

Editorial

## Agriculture, food and global value chains: issues, methods and challenges

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About one-third of trade in food and agriculture takes place within global value chains (GVC). Coffee, palm oil or biofuels production are examples of the modern organization of agri-food production through GVC (de Becker, Miroudot, 2014; Greenville et al., 2016; Baliè et al., 2019). Agricultural raw materials nowadays may cross borders many times before reaching the final consumers, as they are embedded in intermediate and processed goods which are produced in different countries. Agri-food GVC are typically characterized by a strong coordination between farmers, food processors or traders, and between processors and retailers. Value chain coordination can be initiated by downstream buyers, such as supermarkets and food processors, or by upstream suppliers including farmers or farmer cooperatives (Swinnen and Maertens, 2007; Reardon et al 2007). In a number of cases, a group of “lead firms” plays a critical role by defining the terms of supply chain membership and whom the value is added (Scoppola, 2021).

The growth of the agri-food GVC raises new issues for the agricultural and food sectors. Participating to the GVC is expected to have several positive effects, both for countries and farmers, in terms of technology and knowledge spillovers, increased productivity, growth, employment opportunities, and ultimately increase of farmers’ income. On the other hand, market concentration in agri-food GVC raises concerns related to the emergence of market power (Swinnen, Vandeplass, 2014). Further, there are concerns that producing for agri-food GVC may result in the intensification of agricultural production, with negative environmental effects in terms of deployment of natural resources and water stress.

Sound knowledge and evidence about the nature and implications of modern agri-food GVC are relevant for policymaker, firms and civil society. The economic analysis of agri-food GVC challenges agricultural and

food economists in several respects. The complex nature of GVC and of the issues they raise makes it essential the use of new and multiple lens of analysis (World Bank, 2020). Country-level (macro) approaches to GVC are needed to investigate the drivers of the world-wide fragmentation of agri-food production and the welfare implications of countries participating to GVC. Recent progresses in the empirical trade analysis of GVC are certainly fundamental to the understanding of agri-food GVC. Industry level (meso) approaches are needed to investigate the relationship among the various stages of the GVC. Analytical tools and approaches from the industrial organization literature are to be used to investigate issues such the price transmission along the agri-food GVC, the drivers of vertical coordination or the distributions of benefits along the GVC. A firm level approach (micro) is needed to investigate the implications of the participation to GVC for farmers.

The 10<sup>th</sup> AIEAA Annual Conference contributes to this debate, by putting together different disciplines and approaches to the analysis of agri-food GVC and of their implications in terms of economic, social, and environmental sustainability. Three keynotes explore these issues from different perspectives.

The keynotes by Silvia Nenci Ilaria Fusacchia, Anna Giunta, Pierluigi Montalbano and Carlo Pietrobelli entitled *Mapping global value chain participation and positioning in agriculture and food* (Nenci et al., 2022) reviews key methods and data issues arising in country-level analyses of GVC. They overall conclude that improvements in GVC measurements and mapping are currently still severely limited by data availability. Empirical literature to date mostly uses global Input-Output matrices and aggregate trade data to map and measure GVCs; however, sectoral and country coverage remains rather weak. They further review recent

evidence about trends of GVC, by using the GVC participation indicator and the upstreamness positioning indicator (measuring the distance of the sector from final demand in terms of the number of production stages) for two sectors, that is “Agriculture” and “Food and Beverages”. They show that at the country level, GVC participation is globally around 30-35 percent for both agriculture and food and beverages; while GVC linkages in agriculture are mostly forward linked, food and beverages are much more in the middle and at the end of a value chain. Furthermore, they show that, unsurprisingly, agriculture has a higher score on upstreamness with respect to the food and beverages sector. They conclude by discussing some critical issues faced by agriculture and food GVC concerning trade policies, technological innovation and the COVID crises.

The keynote by Tim Lloyd entitled “*Price transmission and imperfect competition in the food industry*”<sup>1</sup> aims at providing insights on how information is conveyed by means of prices between food consumers and agricultural producers along the agri-food value chains. After presenting some basic insights from theory, the keynote addresses the issue of how to detect the degree of market power by reviewing theory-consistent empirical models as well as the approaches developed in the New Empirical Industrial Organisation literature. The increased use of highly detailed retail (‘scanner’) data reveals that the food industry (retailing, manufacturing, and processing) is a major source of the price changes and that it also mediates price signals originating in other parts of the food chain in increasingly nuanced ways; the author concludes that agricultural and food economists should be wary of inferring too much about the competitive setting based on prices alone.

The keynote by Miet Maertens entitled “*A review of global and local food value chains in Africa: Supply chain linkages and sustainability*” highlights the expansion of agri-food GVC in low- and middle-income countries and how GVC are modernizing rapidly through institutional, technical, and commercial innovations. While a large body of literature focusses on the development implications of participation in GVC, the development of local food supply chains in low- and middle-income countries has received less attention. The review assesses potential linkages between global and local value chains in African countries, and the sustainability outcomes of supply chain innovations. The keynotes emphasizes that market competition as well competition for land, labour, water, and other resources may create negative linkages between the development of global and local food value

chains. Spill-over effects, such as investment, technical or institutional spillovers, may create positive linkages and complementarities in the process of supply chain development. The existence of such linkages importantly depends on the type of crop and the structure and organisation of supply chains and entail important consequences towards socio-economic and environmental sustainability.

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<sup>1</sup> Slides of the keynotes are downloadable at <https://www.aieaa.org/aieaa-conference2021>.