

New Zealand Agricultural and Resource Economics Society 2026 Conference Handbook

Thursday 27 August 14:30-15:50		Title	Abstract
Contributed Papers Session 1			
Stream 1	Chair: Wanglin Ma	GHG measurement & farm mitigation (Avon Room)	
1	Phil Journeaux	Life Cycle Analysis of Embedded CO2 in Palm Kernel Expeller	With industries now looking to report on Scope 3 greenhouse gas emissions, companies are including Life Cycle Analysis (LCA) of embedded CO2 in supplementary feeds. Dairy companies are also including this aspect within the calculation of on-farm emission intensity. This paper outlines a methodology of calculating embedded CO2 emissions in palm kernel expeller (PKE), which is a major supplementary feed imported into New Zealand, and shows a range of figures across the value chain for PKE, up to the point of arrival on-farm.
2	Erandi Kalehe Kankanamge	Navigating Dairy Emission Caps Under Volatile Market-Climate Scenarios: A Whole-Farm Bioeconomic Analysis	New Zealand dairy farmers face pressure to reduce greenhouse gas (GHG) emissions while maintaining profitability amid volatile market and climate conditions. This study developed a bioeconomic whole-farm mixed-integer linear programming model to identify profit-maximising practices under progressive emission constraints, integrating biophysical, economic, and GHG modules. Evaluated options included deintensification strategies (N fertiliser, stocking rate, and supplement adjustments) and specific mitigation options (high genetic merit [HGM] cows, changing supplement type, and EcoPond). Calibrated to a base farm representing average industry conditions, the model was applied to four representative farms across market-climate scenarios defined by milk price and pasture availability, with emission targets of 5% to 30% imposed progressively. Without specific mitigation options, deintensification was the sole pathway. N fertiliser reduction was the primary lever, followed by stocking rate and supplement reductions. Gross margin losses ranged from 17.9% to 24.4% at the 30% cap. Emission intensity improved modestly as emissions and production declined proportionally. When specific mitigation options were introduced, changing supplement provided no advantage over deintensification. EcoPond generated modest gains but was unviable under low milk prices. HGM cows delivered the largest benefits, boosting gross margins 27% to 32% above deintensification at the 30% cap, reducing emission intensity, and decoupling emissions from production. Optimal pathways varied by scenario. HGM was most profitable across all farm types, with EcoPond viable under high milk prices and high baseline emissions. Deintensification remained a viable under low milk price and low pasture conditions. EcoPond generated net losses under low milk prices. These findings highlight the need to tailor emission reduction policies to diverse farm systems and market-climate conditions in New Zealand's dairy sector.

3	Le Wang	Agricultural GHG accounting from national to farm-level - a comparative study of German and New Zealand	Demand for carbon footprinting information from food systems is growing and being used in policy, supply chain reporting and finance. Accurate greenhouse gas (GHG) measurement now shapes farm incentives, access to low carbon markets and customers, sustainability linked finance, and the design of carbon pricing or reward schemes. Because most food system emissions occur on farms, farm level GHG tools are essential for estimating product carbon footprints. However, different farm level GHG accounting methods frequently generate divergent results when applied to the same farm, thereby undermining their credibility and use. In response, an increasing number of initiatives seek to establish nationally standardised accounting methods grounded in national GHG inventories and IPCC guidelines. These initiatives are mostly at the country level, potentially limiting the international comparability of carbon footprints. This paper presents a framework for the systematic comparison of farm level GHG accounting methods across national contexts. The framework is applied to two approaches that adapt national GHG inventories to the farm scale: the AgriGHG tool (Germany) and the Farm Emissions Method (New Zealand). As part of this comparison, focusing on enteric methane emissions from dairy cows, we conduct an empirical comparison of the two methods. The empirical results indicate that estimated enteric emissions are closely aligned across methods. Our findings suggest that, despite differences in national contexts, substantial methodological similarities exist between the AgriGHG tool and the Farm Emissions Method.
4	Wanglin Ma	Catchment Groups and Agricultural Greenhouse Gas Mitigation Practices in New Zealand	Mitigating greenhouse gas (GHG) emissions is a primary task for realizing sustainable agricultural production. This is extremely important in countries where agriculture is dominated by animal husbandry, such as New Zealand. This study explores the pathway to mitigate GHG emissions with a particular emphasis on the role of catchment group participation. Using an inverse-probability-weighted regression adjustment estimator to analyze data from 2,369 New Zealand farmers, we find that participating in catchment groups helps farmers adopt more agricultural greenhouse gas mitigation practices. Specifically, our study shows that catchment group participation can improve the adoption of practices, including pasture and feeding management, fertilizer management, manure management, pasture/forage diversification, renewable energy use, herd size reduction, livestock genetics improvement, animal productivity improvement, livestock reproductive performance improvement, and animal health improvement. Furthermore, the present study also documents that current participation generally has stronger effects than past participation, suggesting that ongoing engagement provides more intensive support for adopting GHG mitigation practices, whereas past participation still generates persistent but weaker learning effects. Based on the empirical results, we propose that policy efforts should not only encourage farmers to participate in catchment groups but also strengthen their continued participation.

Stream 2	Chair: Ariel Singerman	Value chains & agrifood markets (Mainland Room)	
1	Xianhui Geng †	Quality Certification, Information Frictions, and Export Survival: Evidence from China	In developing countries, export relationships are generally characterized by short survival durations, particularly in agricultural trade, where information frictions render trading ties more susceptible to disruption. From the perspective of information frictions, this paper investigates whether quality certification, as an institutionalized signal, can mitigate information asymmetry and enhance export survival. By matching ISO 22000 certification data with China's Annual Survey of Industrial Firms and the Chinese Customs Database, we construct a firm's destination panel dataset and employ a staggered difference-in-differences approach to identify the impact of quality certification on export relationship survival. The findings reveal that quality certification significantly reduces the probability of export market exit, thereby prolonging the duration of trade relationships. Mechanism analysis indicates that this effect primarily arises from the alleviation of information frictions: certification provides a verifiable quality signal that lowers transaction uncertainty and strengthens buyer trust. Further analyses show that the certification effect is more pronounced in contexts characterized by greater geographic distance, more intense industry competition, and high-income destination markets, suggesting that the role of certification strengthens systematically with the degree of information frictions. Meanwhile, certification also substantially raises firm compliance costs, underscoring a trade-off between signaling benefits and cost constraints. This study demonstrates that, within the context of developing countries, reducing information frictions constitutes a vital mechanism influencing export survival, thereby providing new micro-level evidence for understanding the dynamic features of agricultural trade.

2	Wei Qin Li 00	The Impact of Community Embeddedness on Rural Residents' Political Participation: Evidence from Hainan Province, China	Improving rural residents' political participation is essential for modernizing rural governance and strengthening democratic processes in rural communities. Despite its potential to explain villagers' connections to community life and collective affairs, community embeddedness remains underexplored as an analytical perspective in existing studies. This study examines the impact of community embeddedness, encompassing environmental, social, and psychological dimensions, on rural residents' participation in village elections using survey data from 1,083 rural residents in Hainan Province, China, the entropy weighting method, and an ordered logit model. The results show that community embeddedness significantly increases the extent to which rural residents participate in village elections. It is worth noting that whilst environmental embeddedness, social embeddedness and psychological embeddedness all significantly enhance the extent of rural residents' political participation, the promotional effects of environmental and social embeddedness are stronger than psychological embeddedness. Mechanism analysis indicates that sense of trust and sense of value are key mechanisms through which community embeddedness influences rural residents' political participation. Specifically, higher levels of community embeddedness strengthen the sense of trust and enhance the sense of value, thereby increasing rural residents' intrinsic motivation to participate in village electoral activities. These findings offer important theoretical and empirical insights into the psychological mechanisms linking community embeddedness to rural political participation, and provide policy implications for enhancing rural residents' participation in rural governance.
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3	Lina Sukarman *	Spatial Group Model Building as a Participatory Approach for Understanding Indonesia's Rice Value Chain	The rice sector plays a vital role in Indonesia's economy, supports national food security goals, and enhances rural livelihoods, making the sector a major government policy priority. Government interventions are implemented through Perum Bulog, a national food agency responsible for rice procurement, price stabilisation, rice import, and market operations. While these interventions aim to ensure food availability and support market and price stability, they can generate broader consequences across the value chain, influencing production decisions, processor performance, actors' incentives, and market access and coordination. Understanding such system-wide impacts is challenging because of the nature of complex agri-food value chains and the interconnected decisions from multiple actors. This creates a need for a participatory approach that enables the sharing of understandings and captures the relationships within complex agri-food systems. As the first phase of a broader system dynamics modelling effort, this study describes the participatory Spatial Group Model Building (SGMB) process that served as a collaborative data-collection method for the subsequent development of a quantitative systems dynamic model. The SGMB workshops not only contributed to the shared learning process among participants, they also contributed to the understanding of several causal loops in the value chain that will be foundational to the development of the SDM. This paper further reflects on the practical realities of conducting a participatory approach, including the challenges in facilitation and stakeholder engagement. The findings demonstrate the role of SGMB in collaborative understanding of complex agricultural value chain analysis, while also contributing to the conceptualisation of future model development work, which can support better policy-making decisions. Keywords: agricultural value chain, Indonesia, system dynamics, policy analysis, rice, spatial group model building.
4	Hui Liao *	From Bobby Calves to Market Value: Assessing the Feasibility of a New Zealand Veal Sector	New Zealand produces around two million dairy calves each year, of which approximately 80% are slaughtered at an early age. This study examines the potential of developing a veal industry in New Zealand and evaluate how collaborative marketing structures across stakeholders could facilitate the utilization of bobby calves. Using both qualitative and quantitative methods, the research analyses the veal value chain, including calf supply, on farm production systems, processing capacity, market development, and sustainability implications. The findings show that New Zealand has an opportunity to develop a viable veal industry, but seasonal calf supply, production cost, processing mismatch, welfare expectations, and product supply consistency limit large scale expansion. Ongoing success will depend on effective collaboration among farmers, processors, exporters and retailers. This study offers insights into the future development of New Zealand's meat industry and highlights the importance of collaborative governance, policy support and alignment with evolving sustainability and welfare expectations.

