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Effectiveness of agricultural certification schemes for improving socio-economic outcomes in low- and middle-income countries

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Summary

What is certification of agricultural production?

The main function of certification schemes (CS) in agriculture is to set voluntary standards with specific requirements, monitor their compliance (through independent auditors) and support producers to meet them, with the goal of making agricultural production economically, socially and environmentally more sustainable and agricultural trade fairer for producers and workers. The rise of voluntary standards and their respective CS has been an important aspect of the process of globalisation of agriculture over the past three decades.

The growth of certified production networks has accelerated in recent years, by expanding the range of products and the number of countries, producers and workers on a global scale. There is now a large number of standards and CS for agricultural production. Yet, the proportion of total agricultural trade that carries some certification of social sustainability remains small for most CS and products.

What do certification schemes aim to achieve, and how?

There are various objectives associated with CS. The range of activities they engage in is also significant. Standard-setting and monitoring and associated interventions are expected to contribute to a wide range of socio-economic and environmental outcomes, ultimately aiming to improve the well-being of farmers and agricultural workers, whether employed by corporate plantations or individual producers. This review focuses on these outcomes and not on the impact on consumers.

CS try to achieve these aims through a combination of standard-setting actions, capacity building and training for farmers and producers' organisations, and different types of market interventions, such as guaranteed market outlets, price premiums and credit facilities. Regarding workers, the application of adequate labour standards has been generalized across a wide range of CS in the past two decades. Besides setting and monitoring standards, CS also engage in a wider range of activities in policy, advocacy and capacity building, and in building markets and supply chains around the objectives of social and economic sustainability. In practice, individual CS are best understood as bundles of interventions.

What studies are included in the review?

This is a mixed-methods systematic review combining synthesis of effects from impact evaluations and synthesis of evidence on barriers, enablers and contextual factors. We used a wide range of search methods to obtain relevant published and unpublished evidence. We included 43 rigorous impact evaluations measuring effects of CS and 136 high quality qualitative studies examining barriers and enablers. Most studies were conducted in Latin America and the Caribbean and Sub-Saharan Africa. We present evidence by outcomes along the causal chain, including yields, prices, agricultural income, household income, assets, school attendance and illness.

What are the main results in this review?

To what extent do certification schemes improve the well-being of agricultural producers and workers in low- and middle-income countries? We find more evidence of positive effects on intermediate outcomes (producer prices and agricultural income from certified products) than on endpoint outcomes (wages, household income and assets). Thus, we find positive impacts on the prices producers receive for their goods, and income from the sale of certified produce is higher for certified farmers. However, yields and overall household income are not higher in general, nor is household wealth. Workers' wages are slightly lower in the presence of certification in the workplace. Certification improves school attendance for the children of certified producers, but we find no impact on illness.

Economic, social and institutional factors, at both the local and international levels, affect the implementation of CS and the extent to which outcomes improve for producers and workers. Additional external support to meet the standards and enter certified markets – by aid-giving organisations, industry stakeholders or local governments – appears to be a key determinant of the effectiveness of CS. Qualitative studies provide substantial evidence on the dynamics and variation of implementation. The outreach of CS is affected by the uneven participation of different groups of producers and workers and the inclusion of harder-to-reach poorer and more vulnerable participants. Certification costs are important barriers to entry.

Costs vary substantially across CS, depending on the types of standards and associated requirements, but even when they are relatively low, they can act as barriers to entry for the poorest producers. Implementation issues also arise in relation to training activities, especially when training is not sufficiently tailored to the varying needs and pre-existing knowledge of different kinds of producers or when there are limits to the availability of skilled extension staff in producers' organisations or extension agencies.

Implementation may also be uneven in other aspects of interventions, such as access to credit and pre-payment, access to certified markets, and benefits from premium payments. There is evidence that buyers of certified commodities (e.g. traders, exporters and non-governmental organisations) do not always implement credit and pre-payment arrangements or do not consistently enforce labour standards. Producer members in certified producers' organisations also seem to face demand constraints in markets for certified goods, which limit how much output can really be sold via a certified channel. Finally, evidence on implementation of premium payments used for various collective investments suggests that benefits do not always materialise as expected, due to local power relations, a lack of common interests, elite capture, or control and manipulation by plantations' or producers' organisations' management.

What are the implications of these results for policy and programmes?

There is no guarantee that living standards improve through certification for farmers and workers, the ultimate beneficiaries of the schemes. Like many other interventions, CS need the support of other factors and favourable conditions to produce lasting positive impact. Some of these conditions depend on deep-rooted socio-economic factors that are unlikely to be substantially altered by certification. It is easier for CS to improve immediate outcomes, such as prices or incomes from the sale of certified produce, than

endpoint outcomes, such as producers' incomes and general well-being. This is because, as we move along the causal chain towards endpoint outcomes, the number of contextual factors that can affect impact increases. Hence, contributions from CS interventions may be only marginally effective in improving them.

This raises two questions. First is whether claims about impact should match what is immediately achievable and verifiable. The temptation to aim high and design interventions with broader and more ambitious long-term goals is understandable, but this can generate expectations that may be hard to meet. Second, there may also be a case for revising standards, which are really bundles of interventions. By considering the relative effectiveness of each intervention and moving towards a more focused approach to standards, perhaps with fewer requirements, it may be possible to improve outcomes. A sharper focus on better monitoring of implementation may also contribute to better long-term effects by understanding more clearly under what circumstances positive impacts occur and are sustained. Thorough knowledge of the local context and capacity to tailor support to each case would be advisable in case standards are revised.

What are the implications of these results for research and evaluation?

The evidence reviewed, and particularly the paucity of high-quality impact evaluations, suggests that there is still fertile ground for CS and institutions supporting their efforts to agree on best-practice evaluation standards and expand the scope of evaluative work. Efforts to expand and improve upon focused process evaluations to learn more about implementation dynamics of specific interventions and longitudinal approaches that may capture the dynamics of change and improvement (or deterioration) with more precision are also welcome. This has the potential to generate a deeper understanding of context, which can be used to pretest the types and ranges of interventions to implement. There is also potential to learn from ethnographic research, which appears to better grasp the complexity of the local dynamics and explain successes and failures in more depth.

For researchers and evaluators, we highlight three main lessons. First, the review shows a disproportionate amount of research devoted to just a few CS, notably Fairtrade, which comprises more than half of all studies included in this review. Given the wide range of CS in practice, and to build a more complete understanding of different causal chains for different types of CS, more research is needed on the standards and schemes that are least researched, such as Bonsucro, Better Cotton Initiative or MPS.

Second, much can be done to improve the quality of impact evaluation study design. Researchers and research funders need to understand the methodological and logistical challenges that these studies entail, and the benefits of conducting studies prospectively, i.e. as CS are implemented. Evaluations using a theory-of-change-based approach with a range of methods for different kinds of research questions provide more relevant findings for policy and programmes. Third, greater clarity in reporting is needed for impact evaluations and qualitative studies, including clearer justifications for the selection of research sites and statistical specifications, as well as discussing whether results are valid for wider contexts beyond the study site.

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Abbreviations and acronyms

CS	Certification scheme(s)
GAP	Good Agricultural Practices
L&MICs	Low- and middle-income countries
NGO	Non-governmental organisation
PO	Producers' organisation

1. Introduction

<i>Section highlights</i>
<ul style="list-style-type: none">• <i>Certification of agricultural products is a growing global phenomenon.</i>• <i>There are different traditions in CS, from ethical trade movements to business-driven product differentiation.</i>• <i>This systematic review synthesises quantitative evidence on impact on socio-economic outcomes and qualitative evidence to assess barriers, enablers and contextual factors.</i>

The globalisation of agriculture, partly driven by improvements in logistics, reduction in transaction costs, and trade policy reforms, has seen the emergence of global value chains with increasing demands for quality and ethics in the production of agricultural commodities. Certification schemes (CS) have proliferated to meet this demand. This summary report presents evidence from a systematic review of the effectiveness of CS in improving socio-economic sustainability of agricultural producers and wage workers.

1.1 Global value chains

In the past three decades, global agricultural trade has expanded rapidly. This expansion may benefit producers and workers incorporated in global value chains. But such benefits are often unevenly distributed, and the spread of value chains has also undermined and damaged livelihoods and ecological systems in low- and middle-income countries (L&MICs). Global and national food scandals in recent decades have increased consumer awareness of the production conditions of agricultural commodities. As sources of agricultural products multiply in ever more complex supply chain systems, consumers seem increasingly concerned about the quality and safety of what they consume.

Food safety is not the only issue. Ethical awareness is also a major driver of new requirements in global value chains. Thus, consumers' ethical concerns regarding the social conditions under which certain products are produced, such as the use of child labour, forced labour or work under highly exploitative conditions, are increasingly determining their purchasing choices.

Growing demand for quality and ethics underpins the rise of voluntary standards and the certification of agricultural products. Thus, the setting and monitoring of standards to be met by different participants in supply chains now influences supply chain management in a rapidly growing number of products and settings.

