

Exploring the Links Between the Practices of Forestry Cooperatives and the SDGs

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Abstract: The 17 Sustainable Development Goals (SDGs), adopted by the General Assembly of the United Nations in 2015, represent the main global challenges to be met worldwide. Since they are directly influenced by actions taken at the micro level, the commitment of businesses, including cooperatives, to their implementation is very important. In theory, cooperatives that act in accordance with the cooperative principles agree to commit to the sustainable development of their community, as enshrined in the 7th cooperative principle. The latter principle specifies, however, that this commitment is made through policies approved by their members, which means that it depends on decisions made by the collective of members, based on their needs and aspirations. The commitment of cooperatives to sustainable development must, therefore, be demonstrated by concrete actions. This article aims to highlight the existing links between the practices of forestry cooperatives in Quebec and Honduras and the SDGs. We show that the cooperatives under study adopt practices related to all SDGs, except for SDG 14, although their commitment is not yet formalized within their core business. This suggests that they are likely to contribute even more positively to the implementation of the SDGs if they formally commit to them through a collective strategy across their respective networks. Although these results cannot be generalized, we suggest that the collective participation of members in ownership, power and results, characteristic of cooperatives, represent a considerable contribution to the fight against poverty, the reduction of inequalities and the promotion of just, peaceful and inclusive societies.

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Introduction

Ending poverty, protecting the planet and ensuring global peace and prosperity: these are the ambitions of the 2030 Agenda for Sustainable Development, adopted by the General Assembly of the United Nations in 2015 (Resolution 70/1). This global blueprint is based on a list of 17 Sustainable Development Goals (SDGs), which represent the main areas of economic, social and ecological intervention on which governments, organizations and civil society are invited to act worldwide. While these overarching goals provide a macro perspective of the challenges to be met in terms of sustainable development, they are directly influenced by action on the ground, at the micro level (Jasmine, 2017). The contribution of businesses to the implementation of the SDGs, "broadly defined by movement toward the global societal aims expressed in the SDGs" (Gregersen, Lakany and Blaser, 2017, p. 21), is therefore very important.

In this context, “the relationship of business and society” must be examined by asking how it can effectively contribute to solving global challenges (Dyllick and Muff, 2015). What distinguishes a sustainable organization from another is indeed its ability to reflect on how its activities can generate positive impacts on society and the environment and to translate the challenges of sustainable development into its core business, its activities and its practices (Amui, Jabbour, de Sousa Jabbour and Kannan, 2017; Dyllick and Muff, 2015; Stappmans and Bereuther, 2017). However, this approach requires a change of perspective “from seeking to minimize its negative impacts to understanding how it can create a significant positive impact in critical and relevant areas for society and the planet” (Dyllick and Muff, 2015, p. 11). This “outside-in” approach differs from the more generalized “inside-out” approach, in which organizations seek to reduce their negative impacts in order to benefit financially from integrating sustainable development issues into their strategy (Dyllick and Muff, 2015). The success of organizations now depends on their ability to find “innovative solutions that address global issues and, simultaneously, fulfill stakeholders' needs” (Amui *et al.*, 2017, p. 308).

The 2030 Agenda for Sustainable Development explicitly mentions cooperatives in the section on the means of implementation of the SDGs. However, because of their broad formulation, it may seem difficult for local cooperatives to concretely associate the SDGs with their daily activities (Alliance coopérative internationale (ICA), 2017). Furthermore, the targets and indicators describing the SDGs have been designed for national and regional levels, which does not facilitate their translation into objectives or indicators at the organizational level. Hence, some adaptation work has to be done by local organizations that wish to integrate the SDGs in their strategies and practices, in particular by identifying their current and potential impacts on implementation. This article therefore aims to highlight the existing links between the practices of forestry cooperatives in Quebec and Honduras and the areas of intervention expressed in the SDGs. It reports the results of research carried out in collaboration with the Fédération québécoise des coopératives forestières (FQCF) and the Société de coopération en développement international (SOCODEVI), which aimed to better understand the nature of the current contribution of Quebec and Honduran forestry cooperatives to SDGs, based on their perceptions and practices. Beginning with a brief summary of the knowledge surrounding the links between the forestry sector and the SDGs, then that concerning the commitment of cooperatives to sustainable development, the article continues by addressing the methodology adopted and the cooperatives under study. The practices identified as part of this research are then presented and analyzed in relation to the SDGs and their targets. The article shows that forestry cooperatives are already contributing to the implementation of many SDGs, although their commitment is not formalized within their core business. This finding suggests that certain characteristics intrinsic to the cooperative model may favour their contribution to the social, ecological and economic challenges reflected in the SDGs, which is the subject of the concluding discussion.

