



*Women farmers in Gowa district hand-pick coffee cherries in their garden. Harvest season usually falls on April until May.*

*Photo credit: Yusuf Ahmad/World Agroforestry*



# Eco-certified Coffee Agroforestry in Indonesia: Reconciling Conflicting Goals?

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## Highlights:

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- Certification aims to restore consumer trust in value chains, addressing social and environmental issues of public concern.
- Indonesian policies support coffee farmers to follow ‘good agricultural practice’ to increase global market access, expecting its standards to gain global recognition.
- Cost-benefit evaluation of certification requires accounting stands of producers, processors/ traders, governments of exporting countries, certifiers, consumers and global citizens.
- Farmers’ preferences regarding eco-certification in Indonesia are primarily economically driven, as it is weakly institutionalised in the farmer’s context.
- Eco-certification schemes have increased the quality of smallholder produced coffee, indirectly improving the economic performance.

## 1. Introduction

Global supply chains are undergoing rapid transformations that change the way food is produced in developing countries and traded across the world. In recent years, there has been a proliferation of different certification schemes that require farmers to adopt certain production and quality standards in order for them to gain access to international markets for higher-value products. Such certification schemes (e.g. Fairtrade, Organic and others) are founded on ethical codes that try to address the social and economic conditions of farmers as well as contribute to environmental sustainability. However, there is still an ongoing debate on

whether farmers in producing countries like Indonesia actually benefit. This chapter explores coffee eco-certification schemes in Indonesia and, in particular, does a cost-benefit assessment of local standards across the coffee certification value chain.

The superseding chapter on “Cocoa and coffee in Asia: contrasts and similarities in production and value addition” (*Chapter 26*) touches briefly on the experience with various eco-certification schemes that operate globally and connect issues at the primary production level, wherever on the globe, to concerns of consumers. Indonesia has not been a front runner in these schemes (many of which originate in Central and South America), but several schemes are operational, and experience with them has been mixed. This chapter summarises a number of recent studies on coffee certification in Indonesia, anticipating that it provides relevant material for comparisons with African countries where these same schemes operate, but maybe still in earlier stages or with partial coverage. The chapter starts with a perspective on why and how these schemes have emerged in the first place.

Certification of compliance with standards is relevant where trust by end-consumers is at stake (Mithöfer et al 2017). It can form an assurance, beyond the direct quality of the product, that the production process has avoided negative social and/or environmental impacts that have become a public concern but may not yet be sufficiently regulated and enforced in common practice. Beyond certification against global standards, there currently are alternatives to achieving certification via geographic branding of unique identities and locally declared social plus environmental standards. A focus on what problems certification is supposed to solve for whom may imply lower expectations for direct farmer benefits or poverty alleviation. Certification can implicitly communicate that blame for existing problems is shifted to non-certified ‘others’ but can also contribute to generic solutions and acceptance of the good practice in farming, processing and the whole subsequent value chain (Mithöfer et al 2017, Leimona et al 2018).

There has been significant debate on the ‘impacts’ of such certification schemes, mostly with a focus on whether or not participating farmers are better off than non-participating ones or whether environmental impacts of certified farms differ from those that are non-certified. A challenge to such studies is that certification cannot be expected to be randomly applied, and certification schemes may (initially) select farmers who met the standards anyway. There has been less focus on the underlying questions of when, where and how the certification as a process emerged.

Indonesia, a historic leader in coffee exports, currently ranks fourth, after Brazil, Vietnam and Columbia, while being the number two producer of Robusta coffee (after Vietnam). Indonesia, with more than 17 thousand islands and high biodiversity values, may well represent the largest diversity in coffee-producing landscapes. Yet, the country has been relatively slow

in participating in the various certification schemes for social and/or environmental aspects of its coffee production. A reason could be that there have not been major scandals or high-profile publications that threaten the global marketing of Indonesia's coffee and, as such, led to the emergence of locally attuned certification schemes. Actually, one of the early 'fair trade' schemes used the name 'Havelaar' that refers to a 19<sup>th</sup>-century scandal that called attention to the plight of poor coffee producers, forced to cultivate this crop in a colonial economy (Salverda 2005); but Havelaar coffee did not get a foothold in Indonesia.

