Introduction

The development of the palm oil industry in Latin America, in particular Colombia, has followed a different trajectory than in Southeast Asia. The most striking difference is in land-use changes during plantation expansion. In Malaysia and Indonesia this is commonly related to forest clearance, but plantations in Latin America are mostly established on previously cleared land such as cattle pasture (Furumo and Aide 2017). This dynamic is evident in northern Colombia, and it illustrates the advantages when trying to mitigate plantation expansion into high conservation value areas. However, it also means that many neotropical oil palm landscapes in Latin America already had little remaining forest cover, and limited capacity to support biodiversity and ecosystem services. Another important difference is that most palm oil produced in Latin America stays in the region, with much of it exported to Mexico (Furumo and Aide 2017).

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The Colombian palm oil industry was established in the 1960s and 1970s to reduce reliance on foreign vegetable oil imports. Today the country is the largest palm oil producer in Latin America and the fourth largest in the world. A total of about 0.5 million hectares of plantations (Figure 1) each have their own unique ecosystems and socio-economic conditions. Colombia is unusual among palm oil producing countries in that more than 80% of production is used nationally in food, biodiesel and other industries (Fedepalma 2017). Recently, expansion has outpaced local demand; this has led to oversupply and saturated domestic markets and forced producers to look for new opportunities. With increased exports, more companies have begun pursuing certification to gain access to new markets and remain competitive, particularly in the northern production zone of the Caribbean coast, where proximity to ports (Cartagena, Barranquilla, Santa Marta) provides easy export.

**RSPO and organic certification in Magdalena, Colombia**

Certification standards such as RSPO’s have the potential to improve smallholder livelihoods if they deliver on sustainability goals. Currently, there is no evidence of the effectiveness of certification in transforming practices at the farm-level. This article reports recent findings on improved management practices among certified smallholders in northern Colombia (Furumo et al. 2018, in press). That study focused on farms near the Zona Bananera (see Figure 1), an area that has been dominated by commodity crop production since the banana plantations of the United Fruit Company a century ago.

Field surveys of 43 certified and non-certified farms in Magdalena, Colombia and a case-controlled study design allowed for a robust comparison of conventional and certified practices. The certified farms complied with both RSPO and International Federation of Organic Agriculture Movement (IFOAM) standards.

**The business model**

Smallholders themselves do not usually seek certification in the Colombian oil palm sector; usually it is initiated by anchor companies that own a mill and drive certification upstream in the supply chain. The certified company in this study owned the certificate and implemented a contract farming business model with smallholder cooperatives, called production alliances, that were established in 2002 through government policy (Proyecto apoyo alianzas productivas, Decree 231/2002).
The aims of the policy were to promote associations between smallholders and agroindustry and increase smallholder access to loans and other financing for establishing or improving farms. In Colombia, this model proved successful in securing supply and increasing output from mills. Today, at least 4,200 smallholder oil palm farmers are involved in 124 production alliances across the country (Fedepalma n.d.).

The typical farm size in the study area was five to six hectares. Many oil palm producers inherited their land or acquired it decades ago, and had prior experiences with other commodities such as cattle, cotton and cacao. They planted oil palm with favourable loans from the anchor company. The company attained organic certification in the early 1990s, RSPO certification in 2015 and RSPO Next in 2017. Most of the palm oil produced is destined for export in value-added products. As a result, the smallholders surveyed were both RSPO and organic certified, most having practiced organic farming since planting oil palm. During the RSPO certification process, the company covered the costs of field studies (HCV assessment, environmental and social impact assessments) that were conducted at the landscape level. Under arrangements between producers and mill owners, farmers take full responsibility for the on-farm improvements required by the standards, such as infrastructure or installations such as bathrooms for workers, storage rooms for agrochemicals, etc. Third-party audits for compliance are conducted on a random basis on some smallholders; a successful audit results in certification for all smallholders in the supply base.

After receiving financial support from the company during the certification process, smallholders entered into contracts to sell fruit exclusively to the company mill. These contracts were typically for 20 to 25 years, which is the time when oil palm needs to be replanted. There is no fixed purchase price,
1.2 Does certification of oil palm work for smallholders?

but guarantees are included for premiums paid for certified production; other benefits (e.g., transportation credits) are negotiated separately. Under this arrangement, credit is also made available to farmers for fertilizers and equipment. This can be repaid through deductions from monthly fruit sales. The company also provides free periodic technical assistance through extension officers, who visit smallholders once or twice a month. Free technical assistance and credit-for-fruit exchanges were also common practices in the study area, even among non-certified producers.