1.2 Agricultural certification

CS differ widely in their stated immediate and long-term goals, as well as in the exact way they go about achieving these aims. Nonetheless, all schemes share a number of commonalities. All CS studied here apply standards to a number of aspects of the production process for agricultural products. These standards follow conventions that form part of a broad range of sustainability objectives, mainly concerning social and environmental sustainability. We focus on the application of such CS in L&MICs.

CS aim to achieve their objectives through bundles of interventions that include the act of standard setting, monitoring and accreditation that best practices have been followed; capacity building to improve practices in order to meet quality, efficiency and ethical standards; and price and contractual arrangements that aim to offer a better deal to producers and their collective organisations, including different forms of premium payments designed to enhance their capacity to invest in their business and their contribution to the development of their communities. CS differ in terms of their origins and broad orientation and dominant types of interventions. However, evidence suggests there is growing convergence among CS in terms of the standards set and the range of sustainability goals.

The growth of CS across all global regions is a well-known phenomenon in the past decade, and reflects two trends. Firstly, the growth of market-oriented CS. Buyers have been imposing an ever-expanding range of conditions to enter markets in buyer-driven global value chains, precisely as a way of creating product differentiation and enforcing certain minimum standards expected by a growing consumer base (Gibbon and Ponte 2005; Henson and Humphrey 2010; Maertens and Swinnen 2009). Secondly, since the 1990s, ethical trade social movements have successfully lobbied for 'fair' market conditions to counteract the possible negative effects of 'free' markets on vulnerable producers and workers in L&MICs (Barrientos 2000; Raynolds 2009; Dragusanu et al. 2014). These socially-oriented CS apply to a growing number of producers and retail outlets.

The market shares and outreach of CS are either unknown or still relatively small. For example, the Fairtrade product with the highest proportion of globally traded output is bananas, with approximately 2 per cent in 2014, up from 0.5 per cent in 2004; in the case of palm oil, the share of Roundtable for Sustainable Palm Oil certified production reached 18 per cent of global palm oil production in 2015; 10 per cent of global coffee production is now UTZ Certified (UTZ 2016a, p. 9); and GlobalGAP directly targets over 10 per cent of horticultural producers in South America and Africa (GlobalGAP 2016).

1.3 Rationale for the review

The question is, then: how do CS fare in achieving their stated objectives? Assessing the impact of CS in L&MICs is both conceptually and logistically complex. It is therefore not surprising that a long-running and lively debate has emerged in academia and in policy circles about the impacts of CS. Given the range of aims of CS, the fact that many of them have been in place for 20 years or more, and the increasing amount of research available, it is time for a systematic assessment of the existing evidence on the impacts of these interventions.

There is an abundant literature on certification, voluntary standards and their impacts on participants, especially on small producers in L&MICs. A broad sweep of the emerging literature suggests that there is a consensus, among those who have studied CS for some time, that the evidence is inconclusive at best. For example, many studies tend to report mixed findings, with some positive and some negative elements, or cases where effects are only marginal (Nelson and Martin, 2013; Ruben 2012). Some have found that CS may actually undermine the incomes of the poorest farmers (Henson and Jaffee, 2008), some found effects only for richer farmers (Hansen and Trifković 2014), while

others suggested CS can help raise rural incomes and reduce poverty (Maertens and Swinnen 2009). Some reported positive impacts for some certification types but not others (Chiputwa et al. 2015) or suggested that positive effects may dissipate due to over-certification (de Janvry et al. 2014).

Previous attempts to review the evidence suffer from important limitations, including the transparency of review process, the critical appraisal methods used and the synthesis approach. These literature reviews also tend to focus only on selected CS – or even on a single scheme (e.g. Fairtrade, in Terstappen et al. 2013; Nelson and Pound 2009).

1.4 Review approach

This report summarises the first systematic review of the effectiveness of certification schemes (Oya et al. 2017). The systematic review used methods of search, data extraction and synthesis established by 3ie and the Campbell Collaboration. It provides evidence on the extent to which, and under what conditions, CS for agricultural products result in higher levels of socio-economic well-being for agricultural producers and workers in L&MICs. Here is the primary review question:

1. *What are the effects of certification schemes for sustainable agricultural production, and their associated interventions, on socio-economic outcomes for farmers, wage-labourers and households?*

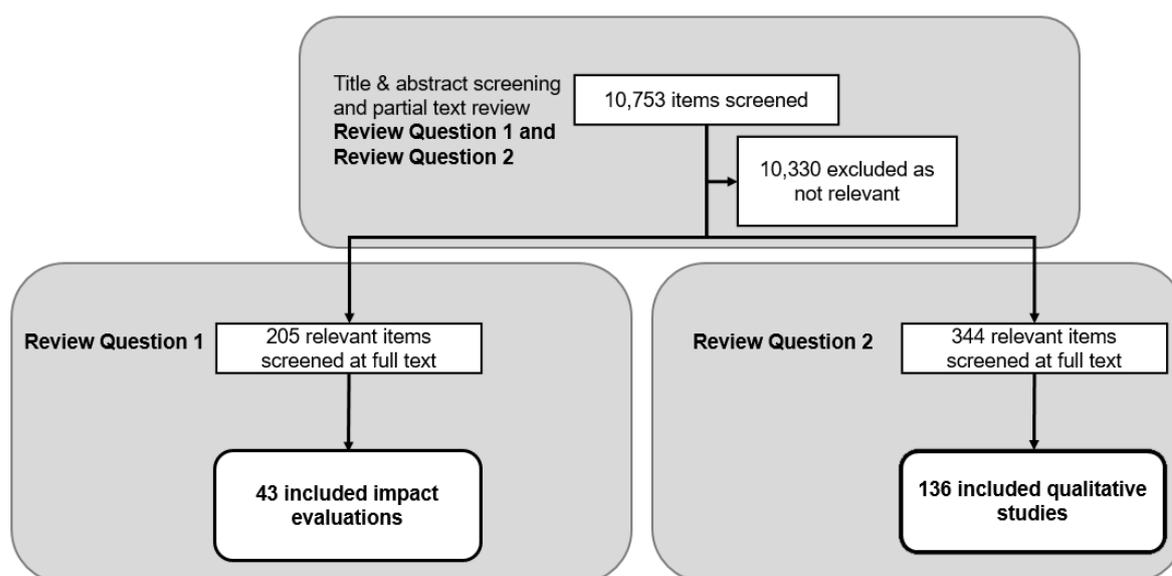
Here is the secondary review question:

2. *Under what circumstances, and why, do certification schemes 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?*

To address these questions, we searched systematically for evidence from published and unpublished studies. In this field, substantial literature remains unpublished, i.e. unavailable in academic journals or standard literature databases. We searched for and considered studies in English, French, Spanish, German and Portuguese.

We selected rigorous impact evaluations that use experimental or quasi-experimental methods to answer review question 1. Such methods are designed to establish a direct causal link between the certification intervention and particular outcomes. However, some studies implement the methods more appropriately than others, hence we graded each study according to whether it had low, moderate or high risk of bias. We selected high-quality qualitative evaluations to answer review question 2. These included process evaluations, participatory evaluations and ethnographic studies. After screening thousands of references against selection criteria developed to ensure the quality of the included evidence, we included 43 rigorous studies for the analysis of effects of CS (review question 1), and 136 high-quality studies for the qualitative synthesis of barriers and enablers (review question 2), as illustrated in Figure 1. Readers are advised to consult the full technical report (Oya et al. 2017) for more details on the specific methods and findings summarised here.

Figure 1: Study flow diagram



Note: At full text stage some items were screened for both review questions.

1.5 Who can benefit from this evidence

This summary report is intended to be relevant to policy and programming, particularly given the wide support and acknowledgement that CS and voluntary standards have so far received by public institutions and aid providers. In order to assist CS design, the summary provides evidence on impacts of schemes on key outcomes and on the contextual factors that enable or impede them. The summary is also for buyers of certified products, from corporations to consumers, who frequently demand more evidence about the effects of the standards they support. Finally, the report is for agricultural producers' groups that may become increasingly resistant to adopting certification if evidence of impact is not convincing or sufficient. The absence of evidence should be a wake-up call, encouraging relevant stakeholders to step up efforts to improve the evidence base.

1.6 Structure of this report

The remainder of this report considers the nature of interventions associated with CS and their main components in Section 2 and a discussion of the main causal chains contemplated in the theories of change relevant to the work of CS in L&MICs in Section 3. In Section 4, we summarise the main findings and the state of the evidence, focusing on the quantitative effects and the main lessons extracted from qualitative evidence on barriers and enablers. This section also contains key findings on implementation features and dynamics. Finally, Section 5 discusses the implications of our findings for policy and research.

2. The intervention

<i>Section highlights</i>
<ul style="list-style-type: none">• <i>Each certification is a bundle of different interventions.</i>• <i>Interventions can be grouped into capacity building, market relations, premium payments and labour standards.</i>• <i>Interventions reflect the different origins and orientations of different CS.</i>

There are two broad types of orientations of certification scheme. One is more market oriented and directed to meet consumer demands for safety and ethical practices. The other is driven by social movements aiming to make international trade of agricultural commodities fairer and more beneficial to producers and their workers. This section presents the interventions included in CS.