State of current knowledge

While forestry co-operatives are active in many countries (Guillotte and Charbonneau, 2016), we found no research so far about their contribution to SDGs, which can be partly explained by the recent adoption of the SDGs. Therefore, in this section, we discuss the relationship established between the forestry sector and the SDGs in recent literature before turning to the one on the commitment of cooperatives to sustainable development.

Forestry sector and SDGs

The role of forests in achieving the SDGs is explained by many researchers. Some argue that forests can contribute to all of the SDGs, by providing various ecosystem services (Gonzalez-Navarro, Tomei and Flores-Oyarzo, 2018; International Institute for Environment and Development, 2014). Forests fulfill a multitude of functions: they protect and improve ecosystems, create wildlife habitats, help regulate climate systems, protect soils and watersheds, provide spaces for recreation and contemplation in addition to providing a multitude of wood and non-wood products (Gonzalez-Navarro *et al.*, 2018).

SDG 15, which aims in particular to protect terrestrial ecosystems, explicitly mentions forests. From a theoretical point of view, it is generally accepted that rural communities dependent on forests directly benefit from the products and services provided by the forest, such as the provision of income and employment (SDGs 1 and 8), the purification of water (SDG 6), the regulation of services for agriculture (SDG 2) or even access to energy (SDG 7), medicinal

components (SDG 3), building materials (SDG 11) and green spaces (SDG 11) (Gonzalez-Navarro *et al.*, 2018; Baumgartner, 2019; De Jong, Pokorny, Katila, Galloway and Pacheco, 2018). Researchers also recognize that forests can contribute to climate action (SDG 13) (De Jong *et al.*, 2018; Baumgartner, 2019).

However, little research has focused on the contribution of forestry sector actors to the various SDGs. The main objective assigned to this sector in the context of the SDGs is that of ensuring the implementation of practices that are consistent with sustainable forest management, often associated with the following three objectives (Gregersen *et al.*, 2017) :

- curtailing illegal deforestation and unneeded forest conversion and degradation [...];
- building up the global forest estate through afforestation, reforestation, and agroforestry, including restoring degraded forests and abandoned agricultural and other lands; and
- governing, managing and utilizing both natural and planted forests and trees in more efficient, effective, equitable and sustainable ways. (p. 14)



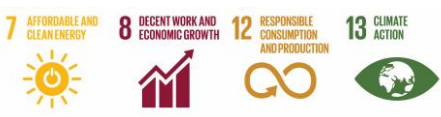
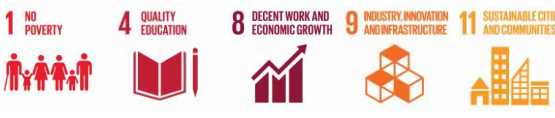



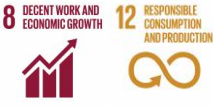
The emphasis on sustainable forest management does not, however, represent adequately the possible contribution of forest industry stakeholders to the SDGs. Hazarika and Jandl (2019) obtained the views of leaders of the Austrian forestry sector (research institutes, forestry institutes, non-profit organizations and ministerial units) regarding the possible synergies between SDG 15 (protection of terrestrial ecosystems) and the other SDGs in the context of activities related to the forest industry. Respondents identified significant synergies between SDG 15 and SDGs 3 (health and well-being), 6 (clean water and sanitation), 7 (clean and affordable energy), 9 (industry, innovation and infrastructure) and 13 (climate action). The other SDGs were considered to be linked from far or very little linked to the forestry sector.

In addition, forestry can have positive or negative effects on the achievement of the SDGs, depending on the practices adopted by the stakeholders (Baumgartner, 2019). Interested in knowing the contribution to the SDGs of a Chilean forestry company operating mostly in monocultural private plantations, Gonzalez-Navarro *et al.* (2018) find that only its social investment practices are positively associated with the SDGs. The effects of other business practices on the local community are considered to be limited or even negative. A limited supply of low-paid, non-permanent jobs, inadequate forestry and plantation management practices and the large area devoted to plantations leaving little room for the development of alternative economic activities explain these results.

Conversely, research identifies many potential contributions of community forestry to the SDGs. This type of forestry aims to improve the livelihoods of people living in or near forests in countries with low gross domestic product per capita, while maintaining forest cover and the provision of ecosystem services (De Jong *et al.*, 2018). Food and Agriculture Organization (FAO) and AgriCord (2016) point out that organizations which bring small agroforestry producers together are likely to have beneficial effects on improving livelihoods (SDGs 1, 2, 3, 7), strengthening environmental management (SDGs 13, 15), developing human capacity (SDGs 4, 8, 10) and establishing inclusive partnerships (SDG 17). According to De Jong *et al.* (2018), the potential contribution of community and peasant forestry initiatives to the SDGs is substantially increased when the conditions favorable to the implementation of these initiatives are met.

More recently, the Forest Solutions Group of the World Business Council for Sustainable Development (WBCSD) has identified eight impact opportunities for the forestry sector, a summary of which is presented in Table 1.