In this chapter, we will synthesise a number of recent case studies on coffee certification in Indonesia (Ibnu et al 2015, 2018, Astuti et al 2015, Arifin 2021) to better understand the process of how smallholder coffee farmers view the eco-certification based on their daily practices, social-economic relations with other stakeholders and their institutional contexts in the overall global value chains (Bitzer and Glasbergen 2015, Glasbergen 2018). Our specific targets are to:

- 1 Examine the interrelations between coffee eco-certifications and smallholder livelihoods in Sumatra, Indonesia, and
- 2 Evaluate the cost-benefit accounting scheme of certification from the perspectives of producers, processors/traders, governments of exporting countries, certifiers, consumers and global citizens.

## 2. Diversity of coffee certification schemes

Coffee eco-certification at the global level generally deals with sustainability standards and environmental governance (Arifin 2010, Neilson 2018). Fairtrade certification specifically focused on social issues, developed in parallel with eco-certification standards with an environmental focus such as organic and shade-grown or bird-friendly schemes. Over time, more inclusive and broader schemes that incorporate social, environmental, as well as economic perspectives emerged (Glasbergen and Schouten 2015). A synthesis of case studies of coffee certification from developing countries (DeFries et al 2017) suggested positive effects across the board, albeit in various ways such as income, demand-side market creation, supply-side production efficiency and quality improvement. Analysis disaggregated by certification schemes in Uganda found that one certification scheme contributed to the significant improvement in household living standards, while others did not (Chiputwa et al 2015).

Arabica coffee is produced in mountain ranges and on volcanic slopes in Sumatra, Java, Sulawesi, Bali and Nusa Tenggara, and the eastern island of Papua. Robusta coffee is mostly derived from areas below 800 meters above sea level in the southern half of Sumatra and East Java. Both Robusta and Arabica coffee farmers generally harvest, pulp, ferment, wash, and dry

*Table 25.1: Comparison of six standards of coffee eco-certification adopted in Indonesia*

	Organic-IFOAM (since 2012 INOFICE in Indonesia)	Rainforest Alliance (RFA)	Fair Trade (FLO)	UTZ (became part of REA in 2018)	CAFÉ	4C Association
<b>Start (year)</b>	1972	1993	1997	2002	2004	2006
<b>Main focus</b>	Sustainability & social change	Sustainability	Fairness	Sustainability	Responsible sourcing	Sustainability
<b>Standards</b>	Global and local (sometimes set by government)	Minimum compliance threshold	Minimum and progress standard	Minimum threshold Good Inside Portal	Score cards (with 74 indicators)	Baseline, product- specific standards, towards compliance
<b>Verification</b>	Third-party auditors	Local auditors	Flo-Cert, third party auditors	Third-party auditors	SCS (Scientific Certif. System)	Accredited third party auditors
<b>Key aspects</b>	Organic standard	Sustainable resource management	Labour, livelihood and participation	Sustainable farming	Production and quality manage	Sustainable coffee practices
<b>Pricing system</b>	Market price	Market Price	Minimum Floor Price	Market price	Market price + Perform Premium	Market price + perform premium
<b>Premium</b>	Not specific	Quality Premium	FLO Premium	UTZ Premium	Quality Premium	Quality Premium
<b>Credit Financing</b>	Attached to some government programs	Through local banks	Pre-finance (up to 50% value)	Not specific for coffee (mass balance cocoa)	Farmer loan fund	Not specific
<b>Technical assistance/ Capacity building</b>	Training, assisting organic development	Through sustainable agriculture network	Local farmers' organisation	Local farmers' organisation	Good agricultural practices (GAP)	Local farmers' organisation
<b>Community outreach</b>	Facilitating production and trade	Linkage with input suppliers & labourers	Premium use for community program	Partnering with NGOs and businesses	Projects in coffee community	Partnering with NGOs and businesses
<b>Regions of operation</b>	Aceh, Lampung, South Sulawesi	Aceh, Lampung, South Sumatra	Aceh	Lampung, Aceh	Aceh, N. Sumatra, South Sulawesi	Lampung, South Sumatra
<b>Coffee Majority</b>	Arabica, Robusta	Robusta, Arabica	Arabica, Robusta	Robusta, Arabica	Arabica	Robusta

