

Summary of the 31st International Conference of Agricultural Economists (ICAE 31) 17-31 August 2021

Uma Lele¹ and Associates, International Association of Agricultural Economists²

ICAE 31 was held over a two week period in August 2021. The conference theme was “Agriculture under the 4th Industrial Revolution” inspired by Klaus Schwab, Founder and Executive Chairman, World Economic Forum:

“We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before. We do not yet know just how it will unfold, but one thing is clear: the response to it must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academia and civil society.” January 14, 2016.

COVID 19, a once in 100 year pandemic, required ICAE 31 to be the first ever completely online conference in the 90+ year history of the International Association of Agricultural Economists (IAAE), founded in 1929 by Professor Leonard K. Elmhirst of Devon, England. Typically, the triennial conferences have been held in person as a one week affair including a couple of pre-conferences. They have been hosted by different countries, ranging from the U.S., Australia, India, Germany, South Africa, Indonesia, Italy and Canada. ICAE 31 was scheduled to be held in New Delhi India. The 15-day, all-virtual conference accommodated multiple time zones in which the IAAE’s 900+ members reside. It included 8 Plenaries, 26 Invited Sessions, 36 Organized Symposia and 524 contributed papers with a total of 751 speakers, ranging from seasoned economists, a Nobel laureate, a few former and current ministers of trade and planning to young post-doctoral participants. They came from 65 countries. Residents of the US, Germany, India, China, Kenya, and Nigeria represented 60 percent of the participants, consistent with the past pattern (see below). The conference also included an award ceremony for winners of the T.W. Schultz Award, (Best research paper by an author below 40 years of age), the Uma Lele Award (Best Paper on Gender) and the Eicher Award for the best PhD thesis on Africa. It also included the celebration of 10 new Honorary Life Memberships awarded this year (HLMs).

This is also the first time that as many as 38 percent of the speakers were women. They contributed papers on the whole array of topics addressed by agricultural economists, also including the role of women in the agricultural economics profession in developing countries, fostered by the newly established International Committee on Women in Agricultural Economics (ICWAE). Participants generally gave [high marks to the conference](#). The conference program can be found [here](#).

¹ President, International Association of Agricultural Economists.

² Associates include Kym Anderson, Soumya Balasubramanya, Leslie Lipper, Will Martin, Jyotsna Puri, Prabhu Pingali and Nick Vink

The Presidential Address by Nick Vink in the opening plenary was based on a review of 1226 journal articles and conference papers on the economics of agricultural development in Africa covering 2016-2020. Nick noted that while the number of co-authored papers had increased, women authors still constitute just 20 percent of the total number of authors, and even fewer in lead authorship roles. The CGIAR and other multilateral institutions contributed about a fifth of the literature, with similar shares by US and German universities as the “home” to African students—patterns that were replicated amongst the papers delivered at ICAE 31. A large proportion of this literature is not forward-looking and is weak on policy relevance. Much food for thought for the agricultural economics profession.

Kym Anderson, distinguished professor of trade and development at the University of Adelaide and the Australian National University delivered the 16th Elmhirst lecture, on Agricultural Trade in a More Uncertain Global Trade Environment. Trade has been a major stabilizer of food supply, contributing to food security, but the distributional outcomes of the latest globalization wave and digital revolution are faster, less predictable, and less equal than in previous waves and have led to anti-globalization populism. Global policy uncertainty has increased steadily since the global financial crisis, with the share of global goods trade facing policy instruments that reduce imports steadily rising while some emerging countries have shifted from taxing to supporting agriculture. With multilateral trade negotiations stalled since 2008, along with global environmental and health concerns (climate change, biodiversity loss, COVID-19), a return to multilateral cooperation is urgently needed.

The **next Plenary** echoed many of these observations and went further. It brought together four top-flight speakers with complementary perspectives on the role of trade in agricultural development under the chairmanship of William Martin. The first speaker, Anabel Gonzalez, Deputy Director-General of the WTO and former Trade Minister of Costa Rica, focused on the importance of the WTO negotiations on agricultural trade and particularly the draft negotiating text designed to make progress towards the 12th Ministerial Conference to be held later this year. Her focus was on the need to improve transparency and on the framework for substantive negotiations to be held after the Ministerial. Mari Elka Pangestu, Managing Director of the World Bank and former Trade Minister of Indonesia, focused her remarks on the vital importance of agricultural trade in achieving food security in a world undergoing climate change, noting the need for reform at country and global level. IFPRI’s Director-General Jo Swinnen focused his remarks on the role of Food Systems in achieving outcomes that are sustainable, inclusive, resilient, and healthy, as well as economically efficient, and drew on research examining responses to COVID-19 shocks and the need for reform to deal with climate change. The final speaker, Professor John Beghin of University of Nebraska, focused on the key role of food trade in responding to the COVID-19 pandemic, trade policy adjustments during the crisis, and outcomes for food security both nationally and globally.