**Evidence of certification effectiveness**

Certified producers reported significantly lower agrochemical use, more on-farm conservation areas, reduced hunting, and better worker pay, but no differences in water and waste management or record keeping. The most notable difference between certified and non-certified groups was the use of agrochemicals: 19% of certified producers used fertilizers and 9% used pesticides, compared to 98% and 65% of non-certified producers. This can be attributed to organic practices implemented on certified farms. RSPO, on the other hand, is vague about agrochemicals, recommending only that their use be “minimized” to maintain soil fertility. Certified producers applied similar quantities of organic fertilizers (about 3 kg per tree annually); both groups applied less than half of the recommended amount needed to attain maximum yields. Fertilizers represent the single largest cost for oil palm producers — some 25–40% of their total costs — and many smallholders do not have the resources to maintain effective fertilization programmes.

Certified producers had significantly lower yields and fewer workers per hectare, reflecting the increased yield gap when inorganic fertilizers are not applied. Certified farmers produced an annual median of 18 tonnes of fresh fruit bunches per hectare, compared to 22 tonnes by non-certified farmers. Both amounts were well below the average yield of 27–30 tonnes in the North Zone of Colombia.
Certified farmers paid their workers US$3.55 per tonne of fruit harvested: 50% more than non-certified farmers paid (US$2.37). They received a 12–18% price premium on sales. Since certified smallholders were compliant with both RSPO and organic standards, with criteria that overlapped but were but in part complementary, the effects of the two certifications could not be separated. These statistics do, however, provide an example of the maximum potential for improving smallholder practices through certification.

Enhancing certification effectiveness

For improving farm-level management practices, particularly those that address environmental criteria, certification seems to be working. But the outcomes of these improved practices for ecosystem conservation and livelihoods are still uncertain. The study was unable to link environmental benefits with detectable improvements in livelihoods, since land holdings, household education and other assets considered key for well-being do not seem to vary much across farms. They study found encouraging outcomes in terms of better environmental practices and socio-economic benefits for farmers and workers, but certification still needs to improve on-the-ground performance. There are three important areas that require attention: ensuring continued financial incentives for smallholders (i.e., price premiums); improving forest cover and biodiversity conservation through habitat restoration; and overcoming smallholder lack of professionalism through better engagement and oversight by anchor companies.

Price premiums

Half of certified producers reported that the premium was their primary motivation for becoming certified, and 67% stated this was the primary benefit. Certified producers are essentially able to offset lower yields with higher prices, but the price premium may not always be guaranteed. As more producers become certified, the global supply of certified palm oil increases, and certified production becomes the new norm, the price premium could decline.

It is assumed that the current oversupply of certified palm oil is unlikely to change until consumers begin demanding certified palm oil in important countries such as China, India and Pakistan. Several palm oil mills in Colombia have already reported lower price premiums for RSPO-certified palm oil, and many expect these incentives to disappear altogether in the near future. Organic-certified palm oil may, however, continue to enjoy high price premiums since the global supply is a fraction of that of RSPO-certified palm oil. Premiums reported by the company varied widely: up to US$100 per tonne for organic-certified palm oil, but only US$15–20 for RSPO-certified palm oil. Given the importance of price premiums to smallholders, the issue of diminishing premiums must be addressed to enhance smallholder contribution in the global value chain.

Habitat restoration

In the highly degraded oil palm landscapes of northern Colombia, where little natural vegetation remains, avoiding deforestation is insufficient to claiming environmentally sustainable palm oil production. In this context, habitat restoration is needed to ensure the recovery of biodiversity and ecosystem services. On certified plantations, the main way to achieve habitat restoration is through conservation set-asides that identify and protect High Conservation Value (HCV) areas. For smallholders, HCV assessments are conducted by the company at the landscape level, i.e., not at each farm.
In Magdalena, significantly more smallholders had maintained conservation areas on their farms, but this still represented only 26% of the sample. These set-asides were typically less than 0.5 hectare, or roughly 10% of the farm. Individually, smallholders contribute relatively little to regional forest cover and at a high cost to farmers, with the opportunity costs of not planting oil palm around US$380 per ha in northern Colombia. For habitat to be suitable for most forest species, much larger set-asides — of at least 200 to 700 ha — are required (Lucey et al. 2014), so it would be more feasible for certification programmes to engage with commercial estates to meet restoration goals.