Sources: Compiled from several sources: Ruben and Zuniga (2011), Potts et al (2014), from field observations by the authors (2013-2016) and from the websites of eco-certification, such as <http://www.flo-cert.net>, <http://inofice.com/>, <http://www.utzcertified.org>, <http://www.starbucks.com>, <http://www.4c-coffeeassociation.org>, <http://www.rainforest-alliance.org>, <https://www.rainforest-alliance.org/utz/>

the beans at their farms, before selling to traders who grade and sell to domestic and/or world markets. Coffee eco-certification in Indonesia started in the early 1990s, although at a very limited scale, about a decade after Northern coffee buyers adopted such schemes, mostly for produce from Central and South America. Sumatra produces more than 70% of Indonesia's coffee. Production in the provinces of Lampung, Sumatra and Bengkulu accounts for the largest share (49% combined, mostly marketed through the port in Lampung), followed by North Sumatra, Aceh and West Sumatra (21% combined, mostly marketed through Medan). Coffee production in Java contributes 14%, with the port of Surabaya also connecting produce from Bali, Sulawesi and adjacent islands to global markets (Arifin 2021). Coffee certification schemes in Indonesia differ in scope and history (Table 25.1). For Indonesia, coffee is generally acknowledged as the pioneering industry for sustainability standards and certifications, followed by palm oil, cocoa, tea, and others (Reinecke and van Hage 2012).

In addition to Northern-based eco-certification schemes, Indonesia has also developed local-based certification schemes, such as INOFICE, which certifies coffee and agricultural products based on Indonesian National Standard (SNI) of organic criteria (since 2012 as member of IFOAM (International Federation of Organic Agriculture Movements)), geographical indication (GI), and newly developed ISCoffee (Indonesian Standard Coffee). The GI certificates are generally associated with well-defined geographical identities, thereby providing assurance to consumers that the products are native and specific to a region. Potential barriers in the implementation of ISCoffee include the limited direct contact between traders and coffee farmers due to the strong roles of middlemen (Ibnu 2017).

### **3. Agroforestry roots of eco-certification**

Before the wide adoption of agroforestry in the 1990s, the expansion of coffee on steep slopes in Sumatra through migrant labour (often with local investors in the background) was often the major issue in terms of biodiversity conservation and watershed integrity. The migrant farmers lacked tenure security and were likely to stay with production systems geared to short-term returns, hoping they could avoid eviction before the first major harvest in year 4, rather than going for the more diversified systems that were actually superior in economic evaluations (as well as environmental ones), if the low discount rates of secure tenure were used (Budidarsono et al 2000, Gillison et al 2004). Where coffee farmers encroached into national parks after these have been established (there are also cases where the park was established after settlement, requiring a different type of policy response), environmental damage and rural poverty (driving migration) coincided – but the primary strategy for conservation must be to make such illegal farms less profitable (by increasing effectiveness of patrolling, e.g. involving more of the legal park neighbours in the effort), along with efforts to support sustainable land use

surrounding the park. The basic need for certification is a ‘legality’ test – but with coffee bags easily transported at night and most control systems open to under-the-table payments, this is no easy task.

The adoption of agroforestry systems by smallholder farmers was supported in conjunction with a government program on community-based forestry management (HKm). The presence of shade trees and MPTS is among the most important requirements to qualify as a legal recipient of HKm user-rights, in addition to rules and responsibilities of farmers’ groups and other related institutional arrangements to secure the user-rights (van Noordwijk et al 2002, Arifin 2021). When eco-certification schemes were introduced in the 1990s, these coffee agroforestry adopters were among the first groups joining the certification programs, particularly those whose land status is clear and clean, not conflicting with protected forests and the national parks. They expected to gain recognition and higher prices without change in their practices.

In a survey of 408 farmers in Tanggamus (Lampung Province), agroforestry adopters had 1,834 coffee trees per hectare plus 346 other trees, and non-adopters had 1,776 coffee trees per hectare with only 49 other trees. About half the farmers had achieved eco-certification (mostly 4C and some RFA, with more stringent certification criteria), while the others were in the process of adoption. Farm income analysis showed significant differences between agroforestry adopters and non-adopters (regardless of certification). The benefit to cost (B/C) ratio was 6.92 for agroforestry adopters and 5.76 for non-adopters. The price premium on high-quality coffee or the beans that meet the quality standards set by the coffee buyers has made a difference in the economic performance of farm-household joining sustainability certification, as have revenues from multipurpose trees and from other crops. The HKm scheme required farmers to establish farmers’ groups, not only serving administrative purposes but also to develop institutional arrangements and solid organisations for the purpose of sustainable resources management (Arifin 2010, Neilson et al 2018).

## 4. Farmer preferences on eco-certification

Our studies (Arifin 2021) showed that smallholder coffee farmers in the different groups did not differ much in terms of their preferences in adopting eco-certifications. Smallholders’ preferences were comparable across the groups of 4C, RFA, UTZ, INOFICE (Local Organic) and non-certification. The average number of years of education of coffee farmers was 8.5 years, but more than 70% of coffee farmers had not completed high school education. Although the smallholder farmers have been cultivating coffee for an average of 15 years, they were relatively new participants in the certification programs, with on average only 2.3 years of participation at a time of data collection. Interestingly, coffee farmers who owned larger farms and were less dependent on non-coffee income were likely to join a certification program.