2.1 Certification schemes' aims

We focus on CS for agricultural commodity production, by which we mean third-party (not own-company) standards, subject to third-party certification and auditing processes, where non-governmental organisations (NGOs) may play an important role. We also include what has been referred to as 'second-party certifications' which, like third-party certifications, are not own-company standards, but with standard setting and monitoring controlled by an industry or sector, such as large retailers in the case of EurepGAP/GlobalGAP (Gereffi et al. 2001; Raynolds and Murray 2007). Like third-party certifications, these industry-specific schemes ensure separation of powers among standard setters, certification bodies, and accreditation bodies, in what has been dubbed a 'tripartite standards regime' (Loconto and Busch 2010; Aasprong 2013).

The different origins and orientations of CS, coupled with the growing range of actors involved, from NGOs to global corporate business to all kinds of producers, mean that standards may perform a wide variety of functions. These depend on which actors are involved and the nature of agricultural value chains, from cost-cutting to risk-mitigating, brand-making, market-opening and awareness-raising, among other roles (Riisgaard 2009).

Generally, CS aim to improve upon the effects of 'free' trade and agricultural trade liberalisation by offering better trading conditions, supporting producers' organisations (POs) to gain better market access, assisting producers to enhance product quality, designing specific interventions or incentives to raise productivity, or a combination of these aspects (Raynolds 2000). Through their consumer-facing labels, they also provide markers for product differentiation in increasingly complex and segmented markets where consumers want to know more about the products they consume, where they originate, how they have been produced and whether they were produced with respect for the environment and basic human rights (Reardon et al. 2009; Ouma 2015).

In relation to employment, CS act to make labour standards visible, either by requirements to meet basic rights (e.g. a minimum or living wage) or by assisting firms and workers to improve basic conditions through investments at the workplace. As a result of multiple expectations and objectives, and the fact that not all importers,

manufacturers or consumers want the same thing, many CS develop standards and labels to meet all these differentiated demands. This means that it is hard to think of 'certification' as one consistently defined intervention (von Hagen et al. 2010).

For purposes of illustration, we can see some differences between CS despite their broadly similar embrace of social sustainability as a goal. Thus, in cases where social and environmental goals are intertwined, as in Rainforest Alliance, for instance, farm productivity and profitability and the well-being of farmers, workers and their families are seen as intermediate outcomes that, in the long term and through scaling up, may lead to the ultimate goal of creating and maintaining sustainable rural landscapes. Other CS tend to focus on more specific socio-economic sustainability outcomes, such as production efficiency and profitability and basic labour standards (Bonsucro, 4C-Global Coffee Platform or the Better Cotton Initiative, among many other schemes). For UTZ (2016b), meeting the requirements of the standards, combined with access to training and better market connections, can result in productivity and quality improvements that enhance opportunities for farmers and workers and may finally contribute to a protected environment.

Even a single CS may incorporate different types of standards and requirements, as in different 'levels' of certification. In the case of MPS, for example, which is applied in horticulture, different levels entail particular standards, some focusing only on environmental outcomes and some including a strong labour standard component (e.g. MPS-Socially Qualified). The specific interventions each CS proposes for each standard reflect the variation in focus and emphasis.

Variation also concerns beneficiaries. In the case of CS for agricultural and food production, there are three main types of actors that may receive certification: individual farmers (agricultural producers); POs; and export firms/organisations. This review is concerned with those directly involved in the production of agricultural commodities, therefore farmers or POs and their employees.

2.2 Specific interventions linked to certification schemes

An important differentiation has to be made between the act of certifying and the direct interventions that precede or follow the certification process. In principle, the development of standards and the act of certification may not constitute a conventional development intervention per se. However, the introduction of codified standards, following an auditing and accreditation process, may induce behavioural changes in farmers (e.g. investments to meet requirements) that benefit production conditions and open access to better market opportunities, without any additional direct, farm-level intervention by the certifying body. Yet, most CS do require direct interventions at the level of the farm, the producer group or the workers' group. In short, different CS are best understood as bundles of interventions, guided by a variety of theories of change, which are described in more detail in the following section.

The main challenge for impact evaluations of certification is that studies treat the fact of being certified as the proxy for intervention, even though certification involves a bundle of interventions. While reasonable judgement can sometimes be made about the dominant intervention in each CS (whether training, auditing of labour standards or price

interventions, for example), the vast majority of studies estimate the effects of one or more interventions on selected outcomes. Another complication is that apparently similar interventions may be structured and implemented differently in different places and at different times, encompassing different intervention components.

Most studies report on six typical types of interventions: price interventions (minimum/guaranteed prices and additional price premiums); additional payments to support producers and their organisations; other market interventions to reduce volatility and/or improve market access to more remunerative and/or more stable markets (for outputs, inputs or both); technical support for better organisational and production management; support for better agricultural practices for quality, productivity and health and safety in production, through technical assistance and guidance tools; and labour standards, through auditing and monitoring. Some of these interventions have aspects in common, such as training for individuals and collective capacity building.

This review groups the main interventions that come with the certification process around four main blocks of related interventions:

- Capacity building through training;
- Market interventions (including price measures);
- Additional payments for social and business investments; and
- Labour standards.

Almost all CS provide some capacity building, but for a variety of purposes, and using different methods of delivery. Most CS engage in some form of market intervention, especially in the form of opening new markets or creating specific market niches that may be more remunerative and stable for certified producers. However, not many CS engage in direct price interventions, such as price guarantees or price premiums. This is a hallmark of a leading CS, Fairtrade, and other fair trade organisations, but is not generally applied by other CS. The use of pre-payment or forms of credit to assist investment and input use cuts across a wider range of CS. The use of additional payments to organisations (as a 'premium') for collective investments is a particularity of Fairtrade. Finally, the adoption of labour standards has become increasingly generalised among most CS, even though direct interventions to empower workers and their organisations are much less common.

The details of the various intervention components and the causal mechanisms through which they are supposed to work are described in the next section.

3. How certification schemes are supposed to work

Section highlights

- *The theory of change includes several types of interventions and different causal chains.*
- *There is multiplicity of intermediate and endpoint socio-economic outcomes, each potentially affected by more than one intervention component.*
- *A wide range of assumptions underpin the variety of causal chains.*

The various bundles of interventions may have an impact, directly or indirectly, on different intermediate outcomes (e.g. prices, yields and farm revenues) and endpoint outcomes (e.g. wages, household income and school attendance). We developed a hypothetical theory of change for how the intervention is expected to work (Figure 2). The specific interventions and main hypothesised causal pathways are summarised in this section.

3.1 Capacity building interventions

These include two specific types of interventions: capacity building for value-chain upgrading and for improved governance. The first type of capacity building, which includes what we refer to as ‘Good Agricultural Practices’ (GAP), is very common across a wide range of CS, whereas the second type is typical of Fairtrade in particular.

Capacity building for value-chain upgrading includes: i) training and extension service for better farming practices to improve quality, productivity and/or food safety; ii) assistance for professional farm management, through training visits or materials; and iii) assistance/training for professional PO management, especially in relation to coordination between producer member, exporters and buyers; quality/grading checks; and other tasks that can increase the value of traded products.

The hypothesised causal chain from capacity building interventions can be summarised as follows:

- Improved farm management through behaviour/attitude changes combined with more resources;
- leads to investments in improvements in quality and/or productivity of traded commodities;
- thereby commanding better prices; and
- contributing to higher farm incomes and overall household income, which may also positively affect wealth and household investments in education and health.

The second specific intervention is support to POs and businesses to improve their governance and democratise decisions over use of additional payments. This form of capacity building is expected to empower the members of these POs and make them more sustainable and accountable. The hypothesised causal chain from governance interventions can be summarised as follows:

- Improved professional and democratic organisational management, which can strengthen them (POs or agribusiness) in terms of their legitimacy, participation and capacity to negotiate,

- which can lead to members' empowerment and access to better services and more remunerative markets, thanks to better reputation and organisation.

3.2 Market interventions

There are two main groups of market interventions: price interventions and other market interventions. Price interventions operate in output markets, providing: i) a price floor or guaranteed minimum price to cover basic production costs and protect producers from market fluctuations and slumps; and ii) price premiums accruing to producers if certain attributes are achieved. Other market interventions operate in both input and output markets, including: i) some form of pre-finance or credit; ii) longer-term or more stable contracts; and iii) access to alternative and/or additional – possibly more lucrative – markets if certification requirements are met.

Here are expectations associated with these interventions:

- Contribute to higher and more stable producer prices, which in turn can result in higher net profits for agricultural producers, assuming they are not offset by high certification costs.
- Provide protection from price volatility, which can improve reliability of supplies and/or predictability of sales, resulting in greater income stability, profitability and reduction in risk and vulnerability to shocks. These effects can result in higher incomes and household consumption, as well as reduced vulnerability to poverty at the end of the causal chain.
- Support input markets, which can also improve producers' capacity to invest and improve production conditions and productivity.