Table 1. Forestry sector impact opportunities according to the Forest Solutions Group

<p>Working forests</p> <p>Bring more of the world’s working forests under sustainable management.</p> 	<p>Circularity</p> <p>Bring resource efficient, bio-based and circular business models to scale.</p> 
<p>Bioeconomy</p> <p>Scale up the sector’s contribution to a circular bioeconomy.</p> 	<p>Communities</p> <p>Enhance the livelihoods and support resilience of forest dependent communities and local economies.</p> 
<p>Climate</p> <p>Advance and strengthen the role of forests, wood fiber products and the forest sector in global climate change mitigation and adaptation.</p> 	<p>People</p> <p>Enhance sector’s attractiveness, diversity, inclusiveness and safety.</p> 
<p>Water</p> <p>Expand context-based water stewardship approaches.</p> 	<p>Procurement</p> <p>Strengthen and enhance responsible procurement practices, transparency and traceability throughout the value chain.</p> 

Source: WBSCD, 2019, p. 26-36.

Cooperatives and sustainable development

In theory, cooperatives that act in accordance with the cooperative principles agree to commit to the sustainable development of their community, as enshrined in the 7th cooperative principle (ICA, 1995). Certain cooperative characteristics are then highlighted to explain their particular contribution to their environment.

Locally owned and controlled, with net profits distributed to members-owners, many consider co-operatives to be a perfect model for the socio-economic development of their local communities. Their structure and objectives compel them to behave differently than other community organizational structures. In addition, co-operatives play a vital and direct role in rural economic development. (Vukmirovic et al., 2015, p. 59)

The latter principle specifies, however, that this commitment is made “through policies approved by their members” (ICA, 1995). In other words, it depends on decisions made by the collective of members of a cooperative, based on their individual and collective needs and aspirations. Thus, it is important to “avoid a shortcut that is too quick, which tends to believe that cooperatives will necessarily make distinctive contributions to their environment” (Isola, Gonzalez, Oreggioni, Pastorini, Yorn, Fortin, Beauregard, Peixe McIntyre, Fraco deSa, Ariza and Dosza, 2005, p. 84; *our translation*). The commitment of a cooperative to sustainable development largely depends on the collective project carried out by its members through the cooperative, which “brings into play the why, the what and the how of the existence of a collective” (Desreumaux, 2013; cited in Capron and Quairel-Lanoizelée, 2015, p. 241; *our translation*). This collective project represents the main driver of its strategy and practices.

Touzard and Vandame (2009) observe that the variability in the commitment of cooperatives to sustainable development is explained by a number of factors. First of all, this commitment is built primarily through investments oriented towards the economic sphere allowing the cooperative to survive. While necessary, these investments are not sufficient for the development of actions in the social and ecological fields. Thus, the authors argue that a commitment to sustainable development presupposes a collective project capable of combining the economic motivations of the members with a perspective of social change. Finally, the authors observe that the composition of cooperative membership appears to be an important factor in their commitment to sustainable development. Cooperatives with more heterogeneous membership tend to engage more in innovative actions in the social and ecological fields than cooperatives with homogeneous membership.

In general, an organization's desire to maintain its reputation, or its legitimacy, represents an important driver for integrating sustainable development into its strategic directions and practices. Legitimacy, a key concept in the social acceptability of an organization's activities, is defined as “the shared impression that the actions of the organization are desirable, suitable or appropriate in relation to [...] social norms, values and beliefs” (Suchman, 1995; cited in Capron and Quairel-Lanoizelée, 2015, p. 39; *our translation*). The behaviour of an organization is therefore not inherently fair or acceptable. “It is judged as such according to values or social norms at a given time” (Capron and Quairel-Lanoizelée, 2015, p. 39; *our translation*). Cooperatives active in sectors dependent on natural resources, such as forestry, are directly exposed to ecological campaigns on issues such as biodiversity, the integrity of forest ecosystems or the reconciliation of uses (Gertler, 2001). Being recognized as legitimate actors becomes a determining condition for the continuity of their activities, especially in public or community forests where the access to resources is subject to the will of the State.

In short, the cooperative organization is a possible framework for implementing actions that are *a priori* favorable to sustainable development, but commitment to this path is not given by cooperative status alone (Touzard & Vandame, 2009; Brown & Novkovic, 2015; Akhabbar & Swaton, 2011). Cooperative principles are first constructed with regard to economic and social development issues and do not explicitly cover all of the fields currently considered by the SDGs. The undertaking of sustainable development measures depends on strategic choices independent of its status. It requires a certain financial stability making it possible to devote resources to the implementation of sustainable development actions (Labelle & St-Pierre, 2015) compatible with a collective project of social change driven by consequent values and aspirations (Touzard & Vandame, 2009). The commitment of cooperatives to sustainable development must therefore be demonstrated by concrete actions in social, economic and ecological areas (Touzard & Vandame, 2009; Brown & Novkovic, 2015).