Coffee farmers were asked eight attributes of (stated) preferences of eco-certification (Ibnu 2017) and the number of levels as follows: (1) Price premium (Yes or No); (2) Certification target (Smallholders or Large estates); (3) Environmental focus (Conservation, Soil fertility or Organic input); (4) Marketing schemes (Contract with buyers or No); (5) Important goal (Fairness or Sustainability); (6) Credit options (Yes pre-finance or Cash only); (7) Price differential between certified and non-certified coffee (Yes or No); and (8) Price differential based on the coffee bean sizes (Yes or No). The results of the conjoint analysis reveal that the most important attribute in the overall farmer preferences is the 'Price premium' with a relative importance of 21.9%, followed by 'Environmental focus' (14.1%) and 'Price differential between certified and uncertified coffee' (13.1%).

## 5. Governance of coffee value chains

Farm-level certification does not mean that all coffee is sold in certified channels and vice versa. In a study of Arabica coffee value chains in Aceh (Astuti et al 2015), more than half of the certified Arabica coffee was actually marketed to collector traders of certified coffee (simplified as 'certified traders') and the rest to collector traders of non-certified coffee (simplified as 'conventional traders'). Certified coffee was sold to conventional traders when farmers need direct cash payments. Certified traders also received non-certified coffee to meet minimum requirements set by certified exporters. Both certified traders and conventional traders sometimes also serve as a mixed channel in this coffee value chain as these traders also obtain coffee across the groups. The certified Arabica coffee beans are then sold to exporters either directly (75%) or through cooperatives and KUBE. Some cooperatives in Aceh are selling the certified coffee (about 10%) directly to the international markets, especially those that have historical trading partners, before the introduction of eco-certification. Only small parts of certified coffee are marketed to domestic coffee roasters and domestic markets.

Domestic coffee roasters and domestic markets play very important roles in shaping the Robusta coffee value chains. Exporters of Robusta coffee have obtained significantly higher profits in trading certified coffee, whereas for Arabica exporters, differences were not statistically significant, probably because the sample size was small. Certification schemes have led to increasing coffee quality produced by smallholder farmers so that such procedures and practices of certifications have indirectly improved the quality of economic performance of smallholder farmers. The low bargaining power of farmers relative to other actors in the coffee value chain did not change much by joining certification schemes (Astuti et al 2015).



Farmers' groups or cooperatives were in a part of the landscapes just set up for the sake of matching the traceability requirement of certification. Capacity development and institutional empowerment for these groups are generally very difficult. Experience of top-down formation of rural cooperatives and poor images on rural cooperatives during President Soeharto have become serious challenges in bridging between global initiatives and local interests. Although most farmers are well-aware of the need to improve the quality, increase market access, price transparency and fairness, any efforts to empower farmers through several groups or associations must be handled with extra care.

## 6. Cross-scale benefits and costs of eco-certification

A minimum condition for eco-certification to emerge and survive is that it is at least neutral in overall benefits minus costs for six main stakeholders: producers (smallholder farmers), processors/traders, governments of exporting countries, certifiers, consumers and global citizens. The standards and eco-certification will remain contested unless all groups perceive net benefits from their accounting stance. Table 25.2 presents a matrix consisting of several cells of benefits and costs, which are synthesised from case studies of coffee eco-certification in Lampung and Aceh and from other relevant cases available in the literature.

**Table 25.2:** Elements of a cost-benefit evaluation of the issue cycle in which new standards and certification form a response to the loss of trust that follows from issues in public discourse

	Producers	Processors, transporters and intermediaries	Government (exporting)	Certifiers	Consumers	Global citizens
Benefits	B1. Restored (regained) trust			B8. Jobs, profits	B10. Trustable choice for ethical consumption and poverty reduction	B12. Reduced severity of relevant issues
	B2. Increased (recovered) market share, enhanced competition amongst buyers in the early stages of certification schemes			B9. Business opportunity	B11. Social profiling to peers	
	B3. Learning improved practice	B6. Technical quality standards as co-benefit	B7. National reputation restored			
	B4. Compliance with (local) government expectations					
	B5. Share in premium price exceeding additional costs					