All of these expectations contribute to strengthening market power and negotiation capacities of POs and ultimately contribute to their members' empowerment. All of them may also result in asset building, both productive assets in farming and household assets, which may positively affect wealth and household investments in education and health, as well as improve resilience against shocks.

3.3 Additional payments for social, community and business investments

This is a special type of intervention that straddles the boundaries between market interventions and capacity building. It is particularly important in one of the leading CS, Fairtrade. We singled it out, as it can generate its own causal chain for key socio-economic outcomes of interest in this review. These additional payments, or 'premiums', are sometimes referred to as a 'social premiums' or 'community premiums' because the price premium offered on top of the market price to a PO or a plantation can be invested in a variety of assets/infrastructure.

They may lead to possible positive outcomes for communities or groups:

- Better education and health access and/or other outcomes, which may also positively affect wealth and household investments in education and health;
- Higher incomes if economic infrastructure or assets improve production and marketing conditions;
- Empowerment via strengthened POs; and

- Better working conditions, when premium-funded investments directly affect the workplace conditions faced by agricultural workers.

3.4 Labour standards

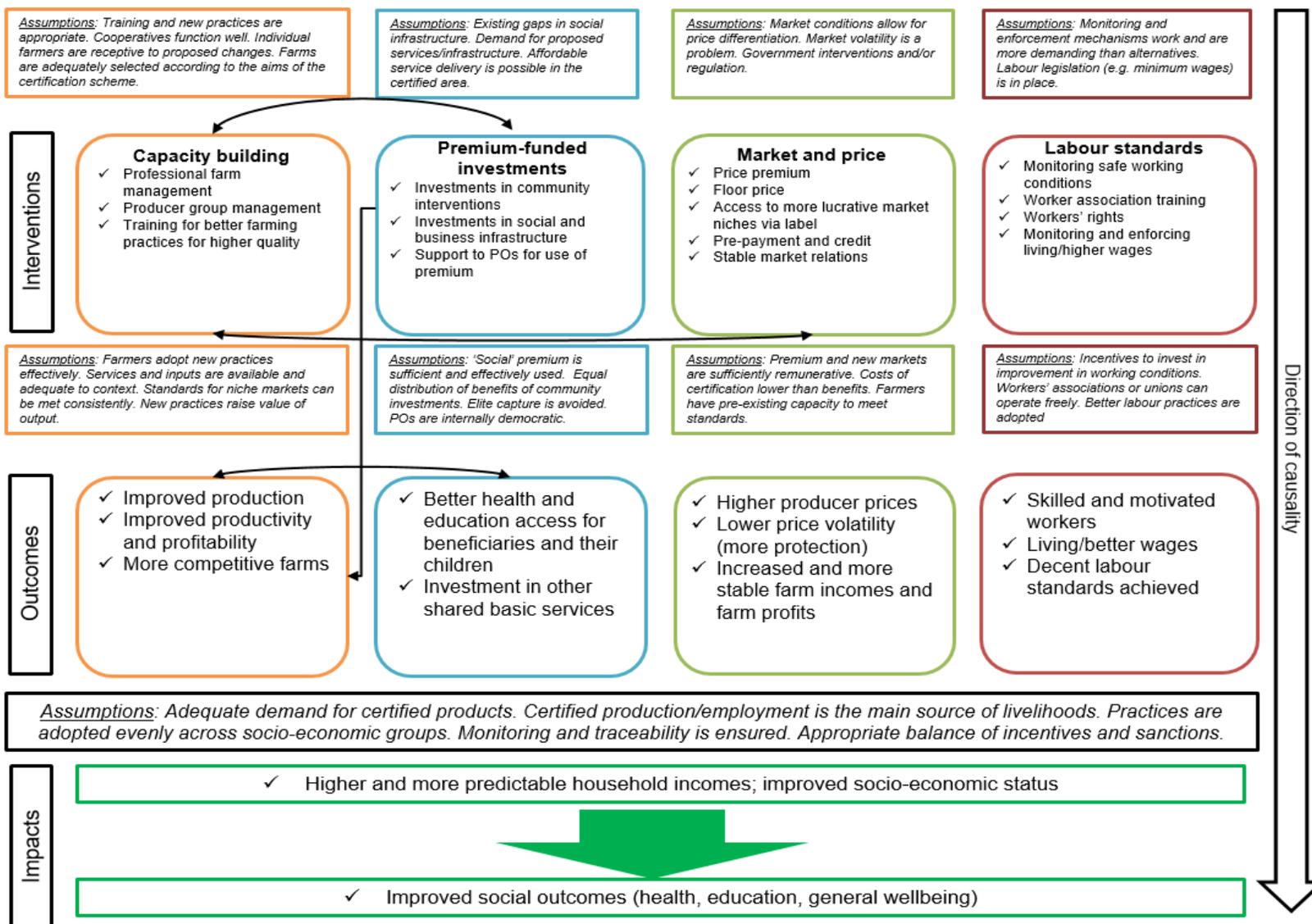
Implementing labour standards, through monitoring and auditing of working conditions on farms, can have a direct impact on workers' well-being by ensuring payment of living wages – or at least better wages – and better working practices, especially when health and safety conditions improve and affect workers' health.

Another way of illustrating the causal chain is by considering hypothesised pathways to impact, whereby a standard that is audited and leads to compliance entails investments by producers (with their associated costs). Compliance is based on behavioural changes, which may improve production and working conditions and improve both environmental and social sustainability.

Once standards are agreed, the causal pathways to impact on the well-being of producers and workers can take four main forms:

- If standards grant access to more remunerative markets or guaranteed buyers, then farm income can rise and become more stable. This could or could not potentially trickle down to conditions for wage workers employed by certified farms.
- If standards include GAP designed to improve conditions in the production process, and thereby the health of workers and producers, then the final outcome could be, for example, improved health and reduced vulnerability to sickness.
- If standards entail compliance with practices that specifically improve productivity and/or quality, then producers could benefit from higher yields and higher quality, thereby commanding higher prices in conventional markets or even access to niche markets where quality is highly valued.
- If standards specifically refer to working conditions, then wage workers in certified farms directly benefit from how compliance affects their wages (e.g. a living wage) and non-wage conditions.

Figure 2: Theory of change



4. The impacts of certification schemes

Section highlights

- *Limited evidence is available for each socio-economic outcome along the causal chain.*
- *Available evidence points to positive effects on intermediate outcomes, such as prices and sales income, but not on endpoint outcomes, such as household income and wages.*
- *Context matters more than differences between CS in explaining findings.*
- *More rigorous impact evaluations are sorely needed to measure the impact of CS on worker wages.*

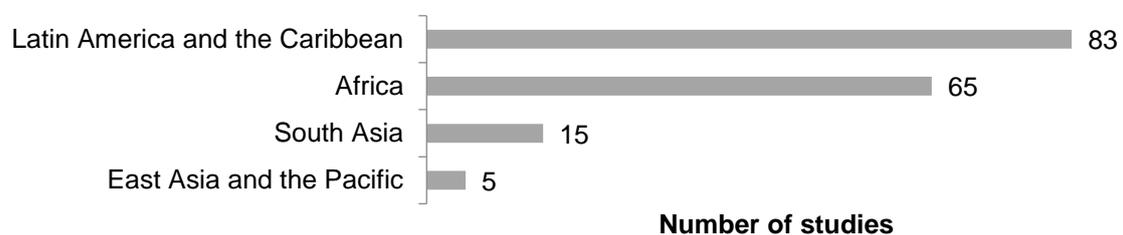
A large number of studies, containing data on a wide variety of outcomes, are included in this systematic review. Grouping outcomes along the causal chain, starting from outcomes that are more directly linked to some of the common interventions in most CS, and moving along the causal chain towards endpoint outcomes, we find a mixture of positive and negative effects. This section presents the evidence.

4.1 Settings and interventions

Despite the existence of dozens of CS, the included studies only provide evidence for 12 of them. Even among included CS, there is substantial attention given to a limited set, notably Fairtrade (more than half of included studies), UTZ, Rainforest Alliance, and GlobalGAP. There is an absolute lack of high-quality impact evidence for a large number of CS.

As Figure 3 illustrates, most studies were conducted in Latin America and the Caribbean and Sub-Saharan Africa, partly reflecting the predominance of studies on Fairtrade, which is concentrated in these regions. Fewer studies were conducted in Asia, although this does not necessarily mean that the reach of standards in Asia is less important than in other regions.

Figure 3: Regions of included studies¹



Coffee, the pioneer certified commodity, was also the most commonly assessed. It was evaluated by 38 per cent of studies, again reflecting the dominance of Fairtrade and UTZ in the included studies, as both of these schemes focus heavily on coffee. In terms of

¹ N=168. This figure represents studies included for both review questions. In this figure, N sums above the number of included studies because some studies took place in more than one region.

population, a large majority of studies (77 per cent) focus on agricultural producers, whereas the research on employment outcomes is rather limited.