Stream 3	Chair: Alan Renwick	Water & irrigation (Ward Room)	
1	Wei Yang	Small clam, big bill: A bioeconomic analysis of <i>Corbicula fluminea</i> invasion in the Waikato River, New Zealand	Biological invasions impose escalating costs on global infrastructure, yet economic assessments for recently detected invasions remain scarce. This study develops a stochastic bioeconomic model evaluating management strategies for the gold clam (<i>Corbicula fluminea</i>) invasion in New Zealand's Waikato River system, which supplies water to two million people and supports nine hydroelectric dams. The model integrates population dynamics, spatial spread, and economic impact functions across 25 vulnerable water infrastructure facilities. Monte Carlo simulation compares four scenarios over a 20-year horizon: Do Nothing; Status Quo (current reactive facility-level practices); Early Detection and Rapid Response (EDRR; enhanced surveillance with rapid response to new detections); and Sustained Control (intensive ongoing suppression and pathway management at infrastructure facilities). EDRR dominates Status Quo in every simulation, achieving a median benefit-cost ratio of 131.1:1 at an incremental government cost of approximately NZ\$940,000 per year. Sustained Control achieves the lowest expected total costs (NZ\$742M mean NPV versus NZ\$3,182M under Do Nothing) and dominates Status Quo in 100% of simulations. Infrastructure damage costs account for 94.8%–96.8% of total NPV across all scenarios; catastrophic failure risk contributes a further 5% under passive management. The analysis covers direct infrastructure and market-valued operator costs only; non-market values, including ecosystem services, cultural values, and recreational losses, represent a systematic underestimate of total social costs. Rankings are robust to parameter uncertainty and discount rate variation. This study provides the first comprehensive bioeconomic assessment of <i>C. fluminea</i> management in New Zealand, emphasising immediate investment in surveillance while the window for cost-effective intervention remains open.
2	Sopha Chhun	Bay of Plenty Land Use Change Assessor (LUCA): An Integrated Decision-Support Tool	Land use is a critical determinant of freshwater outcomes, economic activity and community wellbeing. This presentation introduces the Land Use Change Assessor (LUCA), a scenario-based decision support tool developed by Bay of Plenty Regional Council to explore the economic, environmental, and social implications of land use change at a Freshwater Management Unit (FMU) or catchment scale. LUCA adapts the Integrated Impact Assessment framework developed by the Our Land and Water National Science Challenge to reflect regional land uses, data availability, and freshwater management priorities. The tool integrates spatial baseline land use information with per-hectare impact estimates across three wellbeing domains. Economic impacts include direct, indirect, and induced effects on value-added and employment, alongside indicative measures of land value and median earnings by industry. Environmental indicators focus on freshwater-relevant pressures and outcomes, including nutrients, sediment, <i>E. coli</i>, water quantity, groundwater quality, estuarine health, biodiversity, and greenhouse gas emissions. Social wellbeing is assessed using six high-level indicators capturing connection to nature, access to amenities, housing affordability, life satisfaction, and sense of belonging. Users can define and iteratively test alternative land use scenarios by reallocating areas between land uses and adjusting assumptions. LUCA presents net impacts of the scenarios, highlighting trade-offs and co-benefits across wellbeing domains. Emphasising relative comparison rather than precise prediction, results are accompanied by confidence ratings of inputs to signal the strength of underlying evidence. LUCA is designed as a transparent conversation-starter to support catchment-scale collaboration, voluntary action, and informed discussion during freshwater policy transition, rather than as a regulatory or forecasting model.

3	Kenny Bell	Rapid meta-analysis of irrigation water values in New Zealand using frontier AI	Estimates of the value of irrigation water in New Zealand are primarily reported in consultant outputs developed to support irrigation scheme investments, with a small number of more academic studies. These studies use different methods, units, assumptions, land-use contexts, and spatial scales, making the evidence difficult to compare or synthesise. This paper demonstrates a rapid, human-supervised meta-analysis workflow using frontier generative AI coding tools to extract and structure evidence from this dispersed literature. The workflow identifies relevant studies, extracts reported water value estimates, classifies valuation methods, records contextual variables, and screens study quality. The resulting database supports methods synthesis, summary statistics, and traditional meta-analysis estimates. All extracted concepts and values are supported by an automatically generated evidence pack and associated online viewer for rapid checking of the outputs. The techniques demonstrate a concrete use case for using frontier AI tools to process the diverse repository of text-based information in Aotearoa into usable data.
4	Alan Renwick	Development of an interactive pricing tool to fund nitrogen mitigation measures	This presentation will discuss the process that led to the creation of an interactive pricing tool to fund nitrate mitigation measures for the Amuri Irrigation Company (AIC) in North Canterbury. The AIC manages the large Balmoral, Waiau and Waiareka irrigation schemes in North Canterbury (collectively known as the Amuri Basin). Combined, these schemes now irrigate over 28,000Ha. The Amuri Basin faces significant water quality challenges from elevated nitrate nitrogen levels in surface and ground water. Improving water quality and reducing N-loss across the Basin is considered essential to promote environmental wellbeing while ensuring the renewal of resource consents. The AIC concluded that coordinated edge of field mitigations were the most effective way to achieve water quality improvements. This could be achieved through constructing and restoring wetlands and seepage areas to treat nutrients and enhance biodiversity and mahinga kai values. Historically, AIC has funded all costs evenly on a per share basis, however in this instance, it was considered a fair and equitable approach that those with the greatest environmental impact contribute the most towards treatment mitigations such as restoring wet or riparian areas. A range of metrics to proxy environmental impact were considered including irrigation efficiency, n-loss based on Overseer and stocking rates. A survey of shareholders was undertaken to garner their views both on the overall aim of raising funds as well as the specific metric. In the end cow numbers were considered the simplest and most reliable and acceptable indicator. An excel spreadsheet model was developed that for each holding outlined their contribution to the fund relative to the average across the scheme as well as for other similar farm types. More progressive measures were also considered including using the scheme to reward those with low emissions by transferring payments from high emitters as well as tiering the payment system. The tool is being trialled across the scheme this year with the aim of being implemented fully during the next irrigation season.

Thursday 27 August 16:15 - 17:45		Early Career Researcher Session	
Stream 1	Chair: Phil Journeaux	ECR1 (Avon Room)	
1	Mubeen Rehman * (Discussant: Phil Journeaux)	How have water reforms impacted irrigation farmland prices in South Australia?	The unbundling of water rights from land in Australian water markets, followed by the separation of access, delivery, and use rights, is designed to facilitate water trading and promote the reallocation of water toward higher-value consumptive uses. This study examines the implications of this policy reform for irrigation agricultural land values in the Murray-Darling Basin area of South Australia (SA) within a hedonic pricing framework that incorporates farmland characteristics, including physical attributes, production industries, natural capital, and economic and spatial influences. We aim to estimate the causal impact of unbundling water policy on irrigation farmland sales prices and assessment valuations in SA using two datasets: 1) a geocoded, parcel-level cadastre dataset of irrigation farmland market transactions, providing detailed sales information across all property types over a 40-year period from July 1985 to June 2025; and 2) agricultural land assessment valuations data spanning July 2002 to June 2025. Employing a difference-in-differences (DiD) and propensity score matching DiD (PSM-DiD) empirical methodologies, the results reveal that the implementation of the unbundling policy is associated with a decline in irrigation farmland values in the South Australian Murray region. This effect arises as water, once separated from land, becomes a tradable asset, enabling irrigators to reallocate water to higher-value uses as well now owning water as a tradeable asset, which this value more than offsets losses in land values. The estimated causal effects are robust to alternative specifications using assessment valuations data. Keywords: Farmland market transactions; Assessment valuations; Murray Darling Basin; Unbundling policy; Hedonic pricing; Difference-in-differences; Propensity score matching

2	Nang Ei Mon The * (Discussant: Wei Yang)	Traditional Ecological Knowledge, Attitudes, and Environmental Preferences: A Hybrid Choice Model Application in Inle Lake, Myanmar	Inle Lake is a world-renowned freshwater lake in Myanmar and supports lake-dependent communities through various ecosystem services. The long-term sustainability of the lake depends on the knowledge and conservation attitudes of the local communities. This study aims to investigate the impact of conservation attitudes (ATT) and Traditional Ecological Knowledge (TEK) on household preferences for environmental improvements in Inle Lake. We use a Hybrid Choice Model (HCM) that incorporates both monetary and time contributions, based on data from 422 households in floating household communities. The choice experiment includes four ecological attributes: water quality, biodiversity, cultural festivals and events, and floating garden practices. Initial results indicate that conservation attitudes significantly increase willingness to contribute, while TEK does not have a direct effect when attitudes are included. This suggests that TEK may operate indirectly through attitudes. Guided by behavioural theory, a mediation framework is applied, showing that TEK significantly shapes ATT, which in turn influences preferences and willingness to contribute. Welfare estimates show a strong preference for improvements in water quality and biodiversity in the form of willingness to pay and time contributions. The findings highlight the importance of integrating knowledge-based and behavioural pathways into environmental policy design, particularly in developing-country contexts. Keywords: Hybrid Choice Model; Traditional Ecological Knowledge (TEK); Conservation attitudes; Environmental preferences; Willingness to pay; Willingness to contribute time; Inle Lake
3	Jianqiang Huang (Discussant: Maksym Polyakov)	The biodiversity dividend: Wellbeing gains and economic values of metropolitan park visitation in South Australia	Park visitation is established as a conduit for public health, yet the marginal economic value of biodiversity within these spaces remains less understood. This study quantifies the health and economic benefits associated with varying biodiversity levels across six metropolitan parks in Adelaide, South Australia. Utilising in-situ survey data, we employed beta regression models to analyse the Personal Wellbeing Index (PWI) and the biodiversity-specific BIOWELL scale, controlling for sociodemographic covariates and visit characteristics. The analysis indicates that park visitors report a 8.9% higher PWI than the South Australian population average. Extrapolating this gain using established healthcare-savings frameworks suggests a potential national economic contribution of A\$34.7 billion per annum. Drawing upon the ‘dose-response’ literature, we argue that the higher biodiversity richness found in national parks enables superior feedback compared to lower-biodiversity urban parks. Specifically, visits to national parks yielded minimum annual wellbeing gains of A\$202 per person more than lower-biodiversity sites. Furthermore, engagement in nature-based activities (e.g., environmental education and volunteering) was associated with a 37.6% increase in the precision of wellbeing outcomes, suggesting that biodiverse environments may reduce health outcome variance among visitors. These findings provide rigorous evidence for prioritising high-quality biodiversity in urban planning to optimise public health investments.
Stream 2	Chair: Katie Bicknel	ECR2 (Mainland Room)	