	Producers	Processors, transporters and intermediaries	Government (exporting)	Certifiers	Consumers	Global citizens
Costs	C1. Investment to improve practice and modify production systems		C7. The challenge to 'sovereignty'	C8. Risks to reputation if issues re-emerge	C9. Premium price	C11. Reduced attention to structural solutions for primary issues
	C2. Investment to document practice				C10. Uncertainty on brand trustability and doubts that benefits reach those intended	
	C3. Transaction costs to interact with certifiers					
	C4. Reduced yield	C6. Higher costs for processing and traceability				C12. Further expansion elsewhere if yields are reduced
	C5. Reduced local expansion and constrained innovation options					

## 6.1. From a producer perspective

From a smallholder farmer accounting stance, the recurrent costs of participation in certifications schemes can consist of increased labour demand (C1) and reduced yield (C4), while especially at the start transaction costs with certifiers (C3) and investments in documenting legality and existing practice (C2) take time. In the longer term, reduced expansion and constrained innovation (C5) play a role. On the positive side, these costs can be outweighed by exposure to improved practices leading to higher productivity (B3), improved relations with (local) government entities and associated benefits (B4) and increased market share and (potentially) enhanced competition amongst buyers if demand for certified products exceeds supply (B2). The primary attraction, however, is expectations of a price premium for higher quality products and/or as direct recognition for the certification (B5). In specific cases where 'issues' became hot, regained trust (B1) can play a role (beyond B4). Whether or not the net balance can be positive depends on local context and existing constraints.

Much of the early literature on these costs and benefits was based on coffee producers in Latin America (for example, Bacon 2005, Barham et al 2011, Beuchelt and Zeller 2011, Ruben and Fort 2012, Utting-Chamorro 2005, Valkila 2009), but there now is an emerging body of evidence from Africa (for example, Chiputwa and Qaim 2016, Jena et al 2012, Meemken et al 2017).

The surveys of smallholder coffee farmers in Lampung (Astuti et al 2015) demonstrated a lack of capital and cash money to afford adequate production inputs and modern technology such as fertilisers and pesticides. Poor Robusta coffee farmers in Tanggamus and West Lampung

also experience a lack of family labour as they cannot pay hired labour, especially during land preparation and harvest times. Non-selective picking of coffee fruits (petik asalan), including unripe (green) and ripe (red) cherries is common in Lampung, with a negative effect on product quality. Selected picking of red cherry or delaying strip picking when more fruits have ripened requires more labour and reduces labour productivity (in terms of quantity per day). Yet, improved harvest practice is very important to achieving the product quality required for any of the certification schemes.

Issues for smallholder coffee production systems in the context of the global value chain include low productivity, low quality of coffee beans and low bargaining positions relative to traders, coffee roasters and exporters. Coffee smallholders in many parts of Indonesia lack land tenure security and face pressures of land degradation. The image of coffee is negatively affected by publicity on encroachment of protection forests and national parks, especially the Leuser ecosystem in Aceh and the Bukit Barisan Selatan (BBS) National Park in Lampung. Encroachment by migrant farmers into national parks has been a major issue, especially in Lampung on the southern edge of Sumatra (Philpott et al 2008), with past episodes of high world market prices linked to successive waves of influx (Verbist et al 2005). Certification may, first of all, prove the legality and escape a negative image, rather than benefitting from a positive incentive system. Roaster companies and coffee exporters usually pay the certification costs and membership fees to become part of global initiatives and avoid negative press. Although coffee yields are higher in the proximity of forests that provide nesting sites for bees that provide pollination services, the economic value of converting that forest exceeds the economic gain in form coffee yields (Olschewski et al 2006).

Case studies of ‘relationship coffee’ in Sulawesi, Bali and Java (Vicol et al 2018) concluded that benefits from value chain upgrading interventions by application of ‘good agricultural practice’ did not primarily benefit the otherwise marginalised rural communities. As benefits were captured by key individuals within the producer community who are able to accumulate wealth and consolidate their social position.

In some cases, smallholder farmers joining certification schemes also continue to sell their beans to conventional traders as these traders directly pay their beans in cash. These traders also provide advance loans to cover production costs, using their right to purchase a specific volume of coffee beans in the future as the basis. High dependence on collector traders means that the bargaining position of coffee farmers is very weak. Coffee farmers tend to maintain such relationships with collector traders for ‘social capital’ reasons beyond economic rationality, relating to trust and socio-psychological factors. Local traders do not care about certification. They buy coffee from coffee farmers everywhere, including those who cultivate coffee in protected forest areas. Farmers who cultivate coffee in the forest areas are allowed

by the government with an extendable contract system, but they are not able to participate in private certification. Hence, in the future, there will likely always be a substantial share of uncertified coffee farmers.