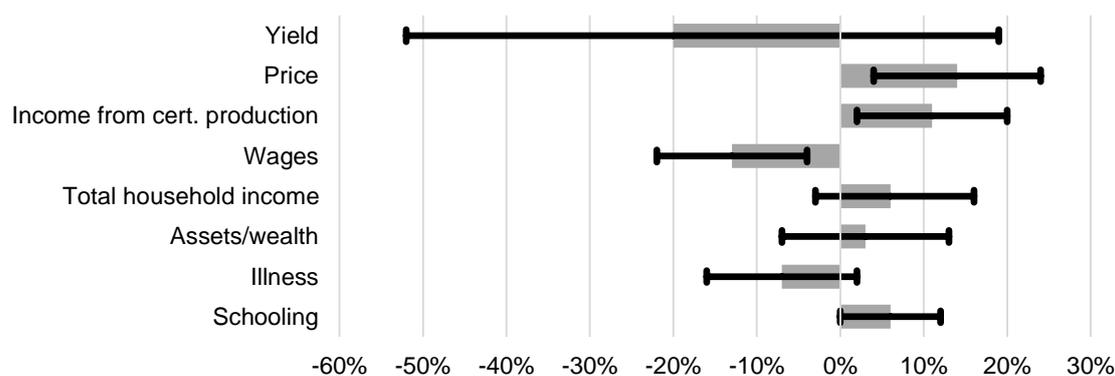
With regards to the implementation of different intervention components, reviewed studies show that some intervention components are generally common across different kinds of CS, notably GAP (which encompasses a variety of issues and forms of training), management support to producers and POs, and labour standards. A significant number of studies also report on price interventions, mainly reflecting the influence of Fairtrade on these results. In the case of qualitative studies, the most common interventions analysed in depth are precisely price and premium interventions and their associated collective investments.

4.2 Overview of impacts

The results of the synthesis of quantitative impact evaluations are based on 43 studies that report effects of certification schemes in agricultural production in L&MICs on outcomes. We incorporate qualitative evidence from the 136 included studies in interpreting the findings. We estimated effects of CS along the causal chain, from yields, prices and income from certified production, to wages, total household income, assets, illness and schooling. There are many outcomes incorporated in the analysis, so despite the pool of 43 impact evaluations, only a limited number of studies are available per outcome.

Figure 4 summarises the results of the synthesis of effects of CS on outcomes along the causal chain. For each outcome, the overall effect is shown, which is calculated using the effects reported in the 43 individual impact evaluations.

Figure 4: Summary of the meta-analysis findings



Note: The black bars show the 95 per cent confidence intervals.

For ease of interpretation, we have expressed effects as the standardised percentage change in outcomes for a typical certification scheme along with the associated uncertainty, as indicated by confidence intervals (see Appendix A for more detail on quantitative results).²

² These 'standardised percentages' are statistical constructs that rely on a number of assumptions and are not the same as actual percentage changes. They are presented here only to convey a more intuitive measure of the relative size of the reported effects, so we can compare the relative strength of effects across different outcomes. For more information on how these measures are constructed, please see Section 3.3.4 of the full technical report (Oya et al. 2017).

The causal chains discussed here are organised in relation to the evidence found and do not necessarily correspond to all the causal chains in the theory of change presented in Figure 2.

4.3 Effects on yields

Yields measure the amount of output produced per unit of land. The overall effect is negative, but not statistically distinguishable from zero (Figure 4). For this outcome we synthesised five studies, whose individual effects ranged from negative to positive. Only one study was rated as having low risk of bias in estimating effects on yields.

In the causal chains affecting yields, it is important to consider capacity-building interventions, since they can affect farming practices, leading to higher yields. However, many CS (e.g. Fairtrade) are not actually designed to increase yields. CS that use capacity-building explicitly to improve yields, such as UTZ and Rainforest Alliance, have slightly higher estimated effects on yields.

CS that use market-price interventions and focus capacity-building efforts more towards empowering POs and strengthening their position in the value chain (e.g. Fairtrade) have lower yields. Overall, it is impossible to establish whether market-type interventions have any positive effect on yields, given the variety of results and types of interventions.

Whether or not market-price interventions are supportive of producers' incomes depends on whether higher prices for certified goods outweigh the forgone income from potentially lower yields. Lower yields in Fairtrade certification may be related to the combined adoption of organic standards, often associated with lower physical productivity because of the lack of chemical inputs. Given the uncertainty around our estimates of pooled effects, it is also possible that higher prices offset lower yields in those cases in which certified farm incomes are higher (see Section 4.4).

Besides the type of CS, what matters most is the range of barriers and enablers most likely to affect this causal chain, especially in relation to aspects of the implementation process. In the case of linkages between capacity building and yields, the review of qualitative evidence suggested that several barriers and enablers are critical:

- Whether capacity building in the form of training is adequate and tailored to context. Included evidence suggests this is not always the case.
- Whether producers can afford the cost of adopting standards and recommendations of best practice. Findings suggest that often they cannot, especially when additional financial support or credit is not available.
- If POs have sufficient and sustained external support to adopt and maintain standards, for which evidence is mixed, then certification is more likely to result in higher productivity.

In the relationship between market interventions and yields, qualitative evidence suggested two key implementation factors seem especially important:

- Whether prepayment is enforced and sufficient. Various studies report problems of implementation and weak enforcement.

- Whether credit is provided, is sufficient to cover production costs and is efficiently used. Few CS provide this alongside certification, although included evidence suggests that credit is not always used for productivity improvements.

The evidence on implementation dynamics shows that capacity-building interventions vary widely across different CS, and can be hard to compare across contexts. Training needs depend greatly on farmers' existing knowledge and production capacities, and on how demanding are the requirements for meeting standards. But training implementation is not always sufficiently tailored to producers' characteristics and needs, especially when broad toolkits are used. Effective implementation can suffer from the limited availability of skilled extension staff, especially in contexts where CS operate with POs that have very large numbers of small producers and only a segment of them can be properly targeted.

With respect to access to credit and pre-payment within CS or from outside support, which most studies consider a key enabler, these mechanisms appear not always to be properly or systematically enforced, especially when different buyers are involved and not all conform to the prescribed standards. Indeed, access to credit is more of an 'add-on' that depends on the specific actors involved in promoting a given certification and their capacity to support large numbers of producers. This is particularly important for CS that operate with smallholder producers in relatively poor countries, where resource constraints become a significant barrier to complying with standards unless credit or prepayment is provided.

4.4 Effects on prices

Regarding the prices received by producers, our overall estimate is that prices for certified producers were 14 per cent higher than for non-certified producers (range from 4–24 per cent) (Figure 4). Three of the four studies we synthesised for this outcome provided positive effects. One study was rated as having high risk of bias, while the other three were rated as having moderate bias.

The evidence for the causal chain between market interventions and producer prices is also limited to a few studies, but findings are generally positive. It is not possible to establish whether this is because of price guarantees and price premiums (Fairtrade) or due to tapping into more remunerative markets because requirements are met (GlobalGAP), although the effects seem larger in the case of GlobalGAP certification. The following assumptions are the main ones for this chain, according to the included qualitative studies:

- Markets must be sufficiently remunerative, which is generally the case when prices in conventional markets are below the guaranteed minimum price and/or when the price premium is enough to compensate for additional costs (though many studies show this only happens in certain conditions). Costs of certification have been stressed as a key barrier to adoption and effectiveness, particularly when CS are combined with organic production.
- Overall price interventions find support in the reviewed literature, especially when we consider floor prices in contexts of price slumps. The fact that certain CS open a door to more lucrative niche markets also influences the final producer price.

4.5 Effects on income from certified production

We have the most evidence for incomes from certified production. We estimate that incomes from the sale of produce were 11 per cent higher overall, if the produce was certified (range from 2–20 per cent) than if it was not (Figure 4). For this outcome, we synthesised 10 studies whose individual effects ranged from negative to positive. Half of the studies were rated as having moderate risk of bias, and the other half were rated as having high risk of bias. No studies were rated as having low risk of bias.

Although the overall effect is positive, there is substantial variation, suggesting that effects may depend, in part, on circumstances. The CS that do better according to the limited number of studies found (GlobalGAP and UTZ, though the evidence is very mixed in the latter case) would suggest that a combination of more effective capacity building for productivity increases, combined with more remunerative markets, is more effective. Markets may be more remunerative partly because of the type of commodity (higher value-added horticulture versus coffee or cocoa) and partly because of the quality demands associated with these CS. In other words, the type of product and associated supply chain also matters.

By comparison, the evidence from the few studies on Fairtrade is less clear. Effect estimates are not statistically distinguishable from zero. This result for Fairtrade would suggest that higher prices are not high enough to compensate for lower yields.

Qualitative findings suggest that, in addition to the assumptions already mentioned for prices and yields, there are two key contextual factors that contribute to the variation in effects across CS and contexts. First, markets are not currently able to absorb the total volume of certified products. Thus, demand constraints act as a barrier to growth in certified farm incomes, particularly in the case of POs that have not secured selling contracts for certified products prior to harvest. When demand constraints severely limit the share of produce that can be sold through certified channels, the size of the certification rent is limited, and its distribution to large numbers of individual producers results in marginal effects.