1	Prabodha Rathnayaka * (Discussant: Katie Bicknel)	Climate Change Adaptation and Production Efficiency in Sri Lankan Tea Plantations: An Endogeneity-Corrected Stochastic Frontier Analysis	Climate variability and adaptation in perennial plantation systems remain insufficiently understood despite the high climate sensitivity of plantation productivity and increasing adaptation pressures from sustainability initiatives and global value chains. This study examines the effects of climate variability and adaptation on technical efficiency in Sri Lanka's tea sector using an unbalanced monthly panel of 51 tea plantations across major tea-growing regions from 2004–2024. An endogeneity-corrected translog stochastic frontier model is employed to estimate production efficiency while accounting for endogenous adaptation behavior. The results reveal that temperature positively affects green leaf production, with a mean marginal effect of 7.9%, consistent with an inverted U-shaped relationship, while rainfall effects are weakly negative. Adaptation significantly reduces technical inefficiency, indicating that greater adaptation intensity improves productive efficiency. A 1% increase in labor increases output by 0.28%, followed by land extent (0.16%), while fertilizer elasticity is negligible (0.01%). Mean technical efficiency remains low at 0.17, indicating substantial scope for productivity improvement. Disaggregated analysis reveals strong heterogeneity across tea-growing regions and plantation-size categories. Temperature effects are positive in cooler up-country and mid-country plantations but negative in hotter low-country regions. Adaptation effects also differ across regions and plantation sizes, improving efficiency among medium and large plantations while increasing inefficiency among smaller and low-country plantations. Policy and institutional implications suggest that adaptation strategies should consider regional agro-climatic heterogeneity and scale-specific production constraints in climate-sensitive plantation systems.
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2	Samia Zahra * (Discussant: Darran Austin)	Is Decoupling Growth and Carbon Emissions a Challenge? Evidence from G7 Countries.	G7 countries are highly industrialised and have also become the hub of international climate agreements after the Paris Agreement, alongwith a considerable share of carbon emissions in the total emissions at the global level. This study investigates the impact of green growth and renewable energy productivity towards the goal of carbon neutrality in G7 countries. This study replaces multi-dimensional green growth index with traditional economic growth in the analysis and also investigates its validity with reference to Environmental Kuznets Curve (EKC) hypothesis. Quantile regression is used for estimation based on data for the period 1990-2021. Our study finds that green growth has a significant inverted U-shaped relationship with carbon emissions, indicating that when green growth increases, the rate of carbon emissions continues to increase till threshold level and then starts to decline thereafter. The outcome shows that renewable energy productivity has a U-shaped relationship with carbon emissions, which means when renewable energy productivity increases, the rate of carbon emissions continues to decline up to a threshold, then increases thereafter. Adjusted net income is identified as a determinant of achieving carbon neutrality. Therefore, when developing policies to reduce carbon emissions, policymakers should consider the non-linear relationships between carbon emissions and green growth, and between carbon emissions and renewable energy productivity, as well as activities that promote green trade and emissions trading schemes. Keywords: Green Growth, Renewable Energy Productivity, Environmental Kuznets Curve (EKC) hypothesis, Carbon Neutrality
3	Majeeda Mohamed * (Discussant: Meike Rombach)	Climate-Smart Agriculture in the Maldives: A stakeholder analysis of adoption constraints and drivers	The Maldives, like many small island developing states, is highly vulnerable to the impacts of climate change. Rising sea levels, saltwater intrusion, and unpredictable rainfall are increasingly threatening the country's agricultural productivity. Climate-smart agriculture (CSA) offers a promising pathway to enhance existing agri-food systems by increasing adaptation to the changing climatic conditions. However, adoption of CSA practices remains low in the Maldives. Identifying the determinants that drive or hinder CSA adoption is essential for developing practical interventions and policies that are suited to the realities of small island nations. This paper presents findings on climate change impacts in the agri-food sector of the Maldives and the factors influencing CSA adoption, drawn from 35 semi-structured interviews with participants representing farmers, industry experts, food distributors, and consumers. Data were analyzed using thematic analysis. Findings reveal that climate change severely disrupts food production and supply, consequently affecting food availability, accessibility, and affordability for consumers. Thematic analysis identified several barriers within financial, institutional, informational, technological, and personal domains affecting CSA adoption. Conversely, the most prominent drivers centered on the perceived production, environmental, and economic benefits of CSA technologies. The study contributes to the dearth of literature on CSA in small island contexts and provides a foundation on designing locally relevant interventions in the agri-food systems.

Stream 3	Chair: Frank Scrimgeour	ECR3 (Ward Room)	
1	Banna Banik * (Discussant: Frank Scrimgeour)	Energy Price Shocks and Foreign Exchange Reserves in Bangladesh: Do Remittances Act as a Buffer or a Mediator?	This paper examines how global energy-price shocks affect foreign exchange reserves in Bangladesh and whether remittances act as a buffer or a mediator in that process. Using monthly data for 2004M6-2025M9, we estimate a structural vector autoregression to trace the transmission of energy shocks through imports, the real exchange rate, remittances, and reserves. The results show that positive energy-price shocks generate a delayed and persistent decline in reserves, consistent with sustained balance-of-payments pressure in an energy-importing economy. Remittance shocks, by contrast, exert a positive and statistically significant effect on reserves, indicating that remittances provide an independent source of external resilience. Remittances also respond modestly and countercyclically to energy-price shocks, but only for a short period and not strongly enough to offset reserve losses. The results are robust to alternative energy-price proxies, additional domestic controls, and alternative recursive ordering. Regional disaggregation further shows that remittances from oil-linked corridors provide somewhat stronger and more persistent support to reserves than inflows from non-oil corridors. Overall, remittances work as a partial buffer rather than a full mediator.
2	Farhana Arefeen Mila * (Discussant: Waranan Tantiwat)	Beyond Convenience: Consumer Trust, Health Perceptions and Willingness to Pay for Ready-to-Eat Freshly Packaged Fish Products in Urban Bangladesh	Rapid urbanisation, rising incomes, and increasingly time-constrained lifestyles are reshaping food consumption patterns in Bangladesh, generating growing demand for convenient and value-added food products. Although fish remains a staple of the Bangladeshi diet and an important source of nutrition, traditional fish preparation is often time-consuming, creating opportunities for Ready-to-Eat (RTE) freshly packaged fish products. However, empirical evidence on consumer acceptance and willingness to pay premiums (WTPP) for such products remains limited. This study examines the socio-economic and behavioural determinants of consumers' willingness to pay premiums for four RTE fish species—Hilsa, Silver Pomfret, Rohu, and Catla—using survey data collected from 394 consumers in Dhaka, Bangladesh. An integrated analytical framework combining Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and a Cragg-Hurdle Model was employed to capture both the decision to pay a premium and the magnitude of the premium. The results reveal that premium payment is a two-stage decision process, with female consumers, employed individuals, higher-income households, and households with children exhibiting significantly greater willingness to pay, while larger family size reduces premium payments. Health- and convenience-related motives positively influence WTPP, whereas natural-content, ethical, and sensory motives play a limited role. Significant species-level heterogeneity is observed, with Hilsa commanding the highest premiums, followed by Silver Pomfret, Rohu, and Catla. The findings demonstrate that demand for RTE fish products is driven not only by convenience but also by health perceptions and socio-economic characteristics, offering important implications for seafood processors, retailers, and policymakers seeking to promote sustainable value-added fish markets in rapidly urbanising food systems.

3	Sauda Afrin Anny * (Discussant: Wanglin Ma)	Measuring farmers' digital technology readiness: a multidimensional index approach from Bangladesh.	This study examines farmers' digital technology readiness in Bangladesh by addressing limitations in existing measurement approaches. Technology readiness, defined as an individual's propensity to embrace and use new technologies (Parasuraman, 2000), has largely been assessed through psychological constructs such as optimism, innovativeness, discomfort, and insecurity. While the Technology Readiness Index (TRI) provides useful insights (Parasuraman, 2000), it often overlooks capability and contextual factors. Similarly, COM-B-based approaches (McCampbell et al., 2023) rely on binary measures that could not capture nuanced user perceptions. Empirical evidence on farmers' readiness in developing countries, particularly Bangladesh, remains limited. This study addresses these gaps by developing a multidimensional readiness index for Bangladeshi farmers. Data from 433 farmers across three districts were collected using 43 Likert-scale items derived from technology readiness, behavioural theory, and digital agriculture literature. Data screening confirmed acceptable normality, absence of multicollinearity, and satisfactory reliability. Following the removal of five items with low item-total correlations, exploratory factor analysis (KMO = 0.908, $p < 0.001$) identified seven dimensions: innovativeness, capability, motivation, social opportunity, physical opportunity, insecurity, and discomfort. A composite index was constructed with equal weights, applying reverse coding for inhibitor dimensions. The overall readiness score (3.11) indicates moderate preparedness. Farmers exhibited higher readiness in innovativeness, motivation, and social opportunity, but lower readiness in capability, insecurity, and discomfort. The findings highlight that user readiness is as critical as infrastructure for digital agricultural platforms adoption. The study contributes a comprehensive, perception-based framework and offers practical implications for capacity building and policy interventions.
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Friday 28 August 8:40 - 10:00		Contributed Papers Session 2	
Stream 1	Chair: Zack Dorner	Adoption, extension & farmer behaviour (Avon Room)	
1	Ariel Singerman	Voluntary Collective Action to Address Growing Agricultural Challenges in Two Countries: Experimental Insights and Commonalities	We conducted two framed field economic experiments with citrus farmers in Florida, United States and soybean farmers in Argentina to investigate their willingness to coordinate pest and weed management efforts. Despite the contrast between these two agricultural contexts, we find striking behavioral commonalities. In both countries, farmers display aversion to strategic uncertainty, rely heavily on beliefs about their neighbors’ actions when deciding whether to participate, and systematically underestimate the probability of successful coordination even when opportunity costs are low. These common findings across such different settings suggest that the underlying mechanisms are not context specific but instead reflect more general features of decision-making under strategic interdependence, lending support to the external validity of our findings. The results highlight key psychological and economic barriers to cooperation and offer policy-relevant insights for designing interventions to enhance participation in voluntary area-wide pest management programs. While voluntary coordination can enhance pest management effectiveness and be Pareto-optimal, the success of the collective action depends on overcoming farmers’ reluctance to participate. The evidence that farmers systematically underestimate the probability of successful coordination even when opportunity costs are low highlights a key behavioral barrier that can lead to coordination failures. Interventions that mitigate strategic uncertainty and build trust among participants’ such as targeted subsidies or technical assistance’ could encourage participation among farmers who would otherwise be unwilling to engage in coordinated efforts. Beyond the immediate application to pest and weed resistance management, our findings contribute to a broader understanding of cooperative behavior among farmers in the presence of strategic uncertainty.