## **6.2. From a processor/trader perspective**

Global coffee traders play important roles in the value chain of coffee eco-certification in Sumatra, in particular, Lampung and Aceh. Beyond the costs and benefits for farmers, certification involves, from a processor/trade perspective, higher costs for processing and traceability (C6), but may have co-benefits (B6) for easier adherence to technical quality standards. Apart from the specific requirements for speciality and eco-certified coffee, the value chain for coffee in Indonesia consists of collector-traders at the village level, selling to larger traders at sub-district and district level, to be marketed to coffee exporters or local roasters. Market structures tend towards oligopsony, where collector traders have stronger market power in determining the farm gate price, although coffee quality influences the market-clearing price. Collector traders and middlemen sometimes conduct sorting and grading activities to set aside coffee beans that do not meet higher quality standards. These traders are also facing a weak bargaining position before the larger traders and coffee exporters, where the market structure tends to be an oligopsony or sometimes monopsony. Certification generally involves a shift in traders, with winners and losers at the local level. Roles of local middlemen as providers of credit are often seen as exploitative but can be deeply rooted in social structures and not easily replaced.

Exporters that are affiliated directly with global roasting companies face simpler procedures with less space for negotiations. Under the coffee certification system, targeting speciality coffee markets, global coffee buyers and foreign companies usually establish subsidiary trading and roasting companies in coffee producing regions in Indonesia. Certification costs are generally considerable so that local coffee traders are reluctant to pay these costs and maintain memberships. Coffee traders affiliated with global coffee buyers generally take care of certification costs, which either transmits the costs to smallholder farmers or to consumers and retail coffee markets. If the local-based traders and global affiliated coffee traders are competing fairly, the farm gate price of coffee shall be high enough to provide adequate economic rents for smallholder farmers (Daviron and Vagneron 2011). Otherwise, smallholder farmers could be trapped in an inter-locking coffee value chain system either to local coffee traders or global affiliated coffee traders operated in rural areas of coffee-producing regions in Indonesia.

There are no official statistics on coffee eco-certification in Indonesia as part of exports. An estimated 10-15% of the total 400 thousand tons of coffee was exported under the five major certification schemes. These global coffee traders and coffee roasters generally buy coffee from local traders in two ways: (1) simple open buying, (2) contract buying from farmer groups affiliated with eco-certification schemes. Both become the focus of attention of our analysis as they are significantly affecting the performance and market structure of global value chains in Indonesia. Nevertheless, one should note that these global coffee traders and roasters might also buy conventionally certified high-quality coffee beans, or beans that are not certified according to the major coffee eco-certification schemes.

### **6.3. From an exporting country perspective**

At the global trade level, coffee exporters are trying to obtain a fairer price from their overseas' partners. They may see the meddling with production standards as a breach of their sovereignty as regulators (C7) but may see benefits in increased market access and premium prices (B7). Indonesian coffee is mostly exported to Germany, Japan and the United States. However, increasing domestic demand due to growing coffee retails and café industries in big cities and changing lifestyles or urban population has been somehow affecting the coffee trade. Nevertheless, the global demand for high-quality coffee tends to increase in recent years, which has resulted in a rapid increase in the development of speciality coffee, such as Mandailing, Toraja/ Kalosi, Gayo, Lintong and Bali Kintamani coffee. These speciality coffee brands are from typical Arabica highlands, and more recently, have been associated with eco-certifications. Generally, the international price of Arabica coffee is relatively higher than that of Robusta. At the time of writing in May of 2018, the international price of Robusta was US\$ 1.96 per kilogram, a significant decrease from US\$ 2.23 per kilogram in May of 2017. Whereas the price of Arabica was US\$ 2.99 per kilogram, which was also a decrease from US\$ 3.30 per kilogram in May of 2017 (Commodity Prospects of the World Bank 2018). Some government initiatives to develop Arabica coffee are, however, not quite successful, mostly because of agronomic and other technical requirements. The government and coffee stakeholders are now developing Robusta specialities, starting from Lampung Specialty, Semendo, Washed Java, Flores and Papua Coffee. These typically have a full body and relatively low acidity. Each region is known for a typical cupping profile, although there is a great deal of diversity within each region. Such new initiatives and eco-certification shall contribute to the improvement of price premium and farm-gate price received by smallholder farmers.

