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RECEIVED 05 March 2023  
ACCEPTED 24 April 2023  
PUBLISHED 10 May 2023

CITATION  
Marenya PP, Aryal JP, Mulema AA and Rahut DB  
(2023) Editorial: Social and institutional  
innovations for achieving sustainable  
agricultural transformation in the global south.  
*Front. Sustain. Food Syst.* 7:1180037.  
doi: 10.3389/fsufs.2023.1180037

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# Editorial: Social and institutional innovations for achieving sustainable agricultural transformation in the global south

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## KEYWORDS

agri-food system transformation, global south, institutional innovations, sustainable development, green revolution

## Editorial on the Research Topic

[Social and institutional innovations for achieving sustainable agricultural transformation in the global south](#)

Although the green revolution era (from the late 1960s onwards) was arguably an important one in South Asia's progress toward food security, the exact drivers of these trajectories of food production remain contested by scholars across many disciplinary spectra (Stone, 2019). The relative role of new crop varieties vis-a-vis public investments in irrigation and fertilizer subsidies have spawned a large body of literature (Stone, 2019). Moreover, the widely reported unintended consequences suggest that fundamental institutional and systems innovations are needed beyond the promise of genetic, mechanical, and chemical technologies to foster *truly sustainable* agri-food systems (Pingali, 2012, 2022; Barrett, 2021). For example, the challenges of scaling "on-shelf" technologies suggest gaps to be filled in modernizing agricultural extension and rural advisory services. The lack of finance, information, and markets remain intractable impediments to sustainable intensification. Therefore, a broader and balanced range of both the "hardware" (technological progress) and the "software" (institutional and systems innovations) are indispensable for the sustainable transformation of agri-food system systems.

In this five-article topic, we aim not to participate in the polemical debates on the green revolution. Instead, we take a forward-looking approach, with the issues covered being reflective of a new, twenty-first century food systems transformation agenda. In this collection, the first paper by Mukahhal et al. provide a detailed historical analysis of the food system evolution in Lebanon, identifying three distinct eras defined by local and global forces. Mukahhal et al. suggest a recalibration of food systems investments toward local value chains, perhaps wary of the era of "corporatization" with its potential to leave out many small farmers in less accessible locations. This is not to say that these farming communities do not equally deserve economic opportunities driven by proximal consumer clusters providing the purchasing power. The Mukahhal et al. paper is thought-provoking because, on the

one hand, the economic growth and foreign-exchange-earning opportunities of global agro-value chains are attractive. Yet, their inherent vicissitudes of boom and bust or changing winds of geopolitical forces that affect trade offer a cautionary tale. On the other hand, are the more resilient, fit-for-purpose, localized food systems that serve local communities, are fairly autonomous and, perhaps only weakly interlinked with other national or international markets. The latter may create more resilient food systems, albeit at the risk of limited market horizons and narrowed income-earning opportunities.

In a somewhat similar vein to [Mukahhal et al.](#) the second paper by [Nugroho et al.](#) focuses on how to improve agricultural value-added in the Middle East North Africa (MENA) region. Using a static panel regression model within the framework of Diamond Porter's theory in agriculture, [Nugroho et al.](#) identifies the criticality of infrastructure, finance (credit), irrigation facilities, human capital formation, and fiscal management as crucial elements in agricultural growth (proxied by improvements in value chains). The authors discuss the role of globalization with its merits (wider access to lucrative high-income markets) and demerits (crowding out local value chains) and call for a balanced response to global forces in the process of agri-value chain development. The thrust of both [Nugroho et al.](#) and [Mukahhal et al.](#) is the need for careful approaches that consider the need for respecting the political voices of farming communities, responding to their needs with appropriate investments, and designing economic and trade policies that economists would call "pareto-optimal."

Focusing on one of the fundamental challenges for national and economic security in the global south (i.e., youth employment), [Nandi et al.](#) analyze the matter of attracting youth talent in agriculture. Their paper is of particular importance to the issue of youth bulge as a major developmental challenge in the global south ([Lam, 2006](#); [Al-Jabri et al., 2022](#)). Of particular concern, the authors reflect on youth's "aspirations failure" where younger generations do not aspire to farm-based careers, but those who end up there anyway, do so as a matter of an undesirable last resort, having failed to secure alternative educational and career opportunities. Yet these aspirational failures are multi-generational, occasioned by (among others) environmental distress such as soil health declines and non-remunerative agricultural markets. These forces lead parents to aspire for their children to get a good education, exit the rural areas and, acquire higher-paying jobs outside agriculture. This creates a vicious cycle of low educational attainments and low achievement, being associated with farm careers, further diminishing the appeal of farming careers. Arguably, strategies for attracting youth talent to agriculture as a viable career, may prove to be one of the most consequential investments for socio-economic development in the global south.

Community participation, gender equality, and social inclusion are central tenets of the development process. Many modern constitutions in Africa (and elsewhere) entrench this principle in their articles dealing with governance frameworks. The paper by [Mulema et al.](#) synthesizes the gender inclusion experiences of a CGIAR global research program that was run for several years—the Climate Change, Agriculture and Food Security (CCAFS) program. Two recommendations are worthy of note. The need for strategic approaches was suggested to include piggybacking on on-going policy processes to advance gender-equality-promoting

policies and programs. Second, although it might be a slow process, [Mulema et al.](#) suggest that establishing scientific credibility by working transparently with target policy and other stakeholder communities is indispensable for integrating gender approaches on climate and agriculture development agenda. This paper represents an emphatic statement on the "software" aspects of agri-food systems development or transformation. The pathways for translating science into inclusive development pass through a labyrinthine maze of institutional, political, and social corridors that researchers and their institutions must navigate.

Finally, the paper by [Endeshaw et al.](#) can be seen as focusing on the technology or "hardware" end of the spectrum. The paper analyses the impacts (or superiority) of drought-tolerant maize varieties and finds that a new generation of maize varieties relatively insensitive to brief but damaging mid-season droughts or moisture stress have superior performance on farmers' fields as evinced by higher yields reported in a large farm survey and confirmed by endogenous regression analysis. Yet even this [Endeshaw et al.](#) paper shows that institutional factors such as women's lower access to input markets and finance may explain their lower adoption of these new varieties. The authors, for example, note that "... interventions to improve adoption might require, among others, appreciating and accommodating...gender-linked differences through...actions in favor of female farmers" to help cure entrenched, skewed, and unfavorable resource and market access. The [Endeshaw et al.](#) paper is therefore a good example to illustrate the notion that for technologies to succeed, they must be embedded in a broader social framework.

We hope that these papers sensitize the readers to this social and institutional nexus crucial for agricultural development. We encourage the research and development community to sustain similar efforts as only the harmonization of technology, innovation, and society can direct the global community toward sustainable development in a time of climate crisis as well as environmental and human development challenges.

## Author contributions

PM: conceptualization and writing. JA, AM, and DR: review and writing. All authors contributed to the article and approved the submitted version.

## Acknowledgments

The various research papers reported in this topic were supported by various institutions and means. All these are gratefully acknowledged in the various papers.

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