2	Praseed Thapa *†	Psychological drivers of agricultural practice adoption in the Great Barrier Reef catchments: a pre-post analysis using mixed effects model	The adoption of land management practices has been promoted by Australian and Queensland governments to improve water quality flowing into the Great Barrier Reef (GBR), largely affected by agricultural activities in the adjacent catchments. A substantial body of literature has identified several factors, including economic, risk and uncertainty, transaction costs, and policy instruments as important determinants of landholder adoption decisions. However, social drivers remain relatively underexplored. This study aimed to examine how landholders’ attitudes, group norms, and self-efficacy related to the adoption of management practices might vary over time across industries, and regions within GBR catchments. Using a linear mixed-effects model, we analysed responses from 383 landholders (‘before’: 383, ‘after’: 383) receiving project support from the Australian and Queensland Governments to change management practices who completed additional survey questions. The data was collected as part of the Paddock to Reef Integrated Monitoring Modelling and Reporting (Paddock to Reef) Program between 2019 and 2025. The most important results are: i) social drivers declined following project implementation, contrary to expectations, ii) sugarcane producers exhibited more positive attitudes, but lower social norms and self-efficacy compared to the grazing industry, and iii) substantial heterogeneity exists in social drivers across regions and farming practices. These findings highlight the importance of strengthening support mechanisms through targeted extension, peer learning, and capacity building initiatives. They also underscore the need to move beyond uniform policy approaches towards more context-specific and tailored interventions across regions and industries. Overall, the results provide useful insights for policymakers and practitioners seeking to enhance the adoption of land management practices in GBR catchments.
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3	Qu Lixue	Who Benefits from Extension? Heterogeneous Effects on Manure Use Efficiency	This paper examines the impact of agricultural extension services on manure-use efficiency, with a particular emphasis on treatment-effect heterogeneity. The analysis is based on household survey data collected from 793 farmers in three major potato-producing regions in Uttar Pradesh, India, during the 2023/2024 production season. While existing studies typically focus on average treatment effects, such estimates provide limited guidance for policy design when impacts vary across farmers. To address this limitation, we estimate marginal treatment effects (MTEs) to characterise how the returns to extension vary along the distribution of farmers' unobserved resistance to participation. The results reveal substantial heterogeneity in the effects of extension services. The estimated MTE is upward sloping, indicating that the gains from extension increase with unobserved resistance. Farmers who are less likely to access extension services experience larger improvements in manure-use efficiency when treated, whereas those more likely to receive extension services exhibit relatively small marginal gains. This suggests that the benefits of extension are concentrated among currently underserved farmers. At the aggregate level, the average treatment effect is positive, confirming that extension services improve manure-use efficiency. However, this average effect masks important variation across farmers. The increasing MTE profile is consistent with negative selection into treatment, whereby farmers with higher potential returns are less likely to participate. As a result, extension services may not be well aligned with the distribution of potential gains. These findings have important policy implications. Rather than uniformly expanding coverage, extension programs should prioritize harder-to-reach farmers and reduce barriers to participation. Keywords: Agricultural extension; Potato farmers; India; Manure use efficiency; Marginal treatment effects; Negative selection
4	Zack Dorner	What is the best way to inform farmers about environmental practices? Insights on voluntary adoption from a randomised control trial with Waikato dairy farmers	Providing information is a common strategy to encourage voluntary adoption of environmental practices on farms. We may expect it to work particularly well when motivated farmers receive new information about low cost, easy to implement practices that improve the environmental performance of their farms. Common strategies to provide information include information leaflets with general information, visits from farm advisors with tailored information, or demonstration events. We test these three strategies, and all three combined, in a randomised control trial (RCT) of dairy farmers in the Waikato, running from March 2024 to June 2026. The environmental practices we promote relate to management of runoff from tracks and races. Recent data and expert opinion suggest that this is a major source of E. coli in waterways, but farmers have low awareness of this issue. First, we surveyed farmers on their current practice levels, alongside other relevant information. Within this survey we asked whether they would be happy to further participate. This willing subset were randomly assigned to a control, or one of four treatment groups. We re-surveyed the farmers in 2026 to allow us to test for treatment effects. Findings will provide insights into how effective information provision strategies are in facilitating information transfer and practice adoption. These insights are valuable for industry and government alike when looking to inform and encourage voluntary adoption of sustainable farming practices.

Stream 2	Chair: Katie Bicknel	Farm systems & productivity (Mainland Room)	
1	Xia Xu *†	Does Agricultural Unmanned Aerial Vehicle Use Improve Grain Production Efficiency? Evidence from Rural China	Agricultural modernization is commonly understood as a process in which technological progress raises the productivity of conventional inputs. However, complex terrain and narrow operational windows limit the applicability of conventional mechanization. This paper examines whether agricultural drones can relax these spatial constraints and expand technological accessibility in agricultural production. We develop a conceptual framework in which technological progress improves productivity not only through input efficiency gains, but also by enlarging the conditions under which modern technologies can be effectively deployed. Agricultural drones represent a constraint-relaxing technology because they decouple crop protection operations from ground accessibility and enable precision application in locations and crop stages where conventional machinery is difficult to use. Using county-level data on agricultural drone diffusion and a panel of 1600 Chinese counties from 2017 to 2024, we employ fixed-effects models to estimate the productivity effects of drone adoption. Results show that drone diffusion significantly increases agricultural output and land productivity, but has no significant effect on labor productivity. Mechanism analysis suggests that these gains are mainly driven by reductions in pesticide use intensity, indicating improved precision application rather than labor substitution. The effects are stronger in hilly and mountainous areas and in major grain-producing regions. In addition, farmer cooperatives amplify the productivity gains from drone diffusion, highlighting the importance of organizational arrangements in translating technological accessibility into realized productivity improvements. This paper contributes to the literature on agricultural technology adoption and mechanization by identifying technological accessibility as a distinct channel through which innovation affects productivity.

2	Laila Arjuman Ara †	Productivity Shocks and Structural Adjustment in New Zealand's Meat Sector: A CGE Analysis	New Zealand's livestock meat sector, one of the country's most export dependent industries, earns around NZ\$11 billion annually and exports over 90 percent of its production. Despite its strong export orientation, the sector faces increasing competitiveness pressures in global markets. This research evaluates the effects of sector specific productivity improvements using a single country Computable General Equilibrium (CGE) model calibrated to a Global Trade Analysis Project (GTAP) based Version 11 Social Accounting Matrix (SAM). The analysis examines how Total Factor Productivity shocks drive structural adjustment within the meat sector and generate economy wide spillovers. Simulation results show that sector specific productivity gains substantially enhance output, export competitiveness, and factor efficiency within the meat sector. At the macro level, productivity shocks contribute to higher real GDP, improved terms of trade, and welfare gains. The findings highlight that productivity growth in the meat sector not only strengthens its international competitiveness but also drives broader structural adjustment across the New Zealand economy. These insights are relevant for policymakers considering strategies to enhance sectoral productivity, support value added processing, and improve resilience to global market volatility.
3	Quan He	Impact of Certified Seeds Adoption on Input Use, Productivity, Farm Economic Performance, and Risk Exposure: Evidence from Potato-Growing Households in India	This study develops a theoretical model showing how certified seed adoption influences agricultural performance under production uncertainty and risk aversion. The model shows that adoption improves seed effectiveness and induces adjustments in farmers' input use, thereby affecting input, output, economic, and risk performance. Using farm-level data from 793 potato farmers across three regions of Uttar Pradesh, India, we apply inverse probability-weighted regression adjustment to address selection bias and estimate impacts. The results show that adoption follows an inverted-U-shaped age pattern, is less likely among married farmers, and is more likely among farmers with larger farm size, stronger information access, and leadership-linked social networks, with significant regional heterogeneity. For input performance, adoption significantly increases total production costs, mainly through higher seed costs and, to a lesser extent, chemical fertilizer costs, indicating changes in input structures. Its effects on organic fertilizer, manure, pesticide, machinery, and hired labor costs are not statistically significant. For output performance, adoption has a positive but statistically insignificant effect on potato yield. It significantly reduces net returns and return on investment in the short run, suggesting that higher costs are not fully offset by yield or revenue gains. Adoption has no significant effect on yield variance or skewness, indicating that it does not substantially alter yield risk distribution. Generalized structural equation modeling shows that seed costs are the main mediating channel through which adoption affects output performance. Overall, certified seed adoption mainly affects performance by altering the input structure, especially through greater seed-related expenditures. These results highlight the need for support for seed affordability, seed-use guidance, input management, and information-based policies to facilitate cost-effective adoption.

4	Thi Kieu Oanh Nguyen †	Wine-grape Prices in Times of Wine Overstocks: What Will Happen with Australia?	This paper examines the determinants of wine-grape prices in Australia using a dynamic panel of 1,047 region-by-variety combinations observed from 2001 to 2023 (n=8,317). Motivated by a partial-adjustment framework, real wine-grape prices are modelled as a function of lagged prices, national stock-to-sales ratios, regional yields, and time trends. The Arellano-Bond estimator is used to address the dynamic structure of the model and endogeneity issues. Inventory conditions, proxied by the stock-to-sales ratio, exert a strong negative influence on real wine-grape prices: a 10% increase in aggregate wine stock-to-sales ratios leads to a reduction in real prices of more than 4% in short run and 5% in the long run. Because wine grapes are a perennial crop, producers have limited ability to adjust supply, and acreage adjustments are slow. As a result, when inventories are high, any rebound in prices is likely to occur gradually. These findings suggest that, under conditions of high stock-to-sales ratios, real wine-grape prices may remain depressed for an extended period.
Stream 3	Chair: Conal Smith	Food security & nutrition (Ward Room)	
1	Oluwatobiloba Adedayo Ogunmakin	Crossing Borders Without Papers: How Food Insecurity Fuels Irregular Migration in the MENA Region	This paper examines how food insecurity shapes migration aspirations and their orientation toward irregular migration in the Middle East and North Africa. Using microdata from the seventh wave of the Arab Barometer, we construct an experiential index of food insecurity and distinguish between overall migration aspirations and willingness to consider irregular migration among prospective migrants. Probit and sample-selection probit estimates show that food insecurity is positively associated with the probability of considering emigration and, conditional on having considered emigration, with willingness to migrate without the required papers. These findings suggest that food insecurity is related not only to the formation of migration aspirations but also to the orientation of these aspirations toward irregular pathways among prospective migrants. The results remain robust across subsamples, alternative measures of food insecurity intensity, and instrumental-variable probit specifications using Covid-related assistance as instruments for food insecurity. These findings suggest that development and humanitarian aid aimed at reducing food insecurity can play a critical role in mitigating irregular migration pressures and should be integrated into broader migration and development strategies.

2	Han Sun *	Sloping Agricultural Land Technology, Dietary Diversity, and Food Security: Evidence from Potato-growing households in Bhutan	Sloping Agricultural Land Technology (SALT) has been increasingly promoted as a climate-smart and soil- and water-conservation approach to farming on fragile uplands, yet evidence on its effects on household food security and nutrition remains limited. This study addresses that gap by examining the effect of SALT adoption on Dietary Diversity (SIDD), Food Consumption Score (FCS), and selected dietary indicators, using household survey data from potato-growing households in Bhutan. This study applies a conditional mixed-process model that jointly estimates the adoption decision and dietary outcomes to address potential endogeneity in SALT adoption. Results show that SALT adoption has a positive and statistically significant effect on both dietary diversity and food security. The adopters record a 0.124 increase in SIDD and a 19.66 increase in FCS. SALT adoption also raises the probability of achieving the highest iron-related dietary category by 26.0% and increases the probability of daily protein-rich food consumption by 40.5%, although no statistically significant effect is found for daily vitamin A-rich food consumption. Heterogeneity analysis reveals that the positive effect on SIDD is significant for both male and female household heads, but larger among male-headed households. The dietary diversity effect is strongest for large farms, followed by medium-sized farms, while evidence for the smallest farms is weaker. The effect is significant among lower-income households but not among higher-income households. A further analysis of intensity shows that adopting an additional SALT practice is associated with a 0.067 increase in SIDD, reinforcing the nutrition gains from broader uptake of conservation practices.
3	Xinyue Zou	Nutritional Information Sources and Dietary Quality Transitions: Evidence from Rural Households in China	Ongoing transformations in agri-food systems increasingly involve digital innovations, yet in rural areas of many developing countries, persistent gaps in dietary quality and protein intake remain closely linked to limited access to nutritional information. While households navigate a multi-source environment when making dietary decisions, existing research tends to isolate individual information sources—such as internet use or community programs—without considering how different sources interact. To address this gap, we examine how nutritional information influences rural dietary quality and protein structures. We construct a categorical treatment variable with four mutually exclusive choices based on information sources: smartphone-only, village-training-only, joint exposure, and neither. To account for endogeneity and selection bias among these multi-source portfolios, we apply a Multinomial Endogenous Switching Regression model to household survey data from rural China. The empirical results yield three key findings. First, households exposed to any form of nutritional information achieve significantly higher dietary quality and protein intake compared to those with no exposure. Second, smartphone-based acquisition exerts a stronger effect than village-based training alone, while the joint strategy consistently generates the most substantial improvements, highlighting a powerful synergistic advantage of multi-source integration. Third, gains in protein intake are more evident for legume-based protein than for animal-based protein. These benefits are further amplified for households within 5 km of town centers, which derive greater returns from combined sources. Overall, the findings underscore the importance of designing integrated, multi-source strategies that blend digital nutritional information delivery with village-level training to improve nutrition in rural areas.

