Editorial: Labeling and certification for sustainability in food system

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Editorial on the Research Topic
Labeling and certification for sustainability in food system

Sustainability refers to "meeting the needs of the present without compromising the ability of future generations to meet their own needs," as defined in 1987 by the United Nations Brundtland Commission. Sustainability in the food system involves producing, processing, and consuming food in ways that protect natural resources, support economic viability, and promote social equity, ensuring healthy diets today without limiting future generations' ability to do the same.

Sustainability in the food system has become an increasingly critical global issue. Traditionally, policymakers have relied on a range of regulatory measures, including the 'command and control' approach, strict bans, penalties, and incentives. More recently, attention has shifted toward voluntary mechanisms such as labeling and certification, administered by independent bodies that provide written assurance that a product or firm meets defined sustainability standards.

There is a growing trend in the adoption of sustainability labels and certifications, driven by consumers who increasingly value sustainable products and by firms seeking market advantages, reputational benefits, and access to premium markets. However, a substantial gap remains between actual and potential adoption rates, particularly in low- and middle-income countries. This underscores the need to examine the economics of labeling and certification from market, producer, and consumer perspectives. Governments play a key role in setting sustainability standards, facilitating label application, and monitoring effectiveness while preventing greenwashing practices. At the same time, civil society, through consumer choices, can shape market demand and push for more sustainable solutions.

In this Research Topic, we present a collection of eight original, state-of-the-art research articles focused on sustainability in food systems, specifically through the lens of standards and certifications.

This Research Topic includes two articles examining food labeling and certification from the consumer perspective. Liu et al. investigated consumers' willingness to pay (WTP) for credit-traceable pork, showing how price sensitivity, trust, and prior purchase experience influence purchasing behavior. While consumers clearly demand transparency, price elasticity may constrain widespread adoption unless structural and informational

barriers are reduced. Building on these insights, the authors propose strategies to support the development and uptake of credit traceability systems. AlQurashi et al. assessed the effectiveness of five international front-of-pack label (FoPL) systems in guiding Saudi consumers toward healthier food choices. Their findings show that FoPLs such as Nutri-Score significantly improve consumers' ability to select and rank healthier products, highlighting the importance of label design and comprehension in promoting public health.

Among the contributions, two articles assess the impact of food labeling and certification on the performance of food processing companies. Hayat et al. analyzed the effects of ISO 14001 (Environmental Management System), ISO 45001 (Occupational Health and Safety Management System), and ISO 22000 (Food Safety Management System) on environmental and financial performance, demonstrating statistically significant positive impacts. This evidence underscores the value of Integrated Management Systems (IMS) not only for compliance but also for enhancing overall business performance. Wang and Wu examined China's Compulsory Food Safety Liability Insurance (CFSLI) policy and found it stimulates innovation, total factor productivity, and overall performance, particularly in non-state-owned enterprises and regions with higher marketization levels, offering insights for leveraging institutional mechanisms in industries with information asymmetry.

Two articles examined the benefits and limitations of sustainability and quality standards for farmers. Kavak's study in Turkey revealed that transnational sustainability standards in hazelnut production are undermined by national political economy factors, labor exploitation, and entrenched inequalities, limiting farmers' and workers' ability to benefit fully. The study calls for context-sensitive analyses that account for local labor market dynamics and power asymmetries. Taranov and Kawabata explored Participatory Guarantee Systems (PGS) in Kyrgyzstan, showing that institutional recognition of community-based certification frameworks can expand sustainable agricultural practices. The study advocates for mainstreaming PGS into national strategies and highlights the potential of inclusive, low-cost, community-driven certification models aligned with the Sustainable Development Goals of the United Nations.

Finally, two articles address distinct but related issues. Guerreiro et al. investigated Brazil, Chile, and Mexico, showing how institutional frameworks influence front-of-pack labeling (FoPL) policies, emphasizing the role of meso-institutions and stakeholder engagement. Denk's study on the Erzurum Rosette, a traditional Turkish dessert, examined the role of Geographical Indications (GIs) in promoting rural development, cultural preservation, and tourism, finding that greater awareness of GI registration enhances market access and sales. These studies offer insights into how institutional design and awareness-building can leverage labels and certifications for both public and private benefits.

Collectively, the articles provide a comprehensive overview of the multifaceted role labeling and certification play in promoting sustainability in food systems. They illustrate how these tools influence corporate innovation and performance, shape consumer behavior, and support farmers, while highlighting the importance of political, economic, and cultural context. Ultimately, this body of research demonstrates that well-designed labeling and certification schemes are more than regulatory or marketing tools, and they are essential instruments for creating sustainable, equitable, and resilient food systems for current and future generations.

Author contributions

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Conflict of interest

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