Second, an additional contribution to farm income is more likely when communication between producers and buyers is effective, standards are properly applied and additional benefits accrue. The effect is more likely to be noticeable when trading relations are more beneficial to certified producers. This may not happen if CS do not really replace or change pre-existing trading relations. Much can happen between producers and buyers that may not be substantially altered by the introduction of certification.

4.6 Effects on wages

Turning from farmers to workers, we find that overall wages for workers engaged in certified production were 13 per cent lower than for workers working for uncertified employers (central estimate –13 per cent, range from –22 to –3 per cent) (Figure 4). Of the eight studies synthesised, all but two provide negative effect estimates. All statistically significant effects come from the four studies in Cramer et al (2014), while the pooled effect of the other studies is not statistically distinguishable from zero. Only one study was rated as having low risk of bias, whereas five were rated as moderate, and one was rated as having high risk of bias.

Wage workers are an important target for CS. The key intervention, shared by a large number of CS, is the adoption of labour standards, following either International Labour Organization conventions or more demanding requirements. The linkage between the adoption of these standards under a CS and higher wages is not supported by the available evidence, but the number of studies concerned is limited. This is one of the areas where rigorous impact evaluations are sorely needed, in order to reduce the bias towards studying the impact of certification on only farmers, especially smallholders, and overlooking wage workers.

Qualitative findings show the following critical assumptions in the causal chain between CS interventions, labour outcomes and effects on household income and social outcomes:

- All workers should be targeted (including those employed by smallholders), which often is not the case, as labour standards are commonly reported to apply only to workers employed in large-scale plantations or processing facilities.
- Labour standards must exceed national laws and be properly enforced, and this is largely dependent on each national context. Several reviewed studies reported cases in which this assumption does not hold. This highly contextual factor is outside the control of most CS, unless they succeed in interventions towards enforcing a 'living wage', as some are trying to do, or revise standards to aim for conditions over and above the minimum standards defined by law.

4.7 Effects on household income

We found no overall effect on household incomes, as results of the meta-analysis are not statistically distinguishable from zero (Figure 4). The effect estimates for individual studies range from negative to positive. Half of the studies synthesised were judged to be of moderate risk of bias, while the others were rated as having high risk of bias.

The lack of overall effect on household income may be compatible with positive effects in incomes from certified production. In the hypothesized causal chain, effects on overall household income depend on the dynamics of effects on wider farm and labour incomes. Farm incomes may include the sale of non-certified products. However, as there is only partial overlap between studies reporting on household income and those that report on income from certified production or wages, we are comparing different sets of studies and the interpretation of this causal chain should proceed with caution.

Qualitative evidence suggests a number of factors that could break the causal chain between income from certified production and total household income:

- The degree of reliance of individual households on income from certified production, which may not be substantial in some cases;
- The linkages between income from certified production and other sources of income, including off-farm employment opportunities; and
- Other external forms of support (e.g. from family or organisations).

Most studies included in this review mainly provided information on the first of those factors, suggesting that some producers depend on other sources of income. Consequently, a positive effect on certified farm income by itself is unlikely to substantially impact total household income. The causal chain between income from

certified production and labour income from certified production therefore depends on households' relative dependence on these sources of income, and on what different household members do and how they contribute to household revenues (see also Appendix B on distributional dynamics).

4.8 Effects on schooling

Effects on schooling are likely to be indirect (i.e. stemming from improvements in income and reductions in need for child labour), but there may also be more direct linkages through the community investments facilitated by premium payments in some CS, such as Fairtrade. The impact evaluation evidence suggests that children in households of certified producers receive 7 per cent more schooling overall than children in households of non-certified producers (range from 0–12 per cent) (Figure 4). The individual effects provided by included studies range from negative but not statistically significant to positive. Three of the five studies synthesised for this outcome were rated as having high risk of bias, and the other two were rated as moderate.

On the causal chain between social investments (whether funded by Fairtrade premiums or other forms of support) and education outcomes, the findings are inconclusive. The cases with positive effect estimates that are statistically distinguishable from zero are associated with Rainforest Alliance and GlobalGAP, but not Fairtrade. Even when average positive effects are found, it is not clear that the distributional effects are progressive or even neutral.

The main substance of qualitative evidence related to education and schooling referred to the role of education in self-selection, i.e. the extent to which certified farmers (especially in CS with more demanding standards, such as GlobalGAP) were able to enter these markets and obtain certification precisely because of their higher education levels.

These mixed results reflect the contradictory effects of different factors, namely, the potentially positive but unevenly distributed effects of community investments in schools, the different uses of household income according to household priorities, and the balance between potential effects of additional labour requirements on child labour and the counteracting effects of CS requirements to abolish child labour. Each of these linkages has variable impact on the supply of and demand for schooling.

4.9 Effects on other outcomes

We have the least evidence for effects on the wealth (assets) and health of producers. Overall, the number of studies for these outcomes is the most limited for all outcomes studied, and we find no overall impact, as estimated effects for both wealth and health are statistically indistinguishable from zero (Figure 4). In both cases, studies point to marginal improvements, but with large margins of error.

For wealth, we have just two studies, both of which provide positive effects. One study is rated as having high risk of bias, the other as moderate. Regarding health, effects from the two included studies pointed towards a lower incidence of illness, but neither was statistically significant. Both studies were rated as having high risk of bias.

Due to the multiplicity of contextual factors at play, the incidence of multi-certification, the proliferation of different institutions giving support to participants in CS and the self-selection of better-off producers into CS, it is difficult to establish any meaningful connection between certification and its associated interventions and improvements in health and education outcomes.

It is plausible that GAP, especially when protecting producers and workers from harmful inputs (as applied in CS such as GlobalGAP and UTZ), could have a direct impact on health, but the studies we found do not provide direct evidence on this link. It is also plausible that the premium offered in Fairtrade schemes for community investments can lead to improvements in infrastructure that improve access to health.

While these linkages remain plausible, it is remarkable that few high-quality studies have reported on such outcomes or tried to analyse the main causal mechanisms in these causal chains. For the qualitative synthesis, we were unable to identify any substantive evidence on barriers and enablers for health outcomes.

4.10 Certification scheme types

An important question is whether the type of CS matters in the impact evaluations reviewed. The synthesis concludes that there are some differences between CS and across the contexts in which each CS works. In the case of yields, for example, there are differences between CS that do not target yields (Fairtrade) and those that do (UTZ). In the case of income from certified production we also found that GlobalGAP, which targets GAP, appears to have the greatest impact.

However, although some CS do better than others for some outcomes (for more detail, see Section 4.4 in Oya et al. 2017), it is not advisable to reach a broader conclusion, in this respect, for three main reasons. First, variation remains significant even within a single CS. A CS may do well in some places or for some outcomes, but not others. Second, given the small number of studies per outcome, the impact evaluation evidence synthesised is very limited. Third, the number of CS for which we have effects for different outcomes is also limited, which reflects a bias in research towards some CS, particularly Fairtrade, while for many other CS we find no evidence at all.

The fact that the overall impacts for many outcomes (yields, household income, assets and health) are statistically indistinguishable from zero is partly the result of the diversity of studies and contexts. It is also partly due to insufficient studies collecting data for these outcomes. The qualitative evidence reviewed helps us understand variation by looking at barriers and enablers and an array of different kinds of contextual factors. Context matters, but it matters in a wide variety of ways, depending on the type of intervention, the type of causal chain and the type of setting.

The other challenge is that most included impact evaluations estimate effects from particular CS (or even bundles of certifications) on selected outcomes. As each certification typically combines a number of different interventions, in many cases it is virtually impossible to tell whether an effect suggests that a particular type of intervention is effective or not; we can only say whether being part of a CS has any impact on the outcome. Put differently, available evaluations estimate the impact of a particular certification, but this certification entails various interventions (e.g. price premium,

additional payments, training, auditing). This limits what can be said about the causal chain between a particular intervention (e.g. a price premium) and a particular outcome (e.g. household income).

From the CS included in this study, we can infer which bundles of interventions dominate. Some CS are more focused on market price interventions and PO support (e.g. Fairtrade), whereas other CS are more demanding in terms of labour standards (e.g. MPS-Socially Qualified) and some use capacity-building interventions to improve productivity (e.g. UTZ, Rainforest Alliance).

The challenge is that we also observe significant overlaps between CS in terms of the number of standards and areas they cover, making the distinctions between them increasingly blurry. The multiplication of standards per CS means that it is even harder to associate impact to specific interventions. If a CS had a clearly dominant intervention (e.g. a price premium), it would be easier to link evidence of impact (or not) of such a scheme to that intervention. The point is that this is increasingly not the case.

4.11 Role of context

Overall, the causal chains briefly discussed in previous paragraphs confirm that a multiplicity of factors shape impact, from the specific designs of interventions, to the fidelity of their implementation, and to the contextual elements that affect who benefits, when and how. The vast range of barriers, enablers and various external contextual factors are summarised in the table in Appendix B. This shows how the different barriers and contextual factors relate to aspects of implementation, distribution, unintended consequences and a range of other mediating factors. From that table, we extract some of the key highlights here.

