University of Cambridge, UK. Prior to this, he spent three years working in the commercial reproduction technologies sector after graduating as a veterinarian from Massey University NZ in 1984. Dr Udy owns and lives on a small farm in the Waikato, which is leased out for dairy production.

Dr Meika Foster

Dr Foster is a nutrition scientist with a background in law. She is the founding director of Edible Research Ltd, which provides translational research services in Food and Nutrition Science to the Food and Beverage Industry, the Science Sector, and Government. Her particular research interests include: the development of high-value plant-based food and ingredient solutions that are beneficial for health and contribute to the revitalisation of natural ecosystems; and cultural and intellectual property law.



Among her industry roles, Meika is Principal Science Advisor to the AuOra health and wellness unit of Wakatū Incorporation. She is co-Principal Investigator on a New Zealand Singapore Future Foods consumer science programme and on a High-Value Nutrition (New Zealand Science Challenge) dietary intervention programme; and contributes in various capacities to a number of universities and research institutes.

Dr Ryan Donovan

Dr Donovan BVSc MPM is a Specialist Adviser with the Ministry for Primary Industries. He graduated from Massey University as a veterinarian, and obtained his Masters in Public Management from Victoria University. Ryan has spent the majority of his career in MPI and its predecessor ministries. Ryan has spent the last five years with Dr Udy developing and delivering supply and value chain integrity programmes to international importers/operators and government authorities, and more lately, working with Wakatu Incorporation to support the development of their indigenous novel food chain programme, *Te Anga Whakamua*.



Prior to working in Policy and Trade, Ryan worked for 13 years in frontline, technical and senior management positions in MPI's Verification Services Directorate. He has a broad food chain and biosecurity base knowledge across major primary sectors, including dairy, red meat and horticulture.

Japnit Singh

Japnit is the Deputy CEO, Spire Research and Consulting. He specializes in supporting organizations with marketing entry and growth consulting in Asia. With over 15 years of regional experience, he has worked with fortune 500 companies as well as government agencies from Singapore, USA, Spain, Oman and Japan. These include Ithraa (Oman), Catalonia Trade and Investment, Austrade, JETRO, United Nations, ASEAN secretariat and others. He also works with private sector organizations such as Griffith Labs, Lamb Weston, Chilli's Restaurants, Equal Sweetener, Cadbury Schweppes, Coca-Cola and others



His expertise lies in market analytics, business partner matching and go-to-market strategies for multinational organizations as well as SMEs having successfully completed over 1000 market research projects globally.

Japnit is passionate about education and spends a lot of his free time lecturing and working with local student bodies at NUS and NTU.

Japnit was with India Property Research & Jones Lang LaSalle Meghraj Property Consultants New Delhi, before he joined Spire Singapore in 2004. Japnit holds a Bachelor's degree in Architecture from the School of Planning and Architecture in Delhi, and is a part of the MBM 2004 Batch of AIM.

Valentina Tripp

Valentina is an experienced Non-Executive Director, Chair and Chief Executive with a proven track record in strategy, transformation, and growing businesses in agribusiness, FMCG, manufacturing and retail across Australia, Asia and global markets.



Valentina is currently CEO of Davey Water, owned by ASX listed GUD Group, leading the transformation and growth of Australia's largest industrial pump manufacturer into a leader in Water Solutions. Her prior roles include CEO at ASX-listed Murray River Organics, Executive Director at Simplot/Top Cut Group across Australia, China, Japan & Korea and Senior Director KPMG Management Consulting where she was responsible for leading transformation, strategy, customer growth, supply chain, operational and financial turnarounds with a focus on agri-business, FMCG, industrial and retail sectors.

She holds an MBA (University of Queensland/Mt Eliza Business School), BComm (University of Melbourne), is a Certified Practising Accountant (CPA Australia) and is a Member of the Australian Institute of Company Directors (AICD).

Valentina has a strong interest in ethical and sustainable global food supply chains, serving with Fairtrade Australia and New Zealand as Non-Executive Chair, Fairtrade International (Germany) and currently Non-Executive Director with Marine Stewardship Council Board International (UK). She also served as a Board Member for Dried Fruits Australia and Non-Executive Director with ASX-listed Capilano Honey Limited.