Methodology

Analyzing the contribution of an organization to a given objective consists in establishing that an intentional action, taken with the aim of creating a change, had a noticeable effect (Mayne, 2012; Midgley, 2000). Since multiple factors are likely to have an influence on the results (Mayne, 2012), our research specifically focuses on the actions implemented by forestry cooperatives, which translate into practices. Within the framework of this research, the contribution of forestry cooperatives to the SDGs is envisaged from the angle of actions intentionally implemented by cooperatives to generate positive effects or reduce negative effects of their activities in the social, economic and ecological areas of intervention targeted by the SDGs.

These intentional actions were obtained through discussion workshops in which 15 representatives of six forestry workers' cooperatives, members of FQCF, and 28 representatives of three agroforestry cooperatives, members of the Federación Hondureña de Cooperativas Agroforestales (FEHCAFOR), participated on a voluntary basis. All the participants in these workshops were members, administrators or managers within their respective cooperatives. One workshop was conducted in Quebec and another in Honduras, using the same data collection tools. For logistical reasons, the cooperatives represented, both in Quebec and in Honduras, came from the same region. Participants were not required to be familiar with the SDGs to participate in the workshops.

Participants were invited to reflect on the meaning and application of sustainable development within their respective cooperatives. They were then invited to read a sheet describing the title of each of the SDGs and a summary of the main associated targets. Next, they were asked to identify the SDGs that they believed were the most important to achieve for categories of beneficiaries, namely their members, their cooperative itself and their local community. This subdivision is based, first, on the idea that cooperatives combine a social function - which is linked to the satisfaction of their members' needs and aspirations - and an economic function - which generally involves activities of transformation of goods or offers of services and conditions the integration of the cooperative in its economic environment (Isola *et al.*, 2005). The addition of the local community category is based on the assumption that the territorial anchoring of the cooperatives generally "leads them [...] to take into account the need to manage in the long term the local resources which condition [their] activities and those of [their] members, to get involved and invest in local development" (Draperi and Touzard, 2003; cited in Touzard and Vandame, 2009, p. 39; *our translation*). Furthermore, the contribution of organizations to sustainable development must take into account the context in which they operate. Certain practices or measures relevant in a given local or national context will not find an echo in another context.

Starting from the SDGs identified in each of these subdivisions, the participants were led to map the practices implemented by their respective cooperatives towards them. Internal documents relating to the cooperatives encountered were also analyzed, when available, in order to supplement or clarify some of the practices mentioned by the workshop participants. The practices identified by the forestry cooperatives were then linked to the targets set for each of the SDGs. This classification of practices makes it possible to identify the areas of intervention in which studied cooperatives are currently the most engaged or hold potential for contributing further.

Limits of research

As part of this exploratory research, we voluntarily chose to examine only practices that demonstrate a commitment to contribute positively or reduce the negative effects of the activities of forestry cooperatives on the SDGs. This decision is consistent with the research objective, which is to better understand the current contribution of cooperatives to the areas of intervention targeted by the SDGs. The degree of contribution of forestry cooperatives to the SDGs and the relevance of the actions implemented with regard to them are not among the objectives of our research. Internal procedures or additional research will be necessary to identify the current unsustainable practices adopted by forestry cooperatives, so as to know and to mitigate their negative effects, as well as to assess the effectiveness of the practices adopted towards SDGs.

Cooperatives under study

Quebec forestry cooperatives are mainly made up of worker cooperatives. Other types of forestry cooperatives also exist to a lesser extent; their members are then the companies or forest owners who use their services (Comité

sectoriel de main-d'œuvre en gestion forestier (CSMOAF), 2017). For their part, forestry cooperatives located in Honduras generally take the form of agroforestry cooperatives (Nygren, 2005). While the legislative context surrounding the activities of these cooperatives differs, their objective is similar: the taking over of forestry activities by local populations, so as to promote local development (Van den Breemer, Bergh and Vermeij, 1994; Blais, 1999).

Forestry workers' cooperatives - Quebec

Forestry workers' cooperatives are owned and controlled by their employee-members. Workers' cooperatives are those “made up exclusively of natural persons who, as workers, join together to operate an enterprise pursuant to the rules of cooperative actions, and whose object is to provide work to [their] members and auxiliary members” (*Cooperatives Act*, art. 222). The objective of forestry workers' cooperatives is thus to create and maintain local and quality jobs in the forestry sector (Guillotte and Charbonneau, 2016). They are distributed in all regions of Quebec with a high percentage of public forests, in which they carry out most of their activities (CSMOAF, 2017). Forestry workers' cooperatives participate in the forest value chain through the production of tree seedlings, forest management, harvesting of wood and non-wood forest products, transportation and, for some, wood processing (Mobtaker, Ouhimmou, Rönnqvist and Paquet, 2018; Ryan, 2011; CSMOAF, 2017).

