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EDITED AND REVIEWED BY
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SPECIALTY SECTION
This article was submitted to
Social Movements, Institutions and
Governance,
a section of the journal
Frontiers in Sustainable Food Systems

RECEIVED 18 April 2022
ACCEPTED 29 July 2022
PUBLISHED 23 August 2022

CITATION
Jena PR, Lippe RS and Stellmacher T
(2022) Editorial: Sustainable
certification standards: Environmental
and social impacts.
Front. Sustain. Food Syst. 6:922672.
doi: 10.3389/fsufs.2022.922672

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Editorial: Sustainable certification standards: Environmental and social impacts

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KEYWORDS

sustainability, sustainability certification, agriculture, cooperatives, impact evaluation

Editorial on the Research Topic

Sustainable certification standards: Environmental and social impacts

Sustainable agricultural practices are required to conserve ecosystems without harming the physical environment such as soil, water, and human health, and to maintain and increase farm productivity. There is ample evidence of overuse of fertilizer and pesticides in agriculture to achieve higher income, with negative consequences for soil (soil desertification), ecosystem (methane emission), and human health (Geiger et al., 2010; Wang et al., 2021). Third-party voluntary certification standards such as Organic, Fairtrade, Roundtable on Sustainable Palm Oil (RSPO), and Rainforest Alliance are often advocated as solutions to enhance sustainability in agriculture worldwide. These certification standards embody specific practices that when followed properly would lead to less methane emission, soil improvement, yield enhancement, and fair social outcomes. These standards are market-based instruments to create economic benefits for stakeholders involved in the value chain and to improve sustainability practices in the agricultural sector.

Major meta-analyses of socio-economic impacts of agricultural certification (Blackman and Rivera, 2011; Beghin et al., 2015; Bray and Neilson, 2017; DeFries et al., 2017; Oya et al., 2018; Meemken, 2020; Schleifer and Sun, 2020) commonly conclude that certification has rather mixed results when it comes to improving the welfare of smallholder producers. Similar views are echoed by Jena et al. (2012, 2017) who show that the socio-economic impacts of certification are inconclusive across countries. Schleifer and Sun (2020) broadened the scope of potential impacts of certification by adding indicators such as land use, land rights, food security, and gender equality. Their review shows that the evidence on the socio-economic impacts of certification is weakly positive and highly context-specific. In this context, this special issue highlights several case studies examining (i) the willingness of producers and determinants of adopting certain

sustainable certification standards and (ii) the socio-economic impacts of certification standard compliance.

Under the first objective, the paper by [Praneetvatakul et al.](#) showed the extent of producers' willingness to pay for adopting sustainable certification standards. A Choice Experiment approach was applied in a primary survey with 303 vegetable farmers from three peri-urban provinces in Thailand. The attributes used in the choice experiment are environmentally friendly pest management, human health impacts, market opportunities, training in integrated pest management, and additional farm cost. The attribute environmentally friendly pest management appears with and without an ecolabel certification in different options for the respondents with a higher payment for the latter option. The respondents chose both options, especially the women vegetable farmers who preferred to have an ecolabel along with environmentally friendly pest management practice. The mixed logit model results showed that farmers were willing to pay a sum of 2,157 \$/ha to avail the environmentally sustainable pest management practice alone and those farmers who preferred an ecolabel were ready to pay an extra amount of 222 US\$/ha. They conclude that the success of certification with ecolabels depends on the promotion of certified produce among consumers as the current consumer demand for certified produce remains limited. The feasibility of eco-labeling as part of direct marketing or other market arrangements depends on consumer demand for local product attributes.

[Ahmad Rizal et al.](#) identified determinants of smallholders' participation in sustainable certification of palm oil in Malaysia. The study considered potential determinants beyond rational choice theory and developed a model based on elements of social structure and interaction. The Structural Model analysis based on surveyed data of 200 palm oil smallholders in Malaysia revealed that their participation depends significantly on perceived economic benefits, social interaction, and shared identity, among others. The findings further confirm the notion that smallholders' participation in the palm oil sustainable certification does not entirely hinge on rational choice but is also influenced by social structure and communication discourses. This implies that palm oil smallholders in Malaysia are not apprehensive about participating in discourses that can be considered part of a certification dissemination strategy.

With respect to the second objective, [Jena and Grote](#) conducted household surveys in Ethiopia, Nicaragua, and India with 738 smallholder coffee farmers using an identical questionnaire. Their paper specifically examined the socio-economic impacts of Organic and Fairtrade certification on crop yield, net revenue from coffee farming, and household income. The comparative analysis based on the propensity score matching technique shows that the impacts are context-specific and strongly depend on the local organizational, and institutional settings. While the certified coffee cooperatives in Ethiopia were established top-down and relatively inefficient,

limiting the possibilities of positive benefits to individual smallholders, the certified coffee cooperatives in India managed to provide higher prices to their members compared to non-members. On the other hand, in Nicaragua, the coffee cooperatives had been established bottom-up and managed to gain positive net revenues for their members. There is, however, heterogeneity among the certified cooperatives. Some certified cooperatives have a deep organizational network and they could link up with exporters and importers seamlessly which helps them to have a strong price negotiating power, while other cooperatives are not so efficient. To implement certification programs more effectively, cooperatives as key local partners need to be substantially strengthened. Second, certification needs proper monitoring. The effective and regular verification of certification requirements by accredited inspectors is still challenging, not only in remote rural areas of developing countries.

[Verma et al.](#) provided a comparative assessment of five sustainable certification standards used in the spice sector in India. The standards compared include the Sustainable Spices Initiative-India, the Nedspice Farmers Partnership Programme, the SAN-Nestlé Spices Responsible Sourcing Partnership, Fair For Life, and the Rainforest Alliance Sustainable Agriculture Standard. The standards were assessed against value drivers, sustainability issues, the building of human, social, physical, natural, and financial capital, and the stakeholders involved. The results show that these standards mostly cover similar issues with no major evident differences. The paper further suggests a framework to evaluate and differentiate sustainable certification standards that outlines the different parameters and consists of three stages. The paper concludes that the empowerment and upliftment of local smallholder communities should be considered the key element in any framework to evaluate sustainable certification standards.

Although third-party voluntary certification standards can be a valuable tool to enhance sustainability practice in the agricultural sector, strengthen cooperative systems, and encourage public-private partnerships; it is a complex and costly instrument that often needs external financial support to establish, sustain, and control standard-based agricultural practices among smallholders in rural contexts of developing countries. Decision-making on standards adoption can go beyond the monetary benefits that may outweigh the costs of adoption. In that sense, fostering regular communication discourses would provide vital links between standard implementation and day-to-day practices and boost producers' understanding of the additional environmental and social benefits of standard compliance. Although the articles presented in this special issue constitute a step toward a better understanding of the adoption and socio-economic impacts of certain certification standards, further research questions remain open. For instance, how do country-specific governance, policy intervention to certified agricultural commodities, and

producers' non-cognitive skills influence the decision to adopt sustainable standard certifications? Would the contribution of standard compliance go beyond the price premium, and whether the long-term impacts remain uncertain? The analyses based on more than one wave of farm or household surveys are further needed to gauge the real impact of sustainable standard certifications and also to reduce selection bias that occurs while using the cross-section data.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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