Mark Mitchell

Mark is Chairman of the SuperCool Group of Companies which operate in global mobile air-conditioning equipment, transport refrigeration, compressor design and manufacture, refrigeration tools and equipment, industrial hoses and connections and temperature monitoring solutions for the cold chain. Mark is on the board of Refrigerant Reclaim Australia and was the foundation president of VASA formed by mobile air-conditioning specialists more than 25 years ago. In 2017 Mark helped form the Australian Food Cold Chain Council and is its current chairman.



Mark Mitchell is a former vehicle air-conditioning installer and repairer in the days before factory air was fitted to most vehicles.

Dr Lee Ann Jackson

Dr Jackson is the Head of the Agro-Food Trade and Markets Division in the Trade and Agriculture Directorate (TAD) at the OECD. She joined the OECD in 2020 after 16 years at the WTO where her most recent position was as Counselor of Food and Agricultural Policy Research in the Economic Research and Statistics Division. She was previously the Secretary to the WTO's Committee on Agriculture in the Agriculture and Commodities Division where her responsibilities included the implementation and monitoring of WTO rules on agriculture and multilateral agriculture negotiations.



Prior to the WTO, Dr Jackson held various research roles including as a Research Fellow in the School of Economics at the University of Adelaide in South Australia and a researcher in the Environment Division of the International Food Policy Research Institute in Washington DC. Dr Jackson completed her PhD in applied economics at the University of Minnesota and has joint Master's degrees in public and private management and environmental studies from Yale University.

Dr Daniela Acuña

Dr Acuña is the Sustainable Production Officer, Department of Sustainability and Climate Change, Bureau of Agricultural Studies and Policies, Chilean Ministry of Agriculture. Currently she is in charge of developing the Sustainability Strategy for the Chilean Agrifood Sector.

Daniela has a vast experience working in sustainability with a special emphasis in the agrifood sector. She has experience working in the public sector, in academia and also in consultancy. Daniela studied veterinary medicine in the University of Chile and has a Masters in Environment and Development from King's College, University of London.



Bi Yichen

Bi Chen is an analyst with the National Grain Trade Center of China. He majored in agricultural economics and graduated from Renmin University of China in 2017. Since then, and for the past four years, he has been engaged in grain trading. The National Grain Trade Center System comprises a central coordination centre and provincial grain trade centres.



Established in 2014 its responsibilities include building up the National Grain Electronic Trading Platform, maintaining, managing, innovating and promoting the trading system; organizing and coordinating national policy-related grain and oil's trade and ex-warehouse; carrying out the capital settlement of national policy-related grain; guiding and supervising provincial national grain trade centers to carry out work in accordance with the principle of "Open, Equitable, Just, Honest & Faithful"; leading both local grain reserves and social grain to be traded in the platform; constructing the grain market information system; other works assigned by the SAG. The SAG/GTCC and provincial national grain trade centers make up the National Grain Trade Center System together.

Mark Tanner

Mark Tanner is the founder and managing director of Shanghai-based China Skinny, one of China's best-known marketing and strategy agencies. China Skinny has delivered research, strategy and trends analysis for hundreds of international brands including Nike, IKEA, Panasonic, Colgate, Reckitt Benckiser, Tourism Australia, Coles, Woolworths, Fonterra, Playboy and IHG.



Mark authors the most-read weekly newsletter about marketing to Chinese consumers and has been quoted in more than 200 international media outlets including Bloomberg, Reuters, FT, WSJ and Forbes, where he writes a regular column.

Paul Hollings

Completing his apprenticeship while serving in the New Zealand Army, Paul is originally an electrician with over 20 years' experience. Paul also has a further 20 years' experience in Vocational Education and Training. He is currently leading the Food and Fibre Centre of Vocational Excellence having assumed the role of inaugural General manager at the beginning of March this year.



Until recently, Paul held the position of the Technology Park (TechPark) Campus General Manager at Manukau Institute of Technology (MIT) and had worked in senior roles at MIT for over 5 years. Prior to this Paul spent 15 years at the Skills Organisation (previously ETITO) in a number of different roles including Regional Training Manager, Head of Specialist Trades and Head of Strategic Engagement. He holds a Diploma in Management from the New Zealand Institute of Management and has previously served as a member of the New Zealand Board of Engineering Diplomas, and on the Board of the Construction and Infrastructure CoVE (ConCoVE). Paul is also a member of the Institute of Managers and Leaders Australia and New Zealand.