The first forestry workers' cooperatives in Quebec appeared in the late 1930s, in a context of near-monopoly of large pulp and paper industries. From the outset, they focused their strategies “on workers taking charge of their working conditions, developing and controlling forest resources, thus contributing to the development of local communities” (Ryan, 2011: 3; *our translation*). Forestry became the main driver of development in certain regions. Even today, forestry workers' cooperatives represent one of the main, if not the only, employers in certain forest regions of Quebec.

Forestry workers' cooperatives greatly consolidated and developed during the 1980s. Aware of the precariousness generated by the use of tenders for supply and forest management contracts, and of its effects on the demobilization of labour and the quality of works, the Council of Ministers of Quebec adopted a decree authorizing preferential allocation to forestry workers' cooperatives. Up to 50% of intensive forest management work in public forests could then be awarded to these cooperatives through contracts (Ryan, 2011). The purpose of this exemption was to recognize the importance of cooperatives in the Quebec forestry sector and, more specifically, in the training of a workforce specializing in the performance of silvicultural work. This official recognition did not, however, withstand the changes in governments and forest regimes that took place thereafter, despite sustained efforts by cooperatives to obtain more responsibility in the management of local public forests (Ryan, 2011). Today, the majority of Quebec forestry workers' cooperatives carry out forest management activities in publicly-owned forests on behalf of private forestry manufacturers who hold supply guarantees.

The Sustainable Forest Development Act, and the new forest regime introduced in 2013, put most of the responsibilities related to the forest in the hands of the government (Moreau and Guénette, 2016). This new law is based on an ecosystem approach, which aims to ensure adequate protection of biodiversity and the viability of ecosystems by reducing the gaps between the managed forest and the natural forest (Gouvernement du Québec, 2016-2020; CSMOAF, 2017; Gareau, 2005). Important considerations regarding the reduction of negative environmental impacts associated with forest interventions are introduced in the law and related regulations. Thus, all organizations operating in the Quebec public forest, including forestry workers' cooperatives, must hold an environmental certification recognized by the Ministry of Forests, Wildlife and Parks, or work under the aegis of a company that owns one. They can opt for the international standard ISO 14001 or for the certification program for enterprises in forest management set up by the Bureau de normalisation du Québec (BNQ). These certifications require the implementation of internal procedures aimed at monitoring and continuously improving the environmental performance of the organization (BNQ, n.d.).

Obtaining forest certification complements environmental certifications. In Quebec, three forest certification systems are recognized: that of the Canadian Standards Association (CSA), that of the Forest Stewardship Council (FSC) and that of the Sustainable Forestry Initiative (SFI). These systems, specific to the forestry sector, deal with subjects similar to sustainable forest management (Gouvernement du Québec, 2004-2016). The forestry workers' cooperatives operating in public forests are all FSC or SFI certified. In addition, third-party certification of silvicultural

business management practices is also compulsory for carrying out non-commercial silvicultural work in Quebec's public forest (CSMOAF, 2017).

Agroforestry cooperatives - Honduras

Until the 1970s, there were very few cooperatives active in the forestry sector in Honduras (Jones, 2003). Rather, the sector was dominated by foreign forestry companies with concessions granted by the Honduran government. Corruption and mismanagement were common, and profits from logging were not reinvested in local communities. Large volumes of wood were harvested, without any obligation to reforest, which led to a sharp reduction in the stock of wood from forests (Nygren, 2005; Repetto, 1999). In the early 1970s, the Honduran government passed a law to regain control of the country's forests. The Honduran Corporation for Forestry Development (Corporación Hondureña de Desarrollo Forestal (COHDEFOR)) was founded and obtained responsibility for all activities related to forest management (Nygren, 2005).

With these new responsibilities came that of establishing a social forestry system. Such a system aims to involve rural communities in forest management, so as to prevent the continuous destruction of forest resources while promoting local development. Social forestry is based on the idea that rural communities living in or near forests are best placed to protect and care for these forests (Jones, 2003; Repetto, 1999). When communities can derive their livelihoods from the forest, it strengthens their appreciation of it. Therefore, they are more inclined to participate actively in the protection of forests against fires, overgrazing, illegal logging and forest encroachment by agricultural activities (Richards, 1993; Jones, 2003).

Most of the agroforestry cooperatives currently operating in Honduras were born out of this social forestry system. The adopted law stipulated that any group of members of a community organized through a legally recognized institution could participate in the social forestry system (Pelligrini, 2011; Jones, 2003). Since COHDEFOR promoted the formation of agroforestry cooperatives, the majority of communities that wished to participate in the social forestry system formalized themselves through such cooperatives (Jones, 2003). Their presence became significant in pine forest areas, and resin extraction represented, and still represents, the main income-generating activity for their members (Jones, 2003).