The **third Plenary**, on the Impact of COVID-19 in Agri-Food Systems generally and in different regions. Maximo Torero of FAO , chair’s session, noted Covid-19’s far reaching adverse impacts:

increase in childhood stunting and wasting, in maternal mortality, and obesity, poverty and food insecurity. South Asia and Sub-Saharan Africa have been the worst hit. Social protection prevented poverty from increasing further. Funding gap estimates to connect the unconnected ranges from US\$125 billion to a maximum of \$2100 billion to achieve three central goals of agri-food system transformation: achieving food security and nutrition, eradicating poverty and strengthening livelihoods, and ensuring the sustainable management of natural resources. Policies needed to address structural constraints faced by poor agricultural households include:

- Increasing productivity of the poor by increasing their access to natural resources and other assets, resilience by improving capacity to cope with risk;
- Linking small-scale agriculture to markets and agri-food systems value chains;
- off-farm employment, fostering entrepreneurship and providing occupational skills;
- scaling-up targeting social protection systems rural infrastructure, especially in energy, transport, water and sanitation; and
- human capital, participatory rural institutions in particular access to basic social services such as health and education.

Dina Umali of the World Bank expounded One Health Approach to prevent pandemics, with multi-sectoral co-ordination, linking animal health to human health. Only Singapore among Asian countries has the capacity to address the challenge. Stephen Jaffee of University of Maryland advocated a smart food-systems approach but 73% of the cities surveyed are an early stage. In Africa, impacts of international trade, climate, financial crisis and health have been very commodity and country specific, and government intervention has often accentuated instability, stressing the need for investments in public goods.

The **fourth Plenary**, on Agriculture, Food Systems and Health, brought four top expert presenters and a discussant. Under Lawrence Haddad's chairmanship, Barry Popkin, of the University of North Carolina addressed issues of transition in food consumption. Thomas Reardon, Michigan State University, noted that African systems are currently characterized by both increased dietary diversification as well as a transition to the consumption of more junk food. Laurien Unnevehr of the University of Illinois, spoke of undermanagement of Food Safety Challenges in Rapidly Changing Food Systems, Prabhu Pingali of Cornell University, outlined the steps needed to redesign Food and Agricultural Policy for Better Nutrition and Health, and Venkatesh Mannar of the University of Toronto addressed issues of micro-nutrient deficiencies. Collectively they argued, urbanization, globalization, and trade liberalization are leading to rapid transformation of developing country food systems. Food environments are becoming more diverse and complex and access to nutritious food is a challenge for the poor. The persistent under-nutrition is increasingly coupled with rising rates of obesity and increase in non-communicable diseases. Inadequate food safety standards are adding to the global health burden as are the consequences of environmental degradation and climate change. Sustainable transformation of food systems requires policy convergence across agriculture,

nutrition, health, and environmental goals. Agricultural policy needs to go beyond its traditional focus on staple cereals to increasing the availability and affordability of nutritious foods. Taxes on sweetened beverages and ultra-processed foods, ought to be examined as an instrument for arresting and reversing obesity trends. Environmental policies that promote climate resilient food systems also provide incentives for increasing food system diversity and nutritional quality. Strategies for rapid identification and management of food safety risks ought to be an essential part of the convergence of agriculture, environment, and health policies. Finally, governments should endorse healthy diets through public messaging and behavior change campaigns and invest in infrastructure that ensures healthier food environments.