4 Conal Smith	The geo-spatial and household drivers of food security in Aotearoa Food security is widely understood to exist “when all people at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy lifestyle” . (UNFAO, 1996). Building on this, food security extends beyond food alone. It depends on the wider conditions that enable people to access, choose, and produce food. In this sense, food security reflects the broader social, economic, and environmental determinants that structure people’s everyday lives. To understand the drivers of food security in Aotearoa, it is therefore necessary to be able to measure food security at the individual household or whānau level. We develop a measure of food security using data from the Household Economic Survey’s material wellbeing module (2019 to 2024 waves) and validate this against administrative data on health outcomes and housing characteristics from Statistics New Zealand’s Integrated Data Infrastructure and against the food security index collected through the New Zealand Health Survey. Compared to other New Zealand measures of food security, the HES-based food security index reflects enforced lack of access to food rather than relying on information service usage (such as accessing food banks) where policy decisions potentially affect access without altering underlying food security. Analysis of the HES food security index shows that food security is strongly tied to income, and material deprivation more widely, but is more strongly associated with direct access to food resources than is the case for more general deprivation or poverty measures. We explore the impact of living in a rural area, working in primary industries, access to social support networks, access to market food sources, and access to food outside the market sector (e.g. mara kai/community gardens) and discuss the relative impact of each of these on food security at the household/whānau level.
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Friday 28
August
13:00-14:00

Contributed Papers Session 3

Stream 1	Chair: Yvonne Matthews	Biodiversity, ecosystem services & land use (Avon Room)	
1	Carla Muller	Biodiversity Credits in New Zealand: Do Farm-Level Costs Align with Emerging Market Prices?	Biodiversity and nature credits are an emerging revenue opportunity for New Zealand farmers, positioned at the intersection of environmental outcomes and market-based incentives. However, as this market develops, significant uncertainty remains around the cost of generating and maintaining credits at the farm level, and how these costs align with early signals of demand and willingness to pay from buyers. This presentation examines biodiversity and nature credits from a farmer-centric economic perspective. We develop indicative cost estimates for a range of on-farm credit options, reflecting differing land uses, interventions and management requirements. These costs are assessed over relevant time horizons and include establishment, ongoing management, compliance, and opportunity costs. We then compare these farm-level cost structures with emerging evidence on market demand, including reported price ranges, buyer preferences, and transaction volumes in early-stage biodiversity markets, both within New Zealand and internationally where relevant. Particular attention is given to the implications of differing credit definitions (e.g. voluntary carbon plus biodiversity versus biodiversity only credits). Preliminary analysis suggests a material gap between the costs faced by farmers and the prices currently observed in emerging markets, with significant variability depending on credit type and context. This raises questions about the scalability of biodiversity credit systems and the conditions under which they can provide meaningful, durable income streams for landholders. The findings highlight key considerations for credit design, pricing and marketing. They also inform ongoing discussions around how biodiversity markets could support sustainable land use transitions in New Zealand, while ensuring credibility and practicality at the farm level.

2	Maksym Polyakov	What would make more farmers say "yes" to native planting?	This study surveyed rural landholders in New Zealand to understand what would encourage them to take part in programmes supporting native planting. We use a discrete choice experiment completed by landholders drawn from the Survey of Rural Decision Makers. We model the two-stage decision landholders face, whether to participate and how much land to commit, using a mixed logit model in willingness-to-accept space and a Poisson hurdle model, applied to three intervention types: native reforestation, wetland restoration, and riparian planting. Most landholders were unlikely to participate without financial compensation, and the level required varied widely across individuals, restoration types, and programme designs. Some landholders were willing to participate for relatively modest payments, while others required substantially higher compensation. Providing establishment and maintenance support significantly increased participation and reduced the payments required. Longer contract lengths reduced willingness to participate. For native reforestation, allowing a mix of native and exotic species lowered participation, suggesting a preference for fully native plantings. Property size did not strongly influence whether landholders chose to participate, but it did affect how much land they enrolled. Larger properties tended to enrol more land, although the increase was less than proportional to farm size. Overall, the results suggest that flexible programme designs are needed, as landholder preferences vary considerably across individuals and restoration types.
3	Yvonne Matthews	Now with 100% More Maps: New Ecosystem Service Layers for Aotearoa New Zealand	This presentation introduces a new set of nationally consistent spatial ecosystem service layers developed for the Parliamentary Commissioner for the Environment. The layers estimate the current annual marginal value of more than 30 ecosystem services across Aotearoa New Zealand, expressed in NZD per hectare per year and mapped on a 1-hectare grid. The layers and accompanying report are intended support more transparent and consistent incorporation of ecosystem service information into policy analysis, cost-benefit analysis, spatial planning, environmental assessment, and natural capital decision-making. The assessment adopts a supply-flow-demand framework that distinguishes ecosystem service potential, realised flows, demand, and beneficiaries. This recognises that ecological capacity does not automatically translate into benefits unless people, infrastructure, communities, or economic activities are connected to the service. The framework is aligned with CICES and MAES-style spatial assessment, with valuation grounded in welfare economics. The layers draw on national environmental, land-use, hydrological, population, infrastructure, and valuation datasets to represent provisioning, regulating, and cultural ecosystem services. Values are based on New Zealand evidence where possible, supplemented by carefully screened international evidence and benefit transfer methods where needed. The presentation will demonstrate an example application of the ecosystem service values, showing how the layers can be used to assess environmental trade-offs in a policy or appraisal context. It will also cover appropriate and inappropriate uses of the layers, including uncertainty, double counting, spatial aggregation, marginal versus total values, and use in appraisal frameworks. Rather than treating the layers as precise prices for nature, the guidance positions them as structured, transparent evidence for improving the visibility of ecosystem services in decision-making.

Stream 2	Chair: Meike Rombach	Food consumers & marketing (Mainland Room)	
1	Matthew Hale *†	Little Angus, your eyes are haunting me: Emotion and ethics in the NZ alternative meat market	Alternative meat consumption is rising in New Zealand, with supermarkets, restaurants, and fast-food chains offering plant and fungus-based options. Advertising is often provocative, highlighting the negative externalities of traditional meat production and influencing perceptions of agriculture, climate, health, and sustainability. This study analysed video clips of Impossible Burger, Beyond Meat, and Quorn advertisements, particularly their use of emotions and ethics. These factors are not widely discussed in the extant NZ consumer literature on plant-based meat advertising, but they impact the wider societal debate and the acceptance of these products in Aotearoa. Thirty-five YouTube videos were watched, transcribed, and analysed with NVivo, using an abductive approach to content analysis. Results show that ethical messaging reflects both normative and deontological approaches to ethics. Ads often highlight so-called animal cruelty in husbandry, either via graphic imagery or through suggestive language such as “no animals harmed.” Brands frame products as “morally right” choices, implying that consuming animals is ethically outdated or unjust. In more controversial ads, plant-based consumers are idolised as compassionate, modern, or socially aware, encouraging viewers to see their dietary choices as a reflection of their identity. Other ads focus on making plant-based products look and taste like animal-based products, aiming to minimise ethical tension and facilitate the transition to plant-based meat options. Furthermore, plant-based meat ads use emotion such as empathy, guilt, hope, and even shock to make ethical issues surrounding animal treatment more personal and morally confronting, often featuring cute young animals with large, expressive eyes to trigger protective instincts. Advertisements use emotional anchoring while interlinking ethics, emotions, and behavioural change. Following emotion-based frameworks from meat-reduction lifestyle studies, emotions were classified into two categories: victim-oriented and perpetrator-oriented. Victim-oriented emotions, or the moral emotions resulting from harm done to others, comprise empathy, compassion, and sadness. These arise when ads remind viewers of animals’ suffering, which has been shown to mediate intentions to reduce meat consumption. Perpetrator-oriented emotions, such as anger, disgust, guilt, and shame, emphasise animal welfare violations and often trigger strong guilt and shame, which may influence dietary intentions. Best practice recommendations for food marketers and agricultural practitioners are provided.

2	Meike Guenther	Exploring German Preferences for New Zealand Food and Beverage: Consumer and Gatekeeper perspectives	Germany is New Zealand's most important trading partner within the European Union, and the implementation of the 2024 EU-New Zealand Free Trade Agreement is strengthening bilateral trade relations. As New Zealand's economy relies heavily on agricultural exports, understanding German consumer preferences towards attributes in food and beverages from New Zealand is increasingly important for capturing premiums in market and maintaining market access. The perspectives of German consumers towards products from New Zealand are widely unexplored. The present study fills this gap and explores key factors driving German consumers' willingness to purchase and to pay a price premium for different food products from New Zealand. The research employed a mixed-methods approach consisting of an online survey of 1,100 German consumers and a series of semi-structured interviews with German gatekeepers. Survey results indicate that German consumers generally hold a positive image of New Zealand, and are willing to purchase and pay a premium for its products. Interview findings further confirmed that New Zealand's "clean green" image, together with attributes such as grass-fed production systems and high animal welfare standards, are highly valued by both consumers and gatekeepers.
3	Meike Rombach †	Kiwi Flavour meets Silver Favour? Understanding predictors of older German consumers' willingness to eat and pay a price premium for food produced in Aotearoa-New Zealand	On the background of the silver economy and the recently implemented Free Trade Agreement between the European Union and Aotearoa-New Zealand, the present study is dedicated to older German consumers, a consumer segment to which kiwi premium products are likely to appeal but has yet to be examined. This study employed an online consumer survey and explores key factors driving older German consumers' willingness to eat and pay a price premium for food produced in Aotearoa-New Zealand using descriptive statistics and partial least squares structural equation modelling. Results show the strongest predictors for both behaviours are Aotearoa-New Zealand's country image, food neophilia and extrinsic food attributes. Best practice recommendations for food exporters and marketers are provided.