First, a common feature is the uneven participation of economically and socially different groups of producers and workers in almost all CS, including the extent to which poorer and more vulnerable participants are harder to reach. This relates to barriers to entry for many CS, as well as the schemes' preferences for producers that are already organised in established POs, which facilitate the process of certification and auditing, especially when dealing with large numbers of scattered smallholders.

Second, certification costs are frequently mentioned as a significant barrier to entry, although there is huge variation in certification costs across CS. Even when certification costs are relatively modest, they can still act as a barrier to entry for the poorest and smallest producers, particularly if we take into account the additional investment costs required to meet standards.

Third, in cases of certification through POs, where certification rents are collectively managed (e.g. premiums for social investments), there is no systematic evidence to suggest that CS avoid or overcome local conflicts, lack of common interests, elite capture, or control and manipulation by POs' management. CS do not operate in a social, institutional and political vacuum, and radical changes in these deep-rooted dynamics are seldom triggered by the access to certification. There is a substantial body of qualitative evidence in included studies that documents this type of problem.

Finally, the effectiveness of monitoring and auditing systems, which are essential for the good functioning of CS in relation to targeting and ensuring compliance with standards, is also questioned by a body of evidence. Different issues influence their effectiveness, from resource constraints that limit the operational capacities of auditing bodies to a lack of transparency and accountability towards producers, all of which can affect compliance and the provision of appropriately tailored recommendations to improve practices.

5. Implications of the review

<i>Section highlights</i>
<ul style="list-style-type: none">• <i>Standards could be revised to concentrate on fewer outcomes and be more context specific.</i>• <i>Institutional contexts and power relations within certified networks should be explicitly taken into account.</i>• <i>Research should focus on theory-driven mixed-method evaluations with transparent reporting.</i>• <i>Attention to and reporting of context and gendered differential impacts are central to getting useful quality evidence in this area.</i>

The positive findings on prices, incomes from certified production and schooling indicate that CS can improve intermediate outcomes for direct producers. The available evidence does not show any change in outcomes further along the causal chain, such as overall household incomes, and no evidence of improvement in wages. This section discusses the implications of these findings for policy, programming and research.

5.1 Implications for policy

CS need to manage expectations derived from claims that consumers take for granted when buying certified products. Until more systematic evidence on impact is collected, ambitious claims – especially in the context of advocacy campaigns to support social sustainability standards and fair trade practices – may generate a mismatch between the expectations raised and CS participants' lived experiences, in terms of monetary benefits, working conditions and women's participation.

Voluntary standards may sometimes contribute to positive outcomes and gradually improve the position of agricultural producers and workers. However, in most settings, they require the right conditions to work. This means institutional and economic environments conducive to more agricultural dynamism, tighter labour markets through expanded job creation, more coordination of supply chains to reach socio-economic sustainability, and expanded demand for certified products. These factors relate to broader agricultural and economic policy considerations, often outside the control of CS.

Strong national support systems for farmers at the level of production and marketing are likely to contribute to the same goals in the long term. Likewise, the strength of national labour institutions and labour market conditions that enhance workers' bargaining power via dynamic labour demand are likely to be more effective than the partial application of labour standards by a segment of certified producers. It is outside the scope of this study to examine the impact of such broader policy options, but the evidence on barriers and enablers found in this review does stress the importance of many of these policy factors.

Most CS practitioners and businesses trading with certified products are aware that as we move along causal chain towards endpoint outcomes, such as producers' incomes and general well-being or empowerment, there are many contextual factors that can affect impact. Contributions from their interventions may be only marginally effective beyond the more immediate outcomes. A possible scenario is one in which CS revise

their results frameworks and focus more squarely on a more limited set of achievable intermediate results that can be made as context-specific as possible. So, if a CS is unlikely to work with certain types of farmers (e.g. very poor and small producers) or in supply chains where the potential demand for certified products is constrained, then the outreach and focus of the CS could be reconsidered.

5.2 Implications for programming

Building on the successful aspects of certification, efforts should perhaps focus on the complicated linkages between different income sources at household level, with a view towards translating better prices and higher incomes from produce sales into greater overall incomes for producers. Conversely, the finding that certification does not seem to help wage workers shows the need to improve the coverage of certification efforts with regards to wage workers across all production scales and to insist on higher labour standards than is currently the case. Effective labour standards enforcement is an important issue, but equally central are the specific labour conditions that predominate in particular settings, which require broader policy changes and economic transformations to lead to better outcomes for workers.

Much of the diversity of effects could be attributed to different contextual factors relating to the actors and organisations involved and to the specific settings and supply chains concerned. Key factors affect the causal chain between CS implementation and outcomes:

- POs and their characteristics, particularly their capabilities and capacities, as well as the power relations within these institutions;
- Relations with buyers and exporters;
- Business models linking buyers and producers (whether open spot markets, contracts or national institutions shaping the dynamics of agricultural trade and labour relations);
- Direct and indirect certification costs, which negatively affect adoption, as well as the size and availability of additional external support, which is often critical for adoption; and
- Sustained heterogeneity of participant groups and the effects of inequality on PO management, and in particular difficulties in addressing deep-rooted structures of gendered inequality.

Acting on some of the barriers could mean a revision of standards, which many CS routinely undertake. We have documented the tendency towards proliferation of standards and growing overlaps between CS in terms of what they require and cover. Perhaps the lessons are that CS could specialise more in specific niches of sustainability, reduce the number of standards and requirements per standard, and tighten monitoring and auditing to focus more on what is achievable.

This might lead to less complex bundles of interventions, which would also make evaluations more meaningful. It could also result in lower certification costs, an issue that has been frequently mentioned in the literature. In this regard, it would make sense for CS to consider the relative added value of the interventions they usually 'bundle' and be more selective.

5.3 Implications for future research

Overall, the findings suggest that CS operate with bundles of interventions whose effects on socio-economic outcomes are hard to disentangle. Studies generally focus on the status of producers or workers in the sense of being certified or not, and not on whether they received a premium or a particular training programme.

Despite the existence of so many different standards and CS, the available literature is skewed towards a certain group of well-known CS. The extent to which impact evaluations of Fairtrade certifications dominate the literature is striking. To build a more complete understanding of different causal chains for different types of CS, more research is needed on the standards and schemes that are least researched. This would also allow for more systematic comparisons across CS and more efforts to disentangle the specific contributions of intervention components in different kinds of CS.

The other key implications that arise from this review are methodological. The requirements for high-quality impact evaluations are demanding. Only in the last five or six years have we seen a substantial increase in the number of evaluations that use methods that are usually associated with adequate control for confounding factors and common biases, despite the fact that most CS have been operating since the 1990s or early 2000s. Therefore, the impact evaluation departments of CS and independent researchers alike need to catch up with the methodological demands for high-quality research in this field, and understand the methodological and logistical challenges that they may entail when conducting primary research. More rigorous impact evaluations are needed that measure outcomes for wage workers.

Furthermore, future research could focus on clearly defined interventions, rather than treating the certification status as an 'intervention'. This can be achieved through theory-based approaches, but would have to focus on selected components, rather than on the scheme as a whole. While assessing the overall impact of the bundle of interventions is clearly important, trying to disentangle the relative contributions of key components would be worth the additional effort.

Our final suggestion refers to reporting protocols. One problem faced in conducting this review was finding relevant information in the right places. It starts with abstracts, which sometimes do not even indicate that the study is based on secondary sources or entailed data collection, or what outcomes of interest are studied. Then, for both quantitative and qualitative studies, the amount of detail on methods used tends to be limited, and is often insufficient to meet some of the inclusion criteria usually applied in systematic reviews, or even to arrive at fair judgements about methodological strengths and weaknesses.

Unfortunately, the only way we can assess the foundations of research findings is by having enough information on the methods used. Authors should be encouraged to consult different options for risk of bias tools in order to anticipate possible problems of bias and correct designs accordingly. The need for better reporting of methods and the details of analyses and tests conducted does not only concern quantitative impact evaluations. Qualitative studies should also report more on critical issues such as the justification for research site selection, provide detailed descriptions of context and some information on how respondents were selected, reflect on the influence of the

researcher's position, report on any triangulation undertaken, and consider any question about external validity that may be worth considering in order to assess the wider implications of qualitative findings.

Appendix A: Summary of findings for Review Question 1*

Outcome	Effect size (standardised percentages)	Statistically different from zero?	Number of respondents**	Number of studies	Studies with high risk of bias	Studies with moderate risk of bias	Studies with low risk of bias	Standardised Mean Difference (95% CI)***
Yield	-20%	No	1,431	5	2	2	1	-0.42 (-1.23, 0.39)
Price	+14%	Yes	3,310	4	1	3	0	0.28 (0.09, 0.49)
Income from certified production	+11%	Yes	2,758	10	5	5	0	0.22 (0.03, 0.41)
Wages	-13%	Yes	44,968	8	2	5	1	-0.26 (0.46, -0.06)
Total household income	+6%	No	2,516	8	4	4	0	0.13 (-0.06, 0.32)
Assets/wealth	+3%	No	917	2	1	1	0	0.05 (-0.15, 0.26)
Illness	-7%	No	500	2	2	0	0	-0.15 (-0.32, 0.03)
Schooling	6%	Yes	45,446	5	3	2	0	0.12 (0.01, 0.24)

Notes: *Review question 1: What are the effects of certification schemes for sustainable agricultural production, and their associated interventions, on socio-economic outcomes for farmers, wage-labourers and households?