In fact, most of the members of agroforestry cooperatives are subsistence farmers who receive no monetary income from their agricultural activities and whose only source of liquidity comes from the exploitation of the resin (Jones, 2003). Within communities, each forest plot dedicated to the exploitation of resin is generally recognized as belonging to the member who collects the resin (*resinero*), even when this member does not hold legal title (Jones, 2003). While some cooperatives require members to actually own a forest plot for resin extraction, others, including those that have diversified their activities over the years, allow new members to join the cooperative even if they do not own such plots. The acquisition and sale of these lots, if any, are often transacted within the cooperative (Jones, 2003).

COHDEFOR's virtual monopoly in harvesting, processing and exporting timber was abolished in 1992, when the government promulgated the law on the development and modernization of the agricultural sector (Jones, 2003; Peretto, 1999). State-owned harvesting and processing companies were closed or privatized. Control of private and communal forests was returned to the landowners. The role of COHDEFOR, now AFE/COHDEFOR, was reduced to that of formulating forest policies and regulating forest management activities (Nygren, 2005; Jones, 2003).

A section of the 1992 law, however, contained clauses aimed at reaffirming and strengthening the social forestry system. One of them granted usufruct rights to groups with three or more years of successful experience in forestry activities, over a period generally defined at 40 years (Jones, 2003). Today, agroforestry cooperatives operate, for the most part, in national forests, owned by the central government and administered by AFE/COHDEFOR, or communal forests, which are administered by municipal governments (Jones, 2003). The 1992 law also gave licence holders primary responsibility for fire prevention (Repetto, 1999).







The agroforestry cooperatives that participated in the study all operate in national forests and their members come from several villages living in or around these forests. Annual management plans, operational and firefighting plans

are required and must be approved by AFE/COHDEFOR to extract resin or harvest wood on these lands. Cooperatives then pay taxes or stumpage fees for the products extracted (Jones, 2003). The last Honduran forestry law, approved in 2007, once again reaffirmed the importance of the social forestry system as a national poverty reduction strategy (Pellegrini, 2011; FAO, 2011). The management of Honduran forests by cooperatives thus combines objectives of reducing deforestation, fighting against poverty and promoting local development.

Results and analysis

During discussion workshops, participants in Quebec and Honduras were asked to name the SDGs that they believed were the most important to achieve for their members, their cooperative and their local community. The SDGs most often identified by participants for each of these subdivisions are presented in Table 2, in order of frequency. The results show the main concerns of the participating cooperatives.

Table 2. Key SDGs identified by workshop participants

Forestry workers' cooperatives (Quebec)	Agroforestry cooperatives (Honduras)
Members	
	
Cooperative	
	
Community	
	

SDGs identified for members of forestry workers' cooperatives in Quebec

The most important SDGs to achieve for workers' cooperative members, according to the workshop participants, are related to health and well-being, decent jobs, access to training, reduction of inequalities as well as peace, justice and the efficiency of institutions. The issues raised by these different SDGs are very similar to those addressed in the definition of decent work established by the International Labour Organization:

Decent work sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men. (1996-2020)

Drawing on the results of research focusing on workers' cooperatives, Pérotin (2017) specifies that such organizations generate more sustainable jobs than traditional businesses, their members often preferring to maintain jobs rather than wage stability. They thus preserve jobs better in difficult market conditions than traditional companies which, for their part, tend to reduce the number of jobs to cope with these conditions. In fact, the practices listed in connection with these SDGs relate in particular to those put in place to ensure decent work for members, both in terms of quality and duration. Jobs in the forestry sector being seasonal, participants in the workshops mentioned that their cooperatives try to extend the work season, or even seek job opportunities for their members with other companies. By doing so, cooperatives aim to offer a sufficient number of hours and weeks worked to ensure the qualification of their employees for unemployment insurance, which is particularly important for jobs with high seasonality (CSMOAF, 2017).

In order to recruit and retain qualified worker-members, forestry workers' cooperatives mention offering training that meets their needs and aspirations, internally or through partnerships with educational institutions. They facilitate access to the latter by granting scholarships to their members. In addition, they offer internships and student jobs to introduce young people to work in a forestry environment and encourage the recruitment of new members. The forest management sector is indeed characterized by a lower proportion of young workers compared to all industries in Quebec (CSMOAF, 2017). Unattractive working conditions and low valuation of associated trades are mentioned to explain this difficulty in recruiting in forest management (CSMOAF, 2017). Cooperatives offer competitive wages as a way to reduce the effect of aging and the difficulty to recruit and retain new workers in the forestry sector. Although these issues are more vibrant in forest management, they are also felt by companies focusing on non-wood forest products and the production of forest plants (CSMOAF, 2017).