Stream 3	Chair: Wei Yang	Technology & digital agriculture (Ward Room)	
1	Buhary, Rifana *†	Reducing Transaction Costs in Digital Agri-food Marketplaces: A Participant Observation Study of Farmer-Buyer Coordination in Sri Lanka	Digital farmer-to-business agri-food marketplaces are promoted as a means to enhance smallholder farmers' market access and support more effective sales of their harvests. However, many platforms struggle to sustain adoption because they are primarily designed as buyer-seller matching systems rather than governance mechanisms that reduce the transaction costs of market coordination. This study examines stakeholder pain points observed during the development of a digital farmer-to-business agri-food marketplace in Sri Lanka. The objective was to identify transaction costs embedded in farmer-buyer coordination and translate them into platform design requirements. The study used participant observation of stakeholder engagement activities coordinated by a digital technology platform provider with harvest buyers and smallholder farmers. Content analysis identified five pain point areas: sourcing reliability and harvest visibility; quality differentiation and aggregation fairness; price, payment commitment and trust; data sharing and platform governance; and coordination support for digital aggregation. Interpreted through Transaction Cost Economics, these pain points reflect bounded rationality, uncertainty, risks of opportunism, asset specificity and transaction frequency. The findings show that buyers valued reliable sourcing and mechanisms that reduce the risk of opportunism. Farmers were concerned about aggregation unless quality differences were recognised through fair pricing. The study concludes that digital farmer-to-business platforms are more likely to succeed when they act as hybrid governance mechanisms that also support behavioural changes and encourage farmer active participation in knowledge-based advisory services. This study contributes to digital agriculture research by identifying the transaction costs that digital agri-food platforms must reduce to support sustained marketplace adoption.
2	Caili Liao *	Artificial Intelligence Use, Climate Smart Agricultural Practices and Rural Incomes — Empirical Evidence from China	In this study, we contribute to the burgeoning literature on the nexus between artificial intelligence (AI) use and climate-smart agricultural (CSA) practices by examining the effect of AI use on the adoption of CSA practices. Unlike previous studies that use a dummy variable to capture agricultural technology adoption, this study focuses on a set of ten CSA practices adopted by farm households in Anhui, Hunan and Guangxi provinces in China. Using farm household survey data from 1,142 farm households, we employ an endogenous-treatment Poisson regression model and an unconditional quantile regression model. The empirical results show that AI use has a significant positive effect on the number of CSA practices adopted. Further analysis indicates that the associations of AI use and CSA practice adoption with farm income and household income are heterogeneous. Specifically, both AI use and CSA practice adoption are positively associated with farm income and household income, and these positive associations are more pronounced at the upper income quantiles. These findings suggest that AI applications can improve farmers' access to agricultural information and support production decision-making. Overall, AI use can serve as a practical digital tool for promoting CSA practices and improving rural household economic welfare.

3	Hepei Zhang †	Promoting the Adoption of Green Technologies by Resource-Constrained Farmers: The Role of Agricultural Cooperative Services Promoting the adoption of green agricultural technologies is important for an inclusive transformation of agri-food systems. Resource-constrained farmers, especially those with small farmland holdings or low income, face stronger barriers in this transition. Cooperatives serve as a key link between farmers and technology, information, and markets. Their role in supporting green technology adoption among resource-constrained farmers therefore deserves further attention. Based on survey data from 1,009 farmers in Jiangxi Province, this study uses a two-stage least squares method to identify the effects of cooperative services on green technology adoption among land-constrained and income-constrained farmers. The analysis further distinguishes between production-oriented services and market-oriented services. The findings are as follows. First, the number of cooperative services accessed significantly promotes farmers’ adoption of green technologies. This result remains consistent after distinguishing between production-oriented and market-oriented services. Second, among land-constrained farmers, access to cooperative services, production-oriented services, and market-oriented services all significantly promote green technology adoption. Third, among income-constrained farmers, neither overall access to cooperative services nor the two types of services has a significant effect. However, among income-unconstrained farmers, access to cooperative services and production-oriented services significantly promote green technology adoption. Overall, cooperative services help promote green technology adoption, especially for land-constrained and income-unconstrained farmers, but they have no significant effect on income-constrained farmers. The findings suggest that cooperative resources should be better targeted toward land-constrained farmers, while also strengthening the positive influence on income-unconstrained farmers.
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Friday 28 August 14:40-15:40		Contributed Papers Session 4	
Stream 1	Chair: Nicola McDonald	Climate stress & adaptation (Avon Room A)	
1	Sazia Ahmed *	Effects of Climate Stress on the Livestock Industry in New Zealand: An Econometric Analysis	The livestock industry constitutes the backbone of New Zealand’s agricultural economy. However, it is significantly vulnerable to climate variation, especially drought. Though prior literatures have focused on the direct effect of weather variation on the agricultural sector, this study fills the gap by identifying the spatial spillover effect of climate stress on livestock production, considering regions and farming systems. This study aims to explore the effect of drought on sheep and beef meat production, and milk solid output in New Zealand, specifically accounting for the spatial spillover effect. Authors have utilized the New Zealand Drought Index (NZDI) as a comprehensive measure of drought severity. In addition, the panel datasets of livestock production from 2017 to 2025 and dairy farm level data from 2009 to 2024 have been accumulated from Beef + Lamb New Zealand and Dairy New Zealand, respectively. The research employed a range of econometric methods, including pooled, random, and fixed effect models, an interaction model, and spatial econometric models (SAR and SDM – direct, indirect, and total effect of drought) with fixed effects. The result indicates that drought significantly decreases both the meat production and milk solids yield, with effects intensifying as drought severity increases. Spatial econometric models’ findings reveal that drought adversely affects sheep and beef meat and dairy production, both directly and indirectly, and through considerable negative spillovers between regions, demonstrating robust interregional transmission of climate change. Overall, this research provides new empirical evidence on the spatial dynamics of climate risk in an export-oriented livestock economy.

2	Zhao Li *	Does Off-farm Work Participation Incite the Adoption of Climate-smart Agricultural Practices: Evidence from Indian Potato Farmers	In an era of climate change, promoting climate-smart agricultural (CSA) practices is important for enhancing agricultural resilience and securing food supply. However, the role of off-farm work participation in CSA practice adoption remains ambiguous. Although off-farm work may provide additional income, it may also, due to the lost labor effect, reduce agricultural labor input, weaken farm investment incentives, and limit farmers's exposure to agricultural technology information. Therefore, this study examines the effect of household heads's participation in off-farm work on the adoption of CSA practices among potato farmers in India. We use a count variable based on four typical CSA practices, including crop diversification, organic fertilizer application, improved potato varieties, and crop rotation. Empirical results from the endogenous treatment Poisson regression model show that the household head's off-farm work participation significantly reduces the number of CSA practices adopted. Disaggregated analysis indicates that this negative effect is more evident among farmers in the Agra region and among households cultivating small farms. Moreover, empirical analysis of specific CSA practices suggests that participation in off-farm work significantly reduces the adoption of crop diversification and improved potato varieties. Overall, our study reveals a potential trade-off between off-farm livelihood diversification and the adoption of CSA practices. Accordingly, rural off-farm employment policies should be coordinated with agricultural extension, labor-saving services, and incentives for sustainable farm management. Keywords: Off-farm work participation; Climate-smart agricultural practice; Potato; India
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3	Nicola McDonald	Rising Sea Levels and Impacts on Coastal Lowland Agriculture in New Zealand	Our study assessed the economic impacts of sea level rise (SLR) on New Zealand's coastal lowland agriculture through a new Natural Capital and Inundation Module (NCIM) developed for integration with the MERIT model. The NCIM simulates farm level responses to SLR over 50 years, incorporating permanent and episodic inundation impacts on farm production, risks to critical farm capital, rising drainage and defence costs, and landowner adaptation decisions including land use change or de intensification. A national scale case study was undertaken using synthetic farm datasets, geospatial inundation modelling, and representative financial accounts for dairy, sheep and beef, and low capital cut and carry systems. Increased surface flooding under extreme rainfall events are climate-related risks not considered in the study. Results show that national level economic losses are modest across SLR scenarios, with annual EBITDA reductions of approximately \$11.7 million (RCP 4.5) to \$19.5 million (RCP 8.5) by 2080. Impacts are unevenly distributed: dairy farms experience losses around four times greater than sheep and beef farms, and the Waikato region accounts for roughly 28% of total impacts. Only about 3% of farms undergo land use change, largely because most at risk farmland lies within existing drainage and defence schemes. Assuming these schemes are maintained and upgraded, widespread de intensification or abandonment is unlikely. Economy wide modelling indicates moderate but diffuse flow on effects, with processing industries and service sectors experiencing the largest flow-on impacts. To explore additional climate related risks closely related to rising sea levels, the study also considers the potential for saltwater intrusion and soil/ water supply salinisation. Exploratory scenarios suggest that even small areas of affected land could substantially amplify economic impacts, underscoring the need for future research on salinity risks to lowland agriculture.
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Stream 2	Chair: Albert Boaitey	Carbon markets & decarbonisation (Mainland Room)	
1	Sana Bashir *	Assessing the decarbonization initiative's impact on agricultural productivity in Australia	Amid growing global urgency to achieve net zero greenhouse gas emissions, understanding whether decarbonization initiatives are associated with agricultural productivity has become an important policy question. In Australia, this challenge is particularly evident because agriculture is projected to account for an increasing share of national emissions. In line with its net-zero commitment, Australia has introduced several decarbonization initiatives. However, despite policy relevance, the productivity implications of these initiatives for agriculture have not yet been systematically examined. This study investigates the relationship between key decarbonization initiatives, such as carbon offset policy, and an Industry Innovation Index. Climate variability and agriculture: Total Factor Productivity (TFP) in Australia from 1990 to 2023. A novel Industry Innovation Index has been developed using principal component analysis (PCA), and both short-run and long-run relationships have been estimated using an autoregressive distributed lag model. The findings disclose that the Industry Innovation Index is positively associated with agricultural TFP in the long run. The carbon offset policy is associated with a negative short-term adjustment effect but a positive long-run coefficient. Drought is negatively associated with TFP, whereas precipitation and temperature show weaker, less consistent relationships. The error correction term is negative and significant, supporting a long-run relationship among the variables. These findings highlight the importance of long-term investment in innovation and climate risk management in agricultural policy.

Economic and emission implications of prioritising mature ewe weaning rates over hogget breeding in sheep farming systems.

Improving reproductive performance in sheep enterprises is a key driver of profitability, yet the economic and system-level trade-offs between increasing mature ewe weaning rates (WR) versus breeding hoggets remain uncertain. This study evaluates the trade-offs associated with the implications of varying mature ewe and hogget WR on enterprise profitability, productivity, and economic emission efficiency.

A bioeconomic system dynamics model was applied for a representative North Island Hill Country class four sheep and beef farm in New Zealand. The farm system model incorporated a fixed feed supply that accounted for the effect of land slope on pasture production. To ensure flock stability, the model dynamically adjusted ewe flock numbers based on the WR. Nine scenarios were simulated, combining mature ewe WR of 125%, 140%, and 165% with hogget WR of 0%, 60%, and 80%.

The simulation results demonstrate that, under a fixed feed system, increasing the WR of mature ewes reduced the total ewe flock size, leading to a marginal decrease in total farm expenses. Simultaneously, higher WR increased the total number of lambs weaned, driving up enterprise income and overall cash operating surplus (COS) per hectare. Because total farm enteric methane emissions remained stable due to the fixed feed supply and adjusted flock sizes, the economic emission efficiency increased significantly alongside profitability.

From a farm management perspective, achieving a high mature ewe WR of 165% without breeding hoggets proved to be a more economically efficient use of resources, yielding a higher COS/ha of \$NZ262/ha compared to the \$NZ243/ha achieved by combining an industry-average 140% mature ewe WR with a 60% hogget WR. Given the added management complexity and poorer reproductive performance of breeding hoggets, the findings suggest that farmers should prioritize optimizing mature ewe WR to maximize profitability and economic emission efficiency before considering hogget breeding.

