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# The effectiveness of agricultural certification in developing countries: A systematic review

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ABSTRACT

Certification systems (CS) set and monitor voluntary standards to make agricultural production sustainable in socio-economic terms and agricultural trade fairer for producers and workers. They try to achieve a wide range of socio-economic and environmental effects through bundles of interventions that include the process of standard setting and compliance, advocacy among consumers, capacity building for producers, building supply chains, price interventions, and the application of acceptable labour standards, overall to improve the wellbeing of farmers and agricultural workers.

This paper presents the results of a mixed-method systematic review that synthesized the literature on socio-economic effects of certification systems on agricultural producers and wage workers in low and middle income countries. The review followed the Campbell Collaboration guidelines for systematic reviews, and included studies published between 1990 and 2016 in different languages, with evidence on low and middle income countries. The review included a quantitative effectiveness question focused on a range of intermediate (e.g. prices, wages) and endpoint outcomes (e.g. household income). It also included a question on barriers, facilitators and contextual factors shaping effectiveness which drew on qualitative or mixed-method studies. Eligible certification systems were based on second- (industry-level) or third-party certifications, and excluded own-company standards. For the effectiveness review, quantitative impact evaluations must use experimental or non-experimental methods demonstrating control for selection bias. With these inclusion criteria, the review includes 43 studies used for analysing quantitative effects, and 136 qualitative studies for synthesizing barriers, enablers and other contextual factors. Most included studies report on initiatives in Latin America and sub-Saharan Africa and focus primarily on agricultural producers. The quality of the included studies is mixed, and several studies are weak on a number of methodological fronts, especially on statistical reporting.

Overall, there is limited and mixed evidence on the effects of CS on a range of intermediate and final socio-economic outcomes for agricultural producers and wage workers. There are positive effects on prices and income from the sale of produce is higher for certified farmers. However, workers' wages do not seem to benefit from the presence of CS and, further along the causal chain, we find no evidence that total household income improves with certification. The integrated synthesis of quantitative and qualitative studies shows that context matters substantially in all causal chains and multiple factors shape the effectiveness and causal mechanisms that link interventions associated with certification and the wellbeing of producers, workers and their families.



## 1. Introduction

International agricultural trade has expanded rapidly in recent decades. As sources of agricultural products multiply in ever more complex supply chain systems, a growing set of new standards and regulations has come to affect the way agricultural commodities are produced, traded and consumed (Byerlee & Rueda, 2015). A mixture of market, industry, relational and civic conventions increasingly shape the governance of value chains and the distribution of value therein (Auld, Renckens, & Cashore, 2015). Exports from low- and middle-income countries (LMICs) in particular are increasingly covered by private voluntary standards that claim to certify the social and environmental sustainability of production conditions. This expansion of agricultural trade and associated

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standards may benefit producers and workers incorporated into global value chains, insofar as new conventions help empower these groups and improve control over the social and environmental effects of agricultural production. A rapidly growing empirical literature is seeking to evaluate whether and how the certification of private voluntary standards impacts the socio-economic wellbeing of producers and wage workers. This article presents the main findings of the first ever systematic review and meta-analysis of the literature on the effects of agricultural certification systems on direct producers and workers in LMICs. Our approach integrates quantitative and qualitative evidence on impact and causal mechanisms. We present evidence on key socio-economic outcomes and discuss the role of contextual factors in explaining these results.

Certification systems (CS)[1] are often multi-stakeholder initiatives with multiple drivers and shifting priorities. Historically, they frequently originated from, and were driven by, NGOs, as in the case of Fairtrade, a pioneering standards system that remains one of the most famous today (Raynolds, 2017). However, other standards such as Utz Certified or RSPO (Roundtable for Sustainable Palm Oil) have been more business-driven. The main function of CS in agriculture, especially in the form of third-party certification, is to set voluntary standards with specific requirements for producers or suppliers, monitor their compliance (through independent auditors) and support producers to meet them, with the goal of making agricultural production more economically, socially and environmentally sustainable and agricultural trade fairer to direct producers, i.e. farmers, and workers. Such schemes commonly, but not always, involve better performance and profitability through risk management, access to new and niche markets, and more predictable supply. Consumer-facing labels are usually used to communicate to the public that a product has been produced and sourced under specific standards and hence address both consumer and corporate public relations concerns (Aidenvironment, 2017).