Gender parity also remains an important issue in the forestry sector. With the exception of forest seedling production cooperatives, which hire a larger share of women, the majority of jobs related to forest intervention remain occupied by men (CSMOAF, 2017). As a result, the representation of women in decision-making bodies remains, for the time being, limited. However, the cooperatives met said that they are currently developing policies and programs to promote the hiring of women and their effective participation in the activities of the cooperatives. Forestry workers' cooperatives know that they have to innovate to retain their staff and attract new skilled workers.

Aside from skills development, many efforts are made by forestry workers' cooperatives to ensure the health and safety of their members. Training, protocols, emergency response plans are among the practices mentioned, since the risk of accidents is very high in the forestry sector (CSMOAF, 2017). Forestry workers' cooperatives also establish several internal policies aimed at framing working relationships: promotion of mental and physical health, fight against harassment or the use of psychoactive substances, etc. They also offer a variety of internal programs to increase members' access to health care and group insurance products, or to help them prepare for retirement. According to Pérotin (2017), the simple fact of having a certain control over their employment and working conditions, which is favoured by a transparent democratic governance system, can also positively affect workers' health, well-being and job satisfaction in workers' cooperatives.

One of the specific features of cooperatives lies in its democratic governance, which is reflected in particular by the “one member, one vote” rule. The application of this rule implies, however, that members have sufficient and complete information to make informed decisions. For the forestry workers' cooperatives met, democratic governance is mostly reflected by establishing transparent communication with the members, by consulting them for strategic decisions and by providing them with the training and supervision necessary for effective participation. The cooperatives adopt a governance structure consisting of the general assembly of members and a board of directors elected by the members. Specific committees or boards can be established to increase member participation in different areas. This governance structure is framed by codes of professional conduct and ethics. In addition, the cooperatives use an outside administrator who is active in the community to promote the harmonization of their activities with local interests.

Finally, the remuneration structure established by forestry workers' cooperatives aims for an equitable distribution of the fruits of collective work. In addition to pay equity policies and equal wages between jobs of the same kind, surpluses generated by cooperatives, if any, are redistributed to members in the form of patronage allocations, that is to say pro rata of the work done.

SDGs identified for forestry workers' cooperatives in Quebec

The very existence of forestry workers' cooperatives depends on their ability to recruit employee-members and provide them with quality and sustainable jobs in the forestry sector. In order to do so, the workshop participants consider the sustainable management of forests, innovation and infrastructure modernization as well as partnerships as important SDGs for the success of their cooperatives and their capacity to offer the best possible working conditions to their members.

The cooperatives thus take the necessary measures to comply with laws and regulations regarding sustainable development of the forest land in Quebec. The respondents specify that they ensure the continuous improvement of their practices, the maintenance of their forest certifications and the training of their members, both technically and in terms of sustainable forest management and applicable regulations. Forestry activities that comply with the legal framework and are certified are generally recognized to efficiently promote sustainable forest management (Pellegrini, 2011).

In addition to their certifications, forestry workers' cooperatives mention a number of internally adopted practices aimed at managing their negative environmental impacts. For example, they mention measures to reduce the consumption of water and energy in their various buildings (head office, forest camps). The modernization of forestry equipment, machinery and infrastructure is also part of this objective of optimizing efficiency and reducing harmful impacts on the environment. These measures are complemented by the management of hazardous residual materials and the limitation of the use of chemicals, among others.

As organizations operating in market contexts, forestry cooperatives must find ways to capture part of the value created or preserved by the sustainable management of forest resources to finance the investments necessary for its implementation (Gertler, 2001). Thus, the cooperatives encountered endeavour to develop a range of new products and services in order to diversify their activities, ensure their longevity and increase employment opportunities. Investments in research and development and the establishment of partnerships are implemented to optimize the use of forest resources and to valorize forest residues and wood waste, transforming them into valuable subproducts.

In recent years, some of them have developed activities related to the forest bioeconomy¹. They specify, among other things, their concern to develop forest biomass as a source of renewable energy. Forest biomass is, in theory, all the biological material from trees and plants. In practice, it comes essentially from four sources (Natural Resources Canada, 2014, p. 4):

- traditional forest management by-products - residues from commercial cutting, thinning, brush cutting, pruning, or from trees affected by natural disturbances;

- industrial processes by-products, such as bark, sawdust, wood shavings and chips or spent pulping liquor;
- construction, renovation or demolition residue;
- trees from short-rotation plantations.

Until now, forestry workers' cooperatives have been mainly interested in the valorization of cutting by-products and non-market stems, which are usually left on the ground (CSMOAF, 2017). The valorization of forest by-products from industrial wood processing, construction, renovation and demolition processes could represent an interesting commercial strategy from the point of view of responsible production and consumption but has not been mentioned by the cooperatives met.

Forestry workers' cooperatives thus establish numerous research and development, business and training partnerships with private, cooperative and public partners in order to achieve their objectives. These partnerships aim in particular to train and recruit qualified workers, to diversify their activities and to innovate in their offer of products and services.