Peter McBride

Peter McBride was elected to the Fonterra Board in 2018 and became Chairman in November 2020. He is on Board's Appointments and Remuneration Committee and the Governance Development Committee.

Peter is a member of the Zespri China Advisory Board. He was previously the Chairman and a Director of Zespri Group Limited and other related companies.

Peter is a Chief Executive Officer of Trinity Lands Limited and Managing Director of South-East Hort Limited and subsidiaries and Ellett Beach Farms Joint Venture. He was previously a Director of the New Zealand International Business Forum and a member of the Executive Board of the New Zealand China Council. Peter has shareholding interests in the Waikato. He has a B. Horticulture and a PG Dip Com Agribusiness.



Keri Iti

Iwi (Tribes): Ngā Mahanga a Tairi (Taranaki), Ngāti Maniapoto

Keri grew up working on fruit orchards in provincial New Zealand, where horticulture, viticulture and agriculture were the key drivers of the regional economy.

Keri is the International Māori Agribusiness Programme Manager for the Ministry for Primary Industries (MPI). Since joining MPI in 2010, she has worked in external communications and a range of primary sector policy areas. Keri has extensive experience in communications, research and policy development in government, ministerial offices and parliament, and the non-government sector at senior and managerial levels.

In APEC 2019 in Chile, Keri led a team to deliver the first indigenous focused workshop in the Policy Partnership for Food Security Forum called *Rural Development Through the Lens of Indigenous Communities and their Agribusinesses*.

Qualifications include a Bachelor of Arts in Politics, a Post-Graduate Hansard Society Scholarship at the London School of Economics while on placement in the British Cabinet Office. Keri has governance experience.

Dr Emily Missyabit McAuley

Dr McAuley is a member of Lake Manitoba First Nation. She received an MSc in Biology from Carleton University in 2009 and a PhD in Biological Sciences from Simon Fraser University in 2020. Her research interests include food web interactions, species distribution modeling, citizen science, Indigenous knowledge systems, and geomatics.



Emily was the Senior Indigenous Science Liaison Officer for Science and Technology Branch at Agriculture and Agri-Food Canada (AAFC) from 2017 to January 2021, and was recently appointed Director of AAFC's Indigenous Science Liaison Office and the Interdepartmental Indigenous Science Technology Engineering Mathematics (I-STEM) Cluster, hosted by AAFC.

Marco Ñanculeo

Marco Ñanculeo is a Mapuche engineer, 42 years old, married with two daughters. He was born in Millacoy (Mapuzungun for water reunion), south of Nueva Imperial in Araucanía, Chile. Marco went to school 2 km away from home in a rural primary school and grew up in a rural Mapuche community. He has a BA in Mathematical Engineering and Statistics from

Universidad de Concepción and an MSc in Social Research and Development from the same university.

For his research contribution, he was awarded the “National Thesis Award” by the Foundation for Poverty Improvement and in 2020 he was included in the US State Department’s International Visitors Leadership Programme to engage with Indigenous Communities and the African Diaspora. Recently, Marco assisted in the creation of two business development centres focused specifically on Indigenous businesses, creating the first project of its kind in Chile, and he is a regular consultant on indigenous development, policy assessment, sociolinguistics and quantitative research.

Amy McKeefry

Amy McKeefry is the Project Overseer for the Services and the Food System Virtual Workshop. She is a Policy Analyst at the Ministry for Primary Industries in New Zealand. Amy has completed a Bachelor of Biomedical Science from the University of Otago, followed by a Postgraduate Diploma in Bioscience Enterprise from the University of Auckland. In her time at the Ministry for Primary Industries, Amy has worked on a range of domestic and international food policy issues. These have included mitigation of domestic food loss through government-funded supply chain resilience projects, enabling healthier food environments and New Zealand’s engagement in bilateral/multilateral cooperation programs, and other international fora, such as APEC.