There is a voluminous literature about certification systems, their rationale, governance mechanisms, organisation of value chains, institutional features and how they shape the dynamics of markets of agricultural products and consumer behaviour (Byerlee & Rueda, 2015; Gibbon & Ponte, 2005; Muradian & Pelupessy, 2005; Nelson & Pound, 2009; Ruben, 2012; Raynolds & Greenfield, 2015). However, this systematic review is more narrowly concerned with the evidence on the *impact* of these systems and their associated interventions on the *socio-economic wellbeing* of those who are supposed to be the ultimate beneficiaries of certification*: direct producers and hired workers.* A broad sweep of the abundant literature on certification, voluntary standards and their impacts on value chain participants in low- and middle-income countries (LMICs) suggests that the evidence regarding outcomes for producers and workers is inconclusive. Many studies report mixed findings or cases where effects are only marginal (Nelson & Martin, 2013; Ruben, 2012). Some conclude that CS may actually undermine the incomes of the poorest farmers (Henson & Jaffee, 2008), some found effects only for richer farmers (Hansen & Trifković, 2014), while others suggested CS help raise rural incomes and reduce poverty (Maertens & Swinnen 2009; Schuster & Maertens, 2016). Various studies found negligible or even negative effects on employment conditions (Barrientos, Dolan, & Tallontire, 2003; Cramer, Johnston, Oya, & Sender, 2014a; Colen, Maertens, & Swinnen, 2012). Other studies reported positive impacts for some certification types, but not others (Chiputwa, Spielman, & Qaim, 2015), or suggested that positive effects may dissipate due to over-certification (de Janvry, McIntosh, & Sadoulet, 2014).

Previous attempts to review and synthesise the evidence (Blackman & Rivera 2010; International Trade Centre, 2011; Vagneron & Roquigny, 2011) have shown that much of the existing body of empirical literature is still characterised by evaluation designs vulnerable to validity threats, while the description of data collection and analysis tends to be poor, preventing assessments of the quality of the evidence (Cramer et al., 2014a; Ruben, 2013; Terstappen, Hanson, & McLaughlin, 2013). However, these reviews have important limitations with regard to the transparency of review process, the critical appraisal methods used and the approach to synthesis, which mean they cannot be considered systematic reviews as defined by Campbell Collaboration.[2] Many such reviews also focus only on selected CS – or even on a single system (e.g. Fairtrade in Terstappen et al., 2013; Nelson & Pound, 2009; Darko, Lynch, & Smith, 2017). Therefore, a full systematic review, based around a statistical meta-analysis, was necessary to establish the state of the evidence on effects of certification on producers and workers, and the mediating factors that explain such effects or lack thereof. Such a review can also extract useful methodological lessons that may help improve the overall quality of the impact evidence generated by independent studies and research commissioned by CS.

Accordingly, this review set out to answer the following research questions:

- What are the effects of certification systems for sustainable agricultural production, and their associated interventions, on socio-economic outcomes for farmers, wage-labourers and their households?
- Under what circumstances and why do certification systems for agricultural commodities have the intended and/or unintended effects? What are the barriers to and enablers of certification's intended and/or unintended effects?

While the first question addresses the effectiveness question (i.e. do CS work?), the second question is critical in unravelling the causal mechanisms of impact and identifying barriers and enablers of CS effectiveness, taking into account how the context mediates between the implementation processes and the final outcomes (Pawson & Tilley, 2004; Weiss, 1997; White, 2009). To answer the first of these research questions, hereafter RQ1, we conducted a statistical meta-analysis of the effect size estimates provided by quantitative impact studies. For the second question, hereafter RQ2, we adopted a 'thematic sythesis' approach of the relevant qualitative evidence, as developed by Thomas and Harden (2008). The result is a theory-based, mixed-method systematic review that integrates both quantitative and qualitative evidence in order to provide combined answers not only on whether CS work, but also on how, why, when and for whom CS may or may not work.

The remainder of the paper is organized as follows. Section 2 lays out our analytical framework, provides a discussion of hypothesised causal chains linking certification to impact, and addresses the complications implied by the multiplicity of certification system interventions. Section 3 describes the methods used to identify and screen relevant studies, as well as our approach to data extraction, critical appraisal and data synthesis. Section 4 presents the main findings and integrates the results from quantitative (RQ1) and qualitative research (RQ2), with particular emphasis on the importance of context and how different kinds of contextual factors shape the effectiveness of certification. Section 5 concludes and presents suggestions for research and practice.

[1] The term standards system is also frequently used.

[2] For more information on the Campbell Collaboration guidelines, see https://www.campbellcollaboration.org/expectations-and-guidance-for-systematic-review.html.