The **fifth Plenary** on “Climate Change: the evidence we need for Agricultural Development Policy making” led Leslie Lipper, the chair, to note that without immediate, rapid, and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5°C or even 2°C will be beyond our reach. Current levels of investment in combating climate change are well below estimates of the levels needed to bring down temperature rise. Reviewing evidence of multilateral development banks Jyotsna Puri, of IFAD’s Environment, Climate, Gender and Social Inclusion Division, concluded that there is little evidence of transformative change in the works of international organizations”. Fundamental Change in systems relevant to climate action with large scale positive impacts that shift and accelerate progress towards Climate neutral, inclusive resilient and sustainable development pathways. Evidence on impacts, scale, behavioral change, inclusion, and pathways is weak. Economists need to strengthen available evidence. Romina Catastasis, of IFAD Research, and Impact Assessment Unit noted, “adaptation contributes to build resilience and reduce risk yet given risk and vulnerability context ex-post coping strategies are of key importance”. Evidence of resilience to climate change is growing among poor households in diverse agro-ecological circumstances. But adaptation options are very context specific. More evidence is needed on various agro-ecologies and socio-economies accounting to understand resilience when climatic shocks occur and how adaptation options perform: why things work or do not work. Adoption of adaptation options is influenced by knowledge, awareness and by institutions that support behavioural changes. Meta analysis helps build systematic and usable evidence to support project monitoring and implementation. Machine learning using both satellite-based GIS data and ground-based survey data can help. More systematic use of weather data forecasts and alerts can also help drive and support farming decisions. Nancy McCarthy, President of Lead Analytics, emphasized the huge, missed opportunity in the work of a wide range of MDB’s, UN and other Agencies, to collect evidence on the “context”, i.e., role of institutions and the effect of climate change on the institutions themselves.

The **sixth Plenary** was on the Transformative Potential of Digital Technologies for Agriculture. Four experienced speakers made presentations. Professor Madhu Khanna of the University of Illinois on Digital Transformation for a Sustainable Agriculture: Opportunities and Challenges offered a large inventory of technologies and factors that explain their slow adoption. The emerging digital technologies, while promising, face various barriers to widespread adoption by

farmers, including the need for investment in new equipment, learning costs, access to broadband and trust in institutional mechanisms for sharing and storing data. These incentives and barriers for adoption vary widely in developed and less-developed countries and for large and small farmers. In his presentation on Facilitating Inclusive ICT Application and e-Commerce Development in Rural China, Jikun Huang of the China Center for Agricultural Policy stressed the regional and generational differences in the adoption of digital technologies in rural China and steps needed to alleviate them,. Michael Carter of the University of California, Davis, on the other hand outlined the importance of Flexible, Digital Financial Tools to achieve Secure Inclusive Agricultural Transformation. In his view, the real, empirical, challenge is to understand the dynamics of learning about the different financial instruments and the risks associated with them. Robust rural (micro) finance markets appear to be necessary, if not sufficient, for an inclusive agricultural transformation. In a sobering presentation, Bjorn Van Campenhout Sr. of KU Leuven in Belgium and IFPRI explained how and why ICTs are not a panacea and described challenges in evaluating their access, use and impacts.

In the **seventh Plenary**, Making Irrigation Sustainable, CGIAR's Claudia Sadoff noted that Agriculture is the primary driver of water use in most countries, and managing irrigation is vital under climate change. Countries are already experiencing drastic changes in precipitation and the hydrological cycle.

Panelists noted that agricultural water management has tended to focus on the supply-side, especially on infrastructure. Demand side needs urgent attention. Sharatchandra Lele of ATREE noted complex linkages between surface water, groundwater, and wastewater, each with vastly different governance systems, making coordinated policy responses difficult or leading to detrimental unintended consequences. IMWI's Soumya Balasubramanya noted the critical role of policies outside the sector, e.g. pricing of energy, or preferential treatment of crops for foreign exchange— requiring examination of nexus issues. Jinxia Wang of Beijing University noted need for multiple approaches for successfully managing irrigation. Ram Fishman of Tel Aviv University noted the importance of experimental research and policy analysis to understand the demand side of water, to identify the role of economic incentives (e.g., prices, water rights) and technologies (e.g., micro-irrigation) in improving efficiency and conservation, especially tradeoff among types of outcomes. Replicability of successful examples is a challenge, when preconditions are vastly different, e.g., between Israel and the rest. Nick Brozovic of the University of Nebraska noted today's phenomenon of increased data without context than the past of context without data, e.g. related to property rights of water.. Mark Smith noted key importance of distributional equity considerations in water management in both research and policy, especially where the consequences of climate change are likely to be serious.

Better data and better measurement at multiple levels (farm, basin, aquifer, landscape) was a repeated theme, along with strong enforcement and monitoring. Few successful examples of

sustainable water management currently exist, highlighting the need for urgent work in this area.

Participants urged IAAE to increase south south cooperation, foster development of thematic groups and training and mentoring of young researchers.

The **concluding plenary** chaired by Shenggen Fan and Leslie Lipper “Bringing it together” urged that the findings of these very rich plenary presentations be shared with the forthcoming UN Summit on Food System. Hence this summary.