Carole Inkster

Carole Inkster is the Services and the Food System Workshop Coordinator and a Consultant, with MCM Consulting, New Zealand. She has been consulting to the food and agriculture industry and governments since 2011 and since that time has been Regulatory & Policy Director with the New Zealand Food & Grocery Council (NZFGC) and, since 2012, Principal Regulatory Adviser with the Infant Nutrition Council Australia and New Zealand (INC). This followed over 25 years’ experience in government policy, strategy and legal areas in both Australia (in the primary industries/fisheries/agriculture portfolios) and New Zealand (in the agriculture, health and food portfolios). In the period 2002-2010, Carole was a senior executive in the New Zealand Food Safety Authority.



Carole has extensive experience in all aspects of regulatory policy, legislative development, standards development and systems design, industry impacts, whole of government requirements and international policy as it affects and interfaces with the agriculture and food industries. She has coordinated workshops for APEC in Papua New Guinea (2018) and Chile (2019).

ATTACHMENT C**RECOMMENDATIONS****OVERVIEW ON FOOD SYSTEM SERVICES, COVID IMPACTS AND REGULATORY BARRIERS**

1. Member economy government agencies need to cooperate, coordinate and collaborate within their own border to improve the regulatory environment affecting the provision of services in the food value chain. A “whole-of-government” approach is needed.
2. APEC economies need to fund initial facilitation activities and incentivise key players to take a leadership role in progressing service facilitation.
3. APEC economies need to co-ordinate across borders to facilitate services to operate across economies and leverage the skills on offer regionally.
4. APEC economies need to implement targeted measures to assist actors along the food supply chain, especially workers in affected industries and vulnerable populations.
5. Services to the food system need to adopt, diffuse, expand and consider joint ventures across economies.
6. APEC economies need to recognise that science, both basic and commercial, is essential for knowledge adoption and diffusion. Science should be seen as an opportunity not a barrier. The value of investment in research and development should never be underestimated and is critical to the success of the economy.
7. APEC economies need to promote public-private partnerships in e-commerce initiatives to improve food security and increase resilience of the food system, including investments in ICT-related infrastructure and bundling of services.
8. APEC economies need to recognise that the immediacy of shocks from Covid should not block out the more significant and medium to long term climate and environmental shocks.
9. Each member economy government and its industries need to combine their focus on integration, integrity and sustainability throughout the food system.
10. Each member economy needs to have collective and common goals around food safety, environmental challenges, and science within a common policy and legal framework.
11. APEC economies need to recognise that the greater the coherence between industry and government, the greater the likelihood of success. Public-private partnerships must be promoted.
12. E-commerce platforms can help close the gap between farmers and downstream markets, reducing farmers’ reliance on intermediaries.
13. Member economy governments should collaborate with the private sector to lead and facilitate the development of decentralised hubs or ‘Integrated Logistics Parks’ that will improve connectivity, increase accessibility and ensure the safe and timely delivery of produce. Such hubs would also serve as one-stop service centres for wholesale, transportation, and storage management.
14. Industry needs to strengthen product lines in response to new consumer behaviors.
15. APEC economies need to support public-private partnerships that might introduce finance platforms to secure online payments for both suppliers and consumers for

financial transactions. Collaboration with fintech companies or providing them with avenues to promote their services as an alternative to traditional lending should also be pursued.

16. APEC economies need to recognise that public-private partnerships can be used along with ICT platforms to address a range of financing difficulties (including capital shortage) and infrastructure problems.
17. APEC economies need to encourage cooperation on quality management system approaches for food businesses and the food chain
18. APEC economies need to 'go hardest' on the cool chain to address wastage, quality and returns as well as sustainability goals.
19. APEC economies need to recognise that better designed policies can make a difference and that existing international work, such as by the OECD, has identified many areas where improvements can be made by governments.
20. APEC economies should search for the best policy mix rather than a 'silver bullet'.
21. APEC economies need to be aware of possible synergies and trade-offs with other policy areas but rigorously evaluate possible interactions (not all are real, or big enough to matter).
22. APEC economies need to be aware that such synergies and trade-offs depend on the choice of policy instruments, that one instrument is usually not sufficient and that resolving trade-offs is not a purely technical question, but involves value judgments.
23. APEC economies need to use multiple non-distorting levers such as investments in research and development, rural infrastructure and biosecurity services. APEC economies also need to recognise that such levers improve long-term productivity, support environmental sustainability and foster resilience.
24. APEC economies need to invest in knowledge and innovation through research, farm advisory services and market data (for transparency) such as OECD data and analysis of food systems.
25. APEC economies need to support the provision of temporary interest-free plans, payment deferrals and simplification of banking requirements [during economic shocks].
26. Member economy regulations must cover the protection and encouragement of start-up innovation without compromising the development of traditional banking institutions, services and products.
27. APEC economies need to enhance cross-border cooperation through activities such as electronic certification production and acceptance, training border officers in new systems and learn and leverage successful approaches in other economies.
28. APEC economies need to recognise that sustainability is a feature of both the productive sector and the service industry.
29. APEC economies need to support innovative services for sustainability and public-private partnerships which are key.
30. APEC economies need to support sustainable developments such as organics with regulatory frameworks (government legislation) and verification (public/private). They need to enforce legislation to limit uncertified or fraudulent claims.
31. APEC economies could promote existing certification platforms such as Fairtrade to strengthen their certification efforts.