** some studies contribute to more than one outcome. Wages and schooling, for instance, both include studies that used data from more than 43,000 respondents.

*** Measures the standardised (i.e. unit-free) average difference in outcomes between CS participants and non-participants.

Appendix B: Summary of findings for Review Question 2³

Summary of findings: implementation dynamics	
Targeting and (self-)selection of participants	<p>Wealth:</p> <ul style="list-style-type: none"> ➤ Capacity of POs, producers and plantations to bear the extra costs of certified production, withstand payment delays and obtain external financial support are key in CS adoption. ➤ Production capacity, land size, household size, education and literacy skills, and degree of market integration influence participation in CS. ➤ Findings point to systematic, pre-existing differences in wealth and resources between certified producers, POs and plantations and non-certified or newcomers. <p>Gender:</p> <ul style="list-style-type: none"> ➤ Female participation in CS is undermined by difficulties in combining household work with certification-related activities, lower education and lack of skills, as well as socio-cultural norms. ➤ Women-only POs may provide a more protected environment that enhances female participation.
Certification interventions and their implementation	<p>Training, new farming practices and PO support:</p> <ul style="list-style-type: none"> ➤ Tailoring training to producers' characteristics and needs, and providing sufficient and skilled extension staff are key elements of successful training. ➤ A general lack of producers' knowledge and understanding of CS is reported. ➤ Cost of applying new practices appears to be main barrier to adoption of GAP. ➤ Certified POs tend to receive financial and technical support from a wide variety of actors, not always related to CS. <p>Pre-payment and credit:</p> <ul style="list-style-type: none"> ➤ The pre-payment standard is not always properly enforced. ➤ CS appear to lead to better access to credit for POs, producers and workers. ➤ Pre-payment and credit are often reported insufficient to cover costs of certified production. ➤ CS-related credit gains importance during crop crises when other financial entities cease to support POs and smallholders. <p>Minimum price:</p> <ul style="list-style-type: none"> ➤ The minimum price mechanism effectiveness depends on price volatility. During price slumps, it allows POs to maintain their market share and provides stability for long-term investments, but becomes irrelevant during price spikes. ➤ Oversupply of certified products affects the protection from the minimum price mechanism, as protection is related to the portion of production sold to the certified market.

³ Under what circumstances, and why, do certification schemes 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?

	<ul style="list-style-type: none"> ➤ Even when above the conventional price, the minimum price is often reported insufficient to cover costs of certified production. <p>Price premium:</p> <ul style="list-style-type: none"> ➤ Deductions in the final payment to the producer (PO administrative and certification costs, debt cancellations, price boosters) and oversupply affect the significance of the premium. ➤ The collective management of the ‘social’ premium can be undermined by local conflicts, lack of common interests, elite capture, and control and manipulation by plantations’ management. <p>Labour standards:</p> <ul style="list-style-type: none"> ➤ The effectiveness of CS labour standards is related to local legislation and the degree to which it is enforced. Strong existing legislation may cause CS standards to become obsolete, while weak legislation, subject to frequent violations, may allow CS to bring significant improvements. ➤ Overtime restrictions appear to be conflicting with the interests of workers and plantations, particularly when minimum wage is below the living wage.
Costs of certified production	<ul style="list-style-type: none"> ➤ Production under organic-social standards significantly increases the use of hired and family labour. Poorer producers may rely more on child labour. ➤ CS-related paperwork, meetings and training are also reported to significantly increase producers’ workload. ➤ Stricter quality criteria and transition from conventional to organic production can cause product losses and therefore increase the cost of production. ➤ Inspection and certification costs are reported to be significant and POs may need external financial support to deal with those.
Monitoring and audit	<ul style="list-style-type: none"> ➤ Internal monitoring systems may present opportunities, particularly for women, to acquire new skills and become actively involved in their PO. ➤ Auditing bodies are reported to lack transparency and accountability towards producers and to be limited in grasping producers’ reality and in making appropriate recommendations.
Spill-over and unintended CS effects	<ul style="list-style-type: none"> ➤ CS appear to have an upward influence on local crop prices. ➤ Spill-over effects are reported on the adoption of GAP by non-certified producers. ➤ Increased requirements in labour of organic-social standards may increase demand in the local agricultural labour market. ➤ CS also create demand for more ‘skilled’ employment (e.g. auditors, extension staff and trainers). ➤ Certification-related documentation is reported to be used to settle land disputes or to create ‘de facto’ property.
Multiple certification	<ul style="list-style-type: none"> ➤ Overlaps between different standards can influence their effectiveness, both positively and negatively. ➤ Dual Fairtrade-organic appears the most widespread combination. Although organic certification is often required to access Fairtrade markets, particularly for coffee, increased costs of organic certification can be a barrier to Fairtrade adoption.

Summary of findings: distributional dynamics

Wealth	<ul style="list-style-type: none"> ➤ The term 'small' producer can be problematic, as it does not recognise that POs' membership base can be heterogeneous in terms of farm size. ➤ Larger producers may benefit more from CS, as premiums are linked to volumes and more likely to comply with stricter quality criteria, and may dominate the POs' decision-making. But mutually beneficial relationships between larger and smaller producers are also reported, as larger producers allow POs to reach the required efficiencies of scale.
Gender	<ul style="list-style-type: none"> ➤ Female contributions in certified production tends to remain invisible, as female producers often lack the assets to register as PO members. ➤ CS are related to a gendered increase in workload, which disproportionately affects female producers without an even distribution of benefits. ➤ Weak female participation is commonly reported in decision-making related to PO management and premium use, as well as in supervisory/management positions in certified plantations. ➤ Gender pay discrimination in certified plantations appears to persist despite certification presence. ➤ The effectiveness of joint boards as a mechanism of empowerment for female workers is questioned by several authors.
Wage workers	<ul style="list-style-type: none"> ➤ Workers hired by small producers tend to remain invisible in CS and receive no, or very few, benefits. ➤ In plantations, temporary workers, as well as migrant and racially discriminated workers, are reported to receive fewer benefits than their co-workers.

Summary of findings - Contextual barriers and enablers

Characteristics of POs, producers and plantations	<p>PO context: management, relationships with producer and with buyers</p> <ul style="list-style-type: none"> ➤ POs' strengths and weaknesses directly affect the effectiveness of CS. ➤ Cases of PO mismanagement and corruption appear to be recurrent, affecting producers' participation in CS and the resulting benefits. ➤ Producers' ability to understand CS and hold their POs accountable is key in CS effectiveness. ➤ Transparency in management and transactions, good credit schemes and extension support are key in enhancing members' loyalty and participation. ➤ PO size appears to matter, however, in very context-specific ways. Small PO size improves accountability, but limits access to export markets. Large PO size allows better access to export markets, but losses in service quality and alienation between PO management and membership base are a risk. ➤ Externally imposed POs are more vulnerable to corruption and have weaker links with their members, whereas POs formed on producers' initiative and efforts have more and better-quality member participation. ➤ Producers' propensity to collaborate, high self-confidence and low risk-aversion, and higher education influence CS effectiveness.
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	<ul style="list-style-type: none"> ➤ Long-lasting relations, direct and frequent contact, and communication between PO and buyer contribute to CS effectiveness. ➤ Engaged buyers may skip CS and offer direct benefits tailored to producers through personalised, non-certified channels, if CS are not deemed effective. <p>Plantations: management and workers' committees</p> <ul style="list-style-type: none"> ➤ Plantation management's commitment to good social and environmental practices, as well as workers' knowledge of their rights and obligations and of CS mechanisms, can enhance CS effectiveness. ➤ Workers' committees, or joint bodies, are reported to have limited decision-making power and capacity to act, and may be vulnerable to management manipulation.
Markets	<ul style="list-style-type: none"> ➤ CS are reported to improve access to export markets. ➤ Oversupply of certified products is a common challenge, particularly for Fairtrade, as an important part of certified crops end up in the conventional market. Guaranteed markets as part of a certification initiative are suggested to avoid oversupply. ➤ Intermediaries continue to play an important role for certified farmers, as they pay directly upon delivery, can offer advanced payments, purchase at the farm gate and have lower criteria for quality.
Context	<ul style="list-style-type: none"> ➤ Local institutions and politics may hinder or enhance PO formation and performance, and hence CS effectiveness. ➤ Market liberalisation, disintegration of regulating agencies and lack of national quality standards leave a void that CS can fill, to the benefit of producers. In contrast, democratic structures, ability to hold governments accountable and strong state regulation policies may limit the role that CS can play. ➤ Local power imbalances can affect CS effectiveness and point to tailoring standards to the local context instead of applying a 'one size fits all' rule. ➤ CS benefits appear to be more valued in contexts of increased social insecurity and violence.

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