## 6.4. From a certifier perspective

Certification does provide employment (B8), business opportunities and income streams (B9) for those involved in the process. Coffee eco-certification started in Indonesia in 1992 with *Gayo Mountain Organic Coffee* from the Takengon region of Central Aceh, followed by organic coffee cooperatives in East Timor, Utz Certified coffee in Aceh, Lampung, East Java, and in Sulawesi, and the Starbucks CAFÉ Practices scheme being introduced to suppliers in North Sumatra, Aceh and Toraja South Sulawesi (Mawardi 2014).

Certification standards encourage more sustainable land management practices in Aceh, Toraja, and Bali, where organic, low input, and shade-grown practices have been adopted by coffee farmers. After some years, the coffee eco-certification had somehow affected the price structure of coffee, where traders tend to be more open in explaining price information to the farmers. Collector traders selling the organic “certified” coffee to exporters could receive a higher price, compared to non-certified Arabica coffee, because of a rather direct link with the international coffee speciality market. Due to the cost of the traceability systems needed to ensure the integrity of the ‘organic’ branding, the farm-gate price premium received by Arabica farmers was small (Arifin 2021).

Standards that relate to the expansion of coffee production may be more difficult to enforce than those that relate to existing, on-farm production, as it relates to heavier coordinating efforts among stakeholders. The amount of coffee illegally harvested from the Bukit Barisan Selatan national park in Lampung is only a small percentage of the total for the province, but coffee expansion is a major threat to the park, and its publicity is a major issue for all coffee from the province. Existing standards are not water-tight in preventing illegal coffee from entering certified trading streams, risking trust in the certification scheme (C8).

## 6.5. From a consumer perspective

The buyer of certified coffee may experience the “warm-glow” effect that comes with making a voluntary donation (see for e.g., Elfenbein and McManus 2010), but can also expect an above-average technical quality of the product (B10), and gains in social standing in his or her direct environment (B11), justifying the price premium paid. CAFÉ, the Starbucks standard scheme, does not mention environmental governance as such but encourages natural resource conservation. The certification of Organic, RFA, FLO and Utz have a sustainability focus on environmental governance, covering a wide range of environmental conservation and biodiversity issues. The 4C scheme advocates the conservation of water, soil, and biodiversity, although its implementation in the field is not as simple as it is written. In terms of market

access and networking, CAFÉ certification tends to serve as a single buyer and has market power of monopsony, while the other five certification schemes also have a limited number of buyers and might have an oligopsony market power.

In industrialised countries, some evidence shows a substantial consumer's support for coffee eco-certification (C9), although a segment of price-sensitive consumers will not pay a large premium for the Fair-Trade label (Hainmuller et al 2014). Coffee consumers are only willing to pay a price increase of 1.1% for Fair Trade Certification (Carlson 2010), noting that demand for higher coffee is inelastic, which could be associated with brand loyalty and preferential tastes. Interestingly, the demand for lower price coffee is more elastic, where a 9% increase in retail price leads to a 30% decline, as buyers switch to low-price unlabeled alternatives. The suggestion has been made (Jongenburger 2016) that coffee roasters and retailers use consumer preference for certified coffee to differentiate their product, increasing mostly their own profits. Beyond 'willingness to pay' studies and recorded elasticities, there have been relatively few studies unpacking the motivation of buyers of certified coffee; a sense of responsibility for one's own actions is linked to concerns over global security (Jongenburger 2016). Trust whether (specific forms of) certification achieves its goals is critical (C10), but dependent on incomplete information (50). Competition between multiple certification schemes may undermine the trust in any of them.

## **6.6. From a global citizen perspective**

Global citizens, even if they do not involve in buying certified products, may benefit (as 'free riders') if the severity of global environmental and social issues is reduced (B12). However, it is possible that all attention given to certification of the parts of the sector that weren't causing problems deflects attention from solutions to the primary issues (C11) (Mithöfer et al 2017). It could also be that reductions in physical yield due to 'more environment-friendly' production systems that can get certified induce a further expansion and opening up of remaining forest areas elsewhere. This potential cost (C12) is the equivalent of 'leakage' in the climate change mitigation debate and requires sector-wide accountability rather than rules that focus on the certification of specific producers.

## **7. Geographical indication as a way forward?**

A new mediated partnership model for sustainable coffee production in Indonesia (Wijaya et al 2017) starts from bottom-up agricultural development of practices of smallholders, focuses on the economic interests of farmers and connects to global sustainability certification. For applications in Bali, Flores and Java, they identified several critical factors that need to be

addressed, rather than concluding that this approach can be easily scaled. Experience in Indonesia with ‘Geographical indications’ as an alternative to certification of individual farmers is growing rapidly (Neilson et al 2018). In contrast to the generally positive experience with this approach in India (Mithöfer et al 2017), the efforts in Indonesia were found not to provide tangible economic benefits to producers. They conclude that the inability to capture value is due to the poor alignment of the local institutional environment with lead firm strategies so that further technical support is unlikely to achieve value capture.