32. APEC economies could use developments and best practice from elsewhere in the world to address resource depletion and water source/supply issues – re-use, capture and redistribution.
33. APEC economies need to apply mutual recognition to promote trade and ‘virtual APEC standards’ eg of organic regulations and standards
34. APEC economies need to focus on the ‘first mile’ to connect the food supply chain (grower to road) and improve efficiency and reduce wastage.
35. APEC economies need to explore public-private partnerships to offer extension and training services to farmers particularly to support farmers and guide them in accessing and using support programs especially in the initial stages.
36. Member economy governments need to ‘join up the dots’ in education and remove duplication.
37. Member economies should engage influential industry associations/ cooperatives in developing education programs, since their endorsement is crucial to uptake.
38. APEC economies need to encourage the uptake of technological tools and automation practices where feasible eg fostering equipment-sharing initiatives that could be led both by large-scale farmers (private) or by the government (public).
39. APEC economies need to develop communication messages about the benefits of sharing and models of educational material on equipment use and maintenance.
40. Member economy-led industry collaborations could foster automation in food production and distribution and real time traceability such as through blockchain.
41. APEC economies need to support financial instruments such as green loans (loans for sustainable activities such as soil and water recovery) and sustainable investments.
42. APEC economies need to be aware that information asymmetry is one of the primary reasons for the difficulty of small stakeholders’ transaction and marketing behavior.
43. APEC economies need to recognise that ICT platforms can address problems of capital shortage and financing difficulties.
44. APEC economies need to adopt plans for seasonal work arrangements.
45. APEC economies need to develop suitable communications plans to 1) identify the best channels of outreach (eg chatrooms) and 2) educate farmers on how these programs benefit them.
46. APEC economies should never underestimate the value of investment in research and development. The importance of science and government investment in basic science were critical to the success of the economy.
47. In crisis management mode, decision-making processes had to ramp up dramatically and more risks needed to be taken because if nothing was done the risks were much larger.
48. In crises, developing strong partnerships between the member economy government and the private sector were key. For a partnership’s effectiveness, monitoring was needed as the partnership’s developed to assess how the relationship was progressing over time.
49. Member economy governments and industry should spend time on what could be the industry’s next blind spot.

50. APEC economies need to drive public-private partnerships which are key to marketing successes and to trade.
51. APEC economies need to work innovatively to make agriculture attractive to youth eg cadetships, layered micro-qualifications,
52. APEC economies need to leverage trends such as e-commerce (for trade and marketing), live streaming (such as in China), cooperative buying by consumers and blockchain traceability.
53. Services need to ensure marketing messages are tailored to the consumer audience.
54. Comprehensive indigenous engagement is necessary using the principle of “Nothing about us without us”.
55. ‘Fit for purpose’ mechanisms, including legal mechanisms for intellectual property of indigenous developments, are needed in the food system.
56. The long horizon of indigenous developments provides a model for intergenerational strategies and actions.
57. APEC economies need to incorporate STEM in indigenous economic activities and collective efforts to promote sustainable development.
58. APEC economies need to be willing to partner with indigenous businesses to bring groups together and build solutions and relationships.
59. APEC economies need to recognise that joining the knowledge of indigenous people with western scientists would enable water and environmental issues to be tackled successfully and would have significant value-add on how issues and future challenges could be addressed.
60. APEC economies need to strengthen economic initiatives that had an impact on local food production and to strengthen the promotion of local produce.