3	Albert Boaitey Vintage Dynamics and Retirement Behaviour in Voluntary Carbon Offset Markets Voluntary carbon markets have expanded rapidly, yet little is known about how the age of carbon credits influences retirement behaviour and market demand. Understanding whether buyers favour newer or older credits is important for assessing market efficiency, price formation, and incentives for future projects. This paper examines the relationship between credit vintage and retirement dynamics using a dataset comprising 253,985 project‐vintage‐year observations across 5,825 projects from major registries, including Verra (VCS), CAR, and ACR. The analysis combines descriptive market analysis, retirement hazard modelling, project fixed-effects regressions, and cohort-based event studies to investigate retirement behaviour over the lifecycle of carbon credits. We first document issuance and retirement patterns across registries and vintages, revealing heterogeneity in retirement activity across cohorts and market segments. We then estimate retirement hazards to examine how the probability of retirement changes as credits age and whether stocks follow predictable depletion pathways. Project fixed-effects models isolate vintage effects from differences in project characteristics, while cohort and event studies trace retirement trajectories across successive vintage groups to identify shifts in buyer preferences over time. Together, these approaches provide evidence on the temporal allocation of demand and the extent to which market participants value recent emissions reductions relative to older credits. By identifying how retirement varies across vintages, registries, and cohorts, the study contributes to understanding market liquidity, credit utilisation, and economic signals. The findings have implications for developers, registry operators, corporate buyers, and policymakers seeking to enhance the transparency, credibility, and long-term effectiveness of voluntary carbon markets.
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Stream 3	Chair: Waranan Tantiwat	Environment, energy & resource policy (Ward Room)	
1	Sidra Ishfaq	Sustainable development pathways: through sustainable resource management and ESG practices in BRI countries	The most important and pressing challenge in addressing climate change is sustainable resource management through the efficient use of natural resources. Sustainable resource management (SRM) is essential to achieving the SDGs. In the Belt and Road Initiative (BRI) region, rapid economic growth and increased natural resource use have heightened environmental challenges, underscoring the role of technological innovation, economic factors, and ESG factors in advancing SRM. The objective of this study is to investigate the effects of technological innovation, along with economic, environmental, social, and governance (EESG) factors, on the SRM of BRI countries. At the first stage, the weighted TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) method is developed for the EESGT (economic, environmental, social, governance, and technology) component of the sustainability performance of BRI countries. At the second stage, advanced econometric techniques are applied, including the CSD test, the slope homogeneity test, and the second-generation unit root test. After the preliminary tests, we apply a method-of-moments quantile regression (MMQR) to estimate the analysis using balanced panel data from BRI countries. The results indicate that green growth and governance factors, together with technological innovation, positively and significantly influence SRM. The results further reveal that environmental, social, and industrialization negatively and significantly affect SRM. Our findings imply that technological innovation supports SRM by promoting efficient technologies and guiding green growth for achieving the SDGs. Keywords: SRM: Sustainable Resource Management; SDGs; MMQR; TOPSIS; EESGT; BRI
2	Yating Deng *†	Local and spillover effects of renewable energy investments on labor markets in Australia	This paper analyzes how utility-scale renewable energy projects affect regional and local employment and unemployment outcomes in Australia. We combine geocoded data on wind and solar project installations with labor market estimates and examine effects using the local projections difference-in-differences (LPDID) estimator. While we find no statistically significant effects on the unemployment rate at the Statistical Area Level 4, significant effects are obtained at the finer-grained Statistical Area Level 2. Specifically, renewable project commissioning is associated with a reduction in the local unemployment rate of 0.36 percentage points on average. The decline in the local unemployment rate begins shortly before commissioning and persists for several years. Effects extend to neighboring areas. The findings also indicate that wind projects generate statistically insignificant local unemployment response but benefit neighboring areas. Solar projects reduce the local unemployment rate in both the host and neighboring areas. We find no robust evidence of corresponding increases in median worker income.

3	Waranan Tantiwat †	Environmental Priorities among Immigrants and Native-Born Residents in New Zealand: Evidence from the World Values Survey	This study examines whether immigrants and native-born residents in New Zealand differ in their environmental priorities. Using World Values Survey Wave 7 data, the study analyses whether respondents prioritise environmental protection over economic growth, even if this may involve slower economic growth or some loss of jobs. A final sample of 630 respondents is analysed using binary logit models with heteroskedasticity-consistent type 3 (HC3) robust standard errors. The results show that environmental protection is strongly supported by both groups. Overall, 71.1% of respondents prioritise environmental protection over economic growth. The share is 71.2% among native-born respondents and 67.1% among immigrants. This difference is small and statistically non-significant. Regression results also show that immigrant status alone is not a statistically significant predictor of environmental priority. Instead, environmental priority is more strongly associated with education, age, environmental organisation membership, and confidence in environmental organisations. Higher education and environmental organisation membership are positively associated with environmental priority, while age and lower confidence in environmental organisations are negatively associated with environmental priority. The exploratory interaction model shows that the immigrant effect varies by education level, suggesting that immigrants should not be treated as a homogeneous group. Overall, the findings challenge the assumption that immigrants care less about the environment. Environmental concern appears to be broadly shared across immigrant and native-born residents in New Zealand, although important differences emerge across education levels.
Stream 4	Chair: Frank Scrimgeour	Rural livelihoods, growth & sector performance (Avon Room B)	
1	Wenguang Zhang †	Impacts of Crop Diversification on Subjective Well-being: Evidence from Rural Sri Lanka	This paper uses data from a 2025 survey of 736 rural households in Sri Lanka's tea-growing areas in the highlands, central, and lowlands (classified by elevation). To examine the impact of crop diversification on the subjective well-being of rural households in Sri Lanka. We use a Conditional Mixed Process (CMP) model to analyze these effects. We focus on two key indicators: well-being and life satisfaction. We find that crop diversification is significantly and positively associated with both well-being and life satisfaction. The impact varies across farm sizes, with large farms benefiting most from diversification in terms of well-being. Mechanism analysis suggests that these improvements are partly mediated by better self-reported health among households that are diversified. These findings highlight crop diversification as a promising strategy for improving rural well-being in Sri Lanka. At the policy level, promoting diversification through targeted extension services, financial incentives, and improved market access can not only enhance household resilience and income but also improve the quality of life in agricultural communities.

2	Sooriyakumar Krishnapillai †	Impact of Agricultural Value Added on Economic Growth in Sri Lanka	This study examines the effect of agricultural value added on economic growth in Sri Lanka. For this study, annual data were taken from the World Bank's Data Bank for the period from 1992 to 2021. An ARDL approach was adopted in this paper. The results of this study show that there is a long and short-run association among the variables. In the long run, a rise of 1 % in agricultural value added, gross capital formation and trade openness could increase gross domestic product per capita by 0.75%, 0.33% and 0.65% respectively. This study concludes that agricultural value added, trade openness and capital formation play an important role in the economic growth of the country and open economic policy promotes economic growth by supporting the exports of agricultural commodities and the imports of essential capital goods and energy sources. The results of the study would be useful to policymakers to develop an appropriate economic policy.
3	Frank Scrimgeour	The New Zealand Dairy Industry 2001 to 2025	This paper reflects on the evolution and performance of the NZ dairy industry during the first quarter of the 21st Century. It characterizes industry change in terms of structure and scale. It considers key drivers of the evolution including prior history, economic forces, markets conditions, international trade policy, political structure and arguments and investment capacity. The paper reports industry success claims and critiques of the same based on environmental degradation, and trade exposure risks associated with geopolitical tensions. The analysis presents measures of value addition, export contribution and return on assets. It concludes with reflections on industry strategy and policy for the next 25 years.

Notes: * = first
time
presenter; † =
best paper

Thursday 27
August and
Friday 28
August
12:00 - 13:00

Poster (Ward Room)

1	Sazia Ahmed	Weather and Kiwifruit Production in NZ from 2001 to 2023	This study identifies the effects of weather on kiwifruit production in the Bay of Plenty region in New Zealand. Kiwifruit is New Zealand’s largest horticultural industry with over 80% of the crop produced in the Bay of Plenty. However, yields have fluctuated greatly over the last decade, adversely affecting growers and the economy. The authors have used panel data analysis to examine the relationship between dependent variables, green and gold varieties of kiwifruit yield (trays per hectare), and explanatory variables, including days with temperatures above 25°C, temperatures below 0°C, wet days, total growing degree days above 5°C, total growing degree days above 10°C, and winter chill hours. The analysis included fixed effect and random effect models and use of the Hausman test to determine the nature of weather impacts on kiwifruit yields. The findings indicate that the yields of gold kiwifruit consistently surpass those of green kiwifruit, apart from the years affected by PSA Virus. Furthermore, there exists a significant inverse association between rainy days, frost days, winter chill hours, and green kiwifruit yields, respectively. Additionally, frost days further exert a substantial negative influence on gold kiwifruit. However, days with high temperatures have a markedly beneficial impact on the production of green and gold kiwifruit in the Bay of Plenty. The results highlight the importance of effectively utilising weather data in operational decisions and in strategic choices to address the local effects of global climate change. The paper concludes with recommendations for future research.
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2	Katherine Trought	Learning from National and Local Food System Strategies: Insights for Aotearoa New Zealand	Aotearoa New Zealand is a major global food producer, yet it lacks a coordinated national food strategy that integrates economic, environmental, health and social objectives. At the same time, the country faces increasing pressures associated with climate change, environmental degradation, food insecurity, and inequitable access to healthy food. Internationally, many countries are adopting integrated food systems approaches that coordinate policy across agriculture, health, trade, environment and wellbeing domains. This PhD research examines how food system stakeholders prioritise and make trade-offs between competing food system outcomes. The initial phase focuses on governance frameworks that support resilient, equitable and sustainable food systems, drawing on analysis of international food system strategies and governance models at national, regional and Indigenous-led levels. Across these cases, common characteristics associated with effective governance include integrated policy objectives, cross-sector coordination, meaningful stakeholder engagement, and mechanisms for managing competing priorities. By situating these international learnings within the Aotearoa New Zealand context, this research contributes to a broader investigation of how stakeholders prioritise outcomes and navigate trade-offs in practice. Linking global experience with stakeholder values and decision-making processes addresses a key gap in New Zealand food systems governance, where aspirations have been widely articulated but trade-offs are less well understood. The findings aim to support more transparent and evidence-informed food systems policy and governance in Aotearoa New Zealand.
3	Tien Tran	Understanding Subjective Well-Being in Rural Vietnam: The Roles of Socio-Economic Security, Social Cohesion, and Social Empowerment	After nearly four decades of Doi Moi (Renovation) reforms, Vietnam has transformed from one of the world's 20 poorest nations into one of the 32 largest economies globally. Alongside rapid economic growth, the country has experienced profound social transformation characterized by urbanization, market expansion, and deeper global integration. These developments might be expected to improve people's overall life satisfaction through rising incomes and improved living standards. However, rapid socio-economic transformation may also reshape social norms, values, and perceptions of social relations, potentially influencing subjective well-being in more complex ways. This study examines the relationship between the social quality factor and individuals' subjective well-being in rural Vietnam, using Wave 7 data from the World Values Survey. It focuses on the roles of socio-economic security, social cohesion, and social empowerment in shaping subjective well-being. The results show that socio-economic security and empowerment have a positive and statistically significant impact on life satisfaction. Moreover, social cohesion is negatively associated with life satisfaction. This research suggests that the Vietnamese government should prioritize strengthening socio-economic security and social empowerment by improving access to stable income opportunities, education, and healthcare, and by enhancing individual autonomy through greater participation in community activities and local decision-making processes. Simultaneously, changes in social relationships and community ties in the rural area should be closely monitored to enhance people's life satisfaction.