Rather than by the economic rationality of Econs<sup>1</sup> (Thaler and Sunstein 2009, van Noordwijk et al 2012), human behaviour can be understood as that of ‘social first, intelligent later’ agents driven by groups, rituals, affiliation, status, and power (Hofstede 2017). Therefore, economic rationality or logical reasoning do not suffice when it comes to social intelligence. Where certification is trying to restore trust between consumers and producers, the social and cultural gaps between basic values on two ends of the value chain can be a constraint. Major consumer countries of coffee are high on the ‘self-expression’ and ‘secular-rational’ scales, as quantified in World Value Survey (Inglehart et al 2014), while coffee production is mostly in countries that are in ‘survival’ and ‘traditional’ or ‘hierarchical’ modes. According to the analysis of these data (Minkov and Hofstede 2012), contrasts in ‘Long- versus Short-Term Orientation’ and the individualism-collectivism axis is key dimensions in global value systems that can affect the way (economic) value chains function. Certification indeed relates to all five elements of the ‘Groups, Rituals, Affiliation, Status, Power’ list. It can be seen as a confirmation that power and status are primarily at the consumer end of the value chain, requiring producers to prove affiliation by adherence to ‘rituals’, identified as ‘good agricultural practice’, even though there is no guarantee that this practice is better in the local context than what had emerged locally as ‘normal practice’. The direct reference to external power in the use of boycotts and additional requirements (beyond the direct quality of products), is easily interpreted by national governments as an encroachment into their sovereignty.

In response to the self-regulation in markets, as started in oil palm with the Roundtable on Sustainable Palm Oil (RSPO), governments have created their own ‘certification’ bodies, such as the Indonesian Sustainable Palm Oil (ISPO) standard in palm oil (van Noordwijk et al 2017) and Indonesian Sustainable IS-Coffee standard for coffee, expecting markets to trust the government, where they wouldn’t trust farmers. As government certification is primarily based on compliance with existing regulations, obliging all farmers to be certified implies an expectation that this new rule, in contrast with existing rules, will be followed. It may be optimistic that a positive ‘geographical indication’ can be achieved for a country like Indonesia as a whole.

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1 Econs are human beings who take decisions according to the rules described in economics; there is a debate on what part (if any) of the human population they represent



Even though private certification schemes are governed primarily by market mechanisms, the establishment of partnerships between private sectors and smallholder farmers also play an important role in establishing the basis of governance of eco-certifications. A clear legal framework, written codes of conduct and other necessary consensus provisions have further contributed to the improved benefits of smallholders, private sectors and other parties involved. Local institutions that shape the governance of eco-certification provide an incentive system for smallholders to perform well in meeting the quality standards of coffee production, hence the value chain and rural livelihood. This calls for further studies on the institutional arrangements of eco-certified coffee agroforestry in the global value chains, including the efficiency level of the chains, the sophistication of certification partnership, contracts and regulations that govern quality assurance and other empowerment programs. Mandating certification according to nationally determined standards for all coffee producers may increase administrative control and transaction costs with limited change in practice, and it may not add to global competitiveness nor farmer income unless consumers at the end of the value chain are convinced of its effectiveness.

## 8. Conclusions

- 1 Certification aims to restore consumer trust in value chains, addressing social and environmental issues of public concern, but the global nature of certification may not provide a close match with local concerns of farmers and public governance agencies.
- 2 Indonesian policies support coffee farmers to follow ‘good agricultural practice’ to increase global market access, expecting its standards to gain global recognition addressing the generic global concerns and providing more detailed evidence on local responses.
- 3 Cost-benefit evaluation of certification requires recognition of the separate accounting stands of producers, processors/ traders, governments of exporting countries, certifiers, consumers and global citizens; only when there are net benefits for all actors along the value chain can we expect certification to get effective support.
- 4 Farmers’ preferences regarding eco-certification in Indonesia are primarily economically driven, as certification is weakly institutionalised in the farmer’s context.
- 5 Existing eco-certification schemes have increased the quality of coffee produced by smallholders, indirectly improving the economic performance of the farms; the primary benefits have been in knowledge transfer and in a stimulus to collective action.

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