Both RSPO and IFOAM restrict the planting of oil palm in HCV areas, but only IFOAM requires active restoration of on-farm wildlife refuge habitats where none exist. The only related RSPO provisions require active restoration of natural habitat in riparian areas, and even then, restoration can be delayed by many years. In a separate sample of medium- and large-scale producers in northern Colombia, conservation set-asides on RSPO/organic-certified plantations averaged 8% of total plantation area, but only half of RSPO-certified plantations maintained conservation areas averaging 5% of plantation area, and conservation areas on non-certified plantations were essentially non-existent (less than 1%). The presence of larger conservation areas on certified plantations is encouraging, but set-asides occurred mostly in small patches instead of large reserves, and were typically established opportunistically in areas where oil palm was difficult to plant or harvest. Certification standards should be amended to require the conservation or restoration of a minimum proportion of a plantation, and the establishment or expansion of riparian corridors along waterways should be prioritized in degraded oil palm landscapes to provide connectivity for wildlife.

**Smallholder informality**

A major theme that emerged from the study was that the informality of smallholder management can impede the adoption and effectiveness of certification schemes. Certified farmers did not outperform conventional farmers when it came to documentation, record keeping, and following safety protocols. Smallholders are typically unaccustomed to documenting day-to-day farm activities, and their habits are not easy to change. Indeed, many farmers view this level of meticulous record keeping as an extra burden with no direct benefit. Another factor may be temporary or inconsistent labour contracts. Many smallholders only oversee farm activities, hiring workers twice a month to harvest fruit and undertake maintenance. While the same workers are often hired each month, turnover results in inconsistent practices. Informality was not an issue on professionally managed medium- and large-scale plantations that showed across-the-board compliance with documentation, record keeping, use of safety equipment among workers, and supervisors ensuring that proper procedures are followed in the field.

The credibility of certification standards relies on transparency and traceability, so record keeping is key to successful implementation. Smallholder who don’t comply with these aspects of farm organization could follow inefficient agronomic practices (e.g., fertilizer applications) that affect profitability. More egregious examples of non-compliance could occur if certification standards are not adequately monitored and enforced. Improved capacity building for the company/mill and smallholders could help overcome these challenges. Although the certified smallholders surveyed had both RSPO and organic certification, most were unable to distinguish between the two. Many of them were certified organic first and thought that the addition of RSPO some years later was part of the original certification. Some were not even aware they were also RSPO-certified. This raises the need for better communication by the company and continued follow-up meetings or training to foster capacity and communicate updates to the standard.
Conclusion

Certification is no guarantee of sustainable palm oil production. Governance intervention and planning must be implemented at various levels of the supply chain and across the public and private sector to create a truly sustainable palm oil industry. Certification is only one piece of this puzzle. In this case study, certification enhanced smallholder inclusion by allowing farmers to acquire credit through production alliances formed with the mill, which also covered the most significant costs associated with becoming certified. This was made possible by a state-sponsored policy to improve links between smallholders and agroindustry, setting a precedent for the important role of local governments in improving the sustainability of supply chains.

State influence could be expanded by providing incentives such as tax breaks to companies that include more smallholders in their supply bases and promote ways for smallholders to capture more value from their production. For instance, a group of 800 smallholders in the Central production zone have organized to build their own mill for producing and marketing palm oil produced by smallholders (Vanguardia 2017).

Certification programmes such as RSPO and IFOAM remain important tools to engage smallholders in adopting sustainable practices. Better information networks and more creative efforts are needed, however, considering that most non-certified producers in the Magdalena study were unaware that such programmes exist. To this end, certification standards could be amended to require a certain target of smallholder representation in certified supply bases (Beall 2011). Large producers manage estates and have an outsized potential to contribute to conservation goals, but existing certification requirements are limited in the highly modified production landscapes of Latin America. The HCV framework can be effective in protecting conservation values in the presence of important habitats, but provides no quarter in their absence. Certification amendments that shift the burden of habitat restoration to commercial estates, as well as adding provisions to increase food security through the production of household staples, could greatly enhance the positive impacts of certification standards for smallholders.

References