4	Adebayo Arepo Princewill	Effect of Population Growth on Air Pollution Via Affluence in Nigeria	ABSTRACT The study investigates the effect of population growth on air pollution via affluence in Nigeria from 1991 to 2024. The study uses carbon dioxide emissions as the dependent variable to proxy air pollution. Population Growth, affluence and their interaction are used as explanatory variables. Descriptive statistics, unit root test, and Toda-Yamamoto modeling techniques are adopted for the analysis. The findings reveal that population growth and affluence have no casual effect on air pollution in Nigeria. The interaction between population growth and affluence does not cause air pollution in Nigeria. The study concludes that affluence, population growth, and their interaction have not significantly contributed to air pollution in Nigeria during the study period. Since population growth, affluence, and their interaction do not significantly drive air pollution in Nigeria, policy efforts should focus on the actual structural sources of emissions. For example the government ought to focus more on tighter control and supervision of industrial operations, especially in the oil and gas industry, by enacting restrictions on gas flaring, advancing the use of cleaner technologies for oil and gas extraction, and enhancing institutions of environmental compliance. Keywords: Population Growth, Affluence, air pollution, GDP per capita, and carbon dioxide emissions.
5	Maksym Polyakov	Parks, floodplains and property prices in Auckland: Are green space premiums confounded by flood exposure?	Hedonic studies often find that proximity to parks and other green space is capitalised into residential property prices, and that location in a floodplain is discounted. These two effects are typically estimated as if they were independent. In many cities, however, public open space and stormwater management infrastructure are concentrated on low-lying, flood-prone land. We investigate the overlap between the effects of public open space and mapped flood hazards in Auckland, using property sales, floodplain, and open space data. We test whether the green space premium and the flood discount change when they are estimated together rather than separately. The results have implications for the interpretation of hedonic amenity and flood-risk estimates, and for the valuation of green space that also serves as a flood-mitigation measure.

6	Ying Liu	Navigating Climate Change: How Chinese Migrants Choose Adaptation Strategies Across Occupations and Destinations	Abstract Climate change disproportionately affects marginal labor returns across sectors. In China, rural migrant workers one of the most vulnerable groups have increasingly shifted from agricultural to non-agricultural work as a key climate adaptation strategy. However, the effectiveness of this strategy depends critically on two understudied factors: the climate exposure of occupational workplaces and the climate characteristics of potential migration destinations. To address this gap, we develop an analytical framework based on the Household Model that captures migrants’ joint decisions regarding occupational mobility and regional migration under climate change. We evaluate the effectiveness of different adaptation strategies from the perspective of maximizing income and health utility. Empirically, we combine meteorological data from the China National Meteorological Center with panel data from the China Labor-force Dynamics Survey (CLDS, 2012–2018), covering 23,594 labor samples across 401 rural communities. Our analysis reveals the micro-level decision-making logic behind migrants’ climate adaptation behaviors, clarifies how they allocate their adaptation efforts across occupational and urban dimensions, and compares the realized effects of alternative strategies. These findings offer micro-level insights to support government formulation and promotion of effective climate adaptation policies. Keywords: Climate adaptation, Migrant workers, Occupational mobility, Regional migration
7	Lin Lin	Corporate Profitability and Rising Prices in the Food Industry	This study explores how corporate profitability across U.S. agri-food supply chain segments responded to major economic shocks. U.S. retail food prices have surged rapidly to historic highs following COVID-19 and the Russia-Ukraine conflict, raising concerns about profit-driven inflation, although the evidence remains mixed. Because higher food prices can reduce affordability, identifying the key drivers of inflation is essential for designing effective policies. Using firm-level panel data of publicly listed companies from 2015 to 2024, we find heterogeneity in profitability across segments. We also find limited evidence of profit-driven food price inflation in the post-shock periods; overall, gross profits increased, but margins remained stable. Combined with analysis of corporate filings, the results suggest that rising costs and fiscal policies, rather than inflated markups, may be more important drivers of accelerating retail food prices.

8	Jianqiang (Jason) Zhao	Do Higher Food Prices Reduce Retail Food Donations? Evidence from Food Pantry Supply Chains	Food banks and food pantries play an increasingly important role in household food security, yet relatively little is known about how local market conditions affect the supply of donated food. This paper examines whether higher retail food prices reduce food donations from grocery retailers to local food pantries. We combine transaction-level donation records from a large food bank network serving 21 counties in the Southwestern United States with monthly food price measures from the USDA ERS Food-at-Home Monthly Area Prices database from January 2016 through September 2017. The donation data record the timing, source, recipient pantry, product category, and donated pounds of retail food donations across major fresh and grocery categories. We estimate log-linear fixed-effects models at the food-category-by-month level. The results show a robust negative relationship between retail food prices and donation quantities: a 1% increase in the price of a food category is associated with approximately a 3.1% decline in donated pounds in that category. This pattern is consistent with a supply-side mechanism in which higher food prices increase retailers' incentives to shift near-expiry inventory toward markdown sales rather than charitable donation. Robustness checks using alternative price measures, stable donor samples, leave-one-chain-out specifications, and chain-level models support the main finding. These results suggest that food prices may affect food security through more than household purchasing power alone. During periods of high food prices, food-insecure households may face both higher grocery costs and reduced availability of donated foods through local pantry networks. The findings highlight the importance of understanding the supply side of charitable food assistance and the role of retail incentives in shaping food access.
9	Mubeen Rehman	How does the value of investing in Australian water entitlements compare to other investments over time?	Water markets are widely recognised for enhancing the efficient use and redistribution of water, with the southern Murray-Darling Basin (MDB) in Australia considered the most advanced water market worldwide. This study applies a Dynamic Conditional Correlation Generalised Autoregressive Conditional Heteroskedasticity (DCC-GARCH) model to provide a long-run assessment of the MDB water entitlements as financial assets, evaluating their value, hedging capacity, and safe-haven potential relative to national investment portfolios. We use monthly data (from 1993-2025) from one of the longest operating irrigation water areas in the MDB, the Goulburn Murray Irrigation District. Investing in permanent water entitlements over this time period exhibits strong returns of around 20%, surpassing, on average, the Australian stock market (4-5%) and real estate investment options (6-8%), although these returns fluctuate in line with various cycles. The results suggest that water entitlements provide safe-haven benefits to owners during financial market turmoil, particularly in the stock market. Findings confirm other literature that the Australian water market is becoming more liquid, adopted and heterogeneous.

10	Bryan Le	Demand for Hyper-transparency: Exploring Consumers' Attitudes towards the Validation of Credence Attributes along the Food Supply Chain	The agri-food industry is facing the challenge of maintaining and increasing productivity whilst reducing its impact on the use of natural resources, the environment and animal welfare. Concerns around these impacts have led consumers to seek products that have certain attributes, for example produced with higher environmental or welfare standards. However, information asymmetry causes a lack of transparency in how food products are made and may lead to a crisis in confidence of buyers when seeking products with these attributes. As new technologies and systems have emerged, the idea of going beyond traditional ideas of transparency in the food chain and adopting a hyper-transparency platform has been suggested as a way to provide consumers with the means of validating food credence attributes (CAs). However, there are gaps in our understanding of the potential demand for hyper-transparency platforms by consumers. For example, the existing literature lacks a comprehensive understanding of consumers' attitudes towards and willingness to pay for food products with CAs from a whole supply chain perspective (which could influence their demand for information). The literature that does exist focuses on supply chain management from the firm side whilst ignoring the market. In addition, there is little literature on the willingness of consumers to engage with hyper-transparency platforms and in what form they would wish to acquire information. To address these gaps, this study explores and compares consumers' attitudes in Vietnam and New Zealand towards five different food CAs (Environmentally Friendly, Animal Welfare, Food Safety, Nutrition and Health, and Fair Trade) of livestock products (meat and dairy) through hyper-transparency at various stages (Farmers, Food Manufacturers, and Retailers) of the supply chain. Two research questions are addressed: RQ1 - Does demand for information vary across consumers in New Zealand and Vietnam?; RQ2 - What different forms of information do consumers demand via hyper-transparency and through what media?; Using descriptive statistics, bivariate analysis, and Partial Least Squares - Structural Equation Modelling (PLS-SEM), data collected from a survey with the sample of 515 responses (412 from Vietnam and 103 from New Zealand) were analysed to address RQ1, RQ3. The results show that consumers who have a lack of confidence in food labels are more motivated to adopt a hyper-transparency platform in both markets. Consumers in both markets are more interested in Food Safety, Nutrition and Health, and Environmentally Friendly than the other CAs, highlighting the importance of these attributes regardless of markets. Consumers in Vietnam are more likely to value food CAs than those in New Zealand, suggesting that demand for food information varies across consumers between developed and developing countries. The results show that consumers' preferred media for attaining information are different among food CAs and different between two markets. The results suggest that hyper-transparency platforms could positively affect consumers' purchasing decision making in both New Zealand and Vietnam. The research findings provide both academic and practical implications. This study contributes to the ongoing effort to minimise the issues of information asymmetry in literature and practice. Importantly, this study proposes a practical framework that consists of three development phases to adopt a hyper-transparency platform based on suppliers' resource conditions. This framework helps suppliers tackle their barriers while meeting higher demand for food information from consumers. Given the limited resources, it is recommended to provide information concerning Food Safety and Nutrition and Health at the food manufacturing stage in both markets. In the most prioritised order, the recommended media forms for New Zealand are Images, Videos, Text records, and Real-time reports; and for Vietnam are Live stream, 3D, Text records, and Videos.
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11	Tsegaye Gatiso	Beyond Nature: Economic Contribution of Public Conservation Land in Aotearoa New Zealand	Biodiversity is declining globally at unprecedented rates, and public conservation lands (PCLs) remain one of the most widely adopted strategies to counteract this trend. Growing international evidence shows that, beyond ecological protection, PCLs generate substantial socioeconomic benefits for surrounding communities. In Aotearoa New Zealand (A-NZ), the evidence on the economic benefits of PCLs has been fragmented and has not been comprehensively assessed on the national scale. Our study fills this gap by analysing longitudinal business data across the country from 2015–2022 to quantify the local economic impacts of PCLs. We used a combination of matching techniques and mixed effects linear regression models. Our results revealed that meshblocks (smallest geographic unit for which statistical data is reported by Statistics NZ) located within 2 km of PCLs have 4.4% higher business revenue and GST compared to meshblocks located farther away from PCLs. Furthermore, a 1% increase in the Department of Conservation (DOC) operations district budget is associated with increases of 0.02% in average business revenue and GST, 0.11% in employment, and 0.07% in the number of firms per meshblock. This suggests that considering the average sales revenue and GST for meshblocks within 2 km of PCLs (i.e. ~63%), each additional dollar (NZD) in the DOC budget at the operational district level is associated with an average increase of NZD 3.5 in annual business sales and NZD 0.44 increase in GST per DOC operations district. These results underscore that investment in conservation not only secures ecological integrity but also reinforces economic growth.
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