SDGs identified for local communities of forestry workers' cooperatives in Quebec

Workshop participants view the establishment of sustainable communities, poverty alleviation and the sustainable management of terrestrial ecosystems as the most important SDGs to achieve at the local level. These SDGs highlight the links that participants establish between forestry activity, income generation and the socio-economic vitality of their region. These interrelations are all the more important in forest communities, where the forestry sector represents a significant number of available jobs. The most recent data show that in 2000, 264 Quebec municipalities were defined as being mono-industrial, that is to say that the majority of jobs were associated with industrial activities in the forestry sector. For 140 of them, more than 90% of jobs were related to this industry (Rouleau, 2014; cited in Moreau and Guénette, 2016). Dependence on forestry activity remains a reality for some regions even today. According to the Fédération québécoise des municipalités (2017), one in fifteen jobs is related to forests in rural areas.

In addition to their contribution to the local job market and consequently, to the local economic vitality often necessary to maintain local access to basic services, the forestry workers' cooperatives offer direct support to their communities. This support is manifested by their participation in numerous regional committees and councils, financial and material support to local organizations, the organization of and participation in local community events and local procurement policies. In some situations, cooperatives have also acquired local businesses that were in the process of being closed, in order to maintain economic activity in the region. Furthermore, Pérotin (2017) points out that unemployment has more far-reaching than strictly economic negative impacts, particularly on health. Job preservation can therefore reduce the negative social consequences of unemployment and the pressure on community resources such as social services, in addition to having a positive effect on local tax revenues.

SDGs identified for members of agroforestry cooperatives in Honduras

The SDGs identified by agroforestry cooperatives in Honduras regarding their members are concerned with the fight against poverty, economic growth and decent work, gender equality, partnerships and peace, justice and the effectiveness of institutions.

Voluntary and open membership, the first cooperative principle (ICA, 1995), promotes access to collective ownership of the cooperative and to the economic resources associated with it. "Having access to and control over resources gives people the power to escape poverty" (FAO and AgriCord, 2016, p. 6). Therefore, integrating new members into Honduran agroforestry cooperatives helps strengthen the economic and even social integration of more people, thereby reducing poverty and inequality. The cooperatives met say they are working towards the integration of new members from cities and other rural areas, essentially by the creation of new jobs. The accessibility and affordability of membership could also allow more people to take advantage of the benefits of membership. FAO and AgriCord (2016) specify that:

One of the main contributing factors to poverty is the lack of access to land, technology and finance. By coming together in formal organizations, smallholder farmers can gain joint access to resources, set up small enterprises and work their way out of poverty. [...] Trees are often seen to offer the prospect of long-term income and an economic safety net; they act as a store of potential (and increasing) wealth. (p. VIII)

However, practices specifically aimed at integrating the poorest people into Honduran cooperatives were not mentioned by the research participants. As pointed out by De Jong *et al.* (2018), the impact of agroforestry cooperatives in the fight against poverty may remain more limited in the absence of measures to this effect, since the majority of smallholders are generally not part of the poorest sections of the population. That being said, agroforestry cooperatives in Honduras say they are making many efforts to diversify sources of income and jobs for members of the local community. Resin extraction activities are increasingly combined with forest harvesting as well as organic farming, marketing of shade-grown coffee, fish farming, breeding of laying hens, tree nursery management and manufacturing of furniture, soaps and disinfectants. “Even small amounts of forest-derived earnings help to bridge income gaps and so play a critical role in livelihood security”, acting as “natural insurance” for peasants (Sweeney, 2003, p. 2). For members of agroforestry cooperatives, often subsistence farmers, this income reduces the risk associated with a single activity which is, moreover, dependent on climatic conditions (Sweeney, 2003; Johnson, 1998).

This additional income is supplemented by access to loans, equipment and technical training offered by cooperatives. The purchase of machinery and technological equipment as well as the various services offered by the cooperative, such as the marketing of harvested agroforestry products, aim to increase the productivity of members and their access to markets. The cooperatives also give credit for the basic food basket, in order to promote food security for the most vulnerable segments of the population, and offer emergency assistance in the event of illness or death. Internal regulations also ensure equal remuneration for equal work and measures are taken to ensure the safety of workers.

Efforts aimed more specifically at integrating women and young people into cooperative membership can also help to fight poverty and reduce inequality. The agroforestry cooperatives sponsor the maternal home in order to increase the financial autonomy of women in addition to forming, internally, gender and youth committees, which aim to promote the integration of women and young people in the cooperative, in the bodies management and on the boards of directors and supervisory boards. Effective governance structures and mechanisms are key for the long-term survival of cooperatives (Jones, 2003).

Agroforestry cooperatives in Honduras maintain many partnerships aimed at increasing the skills of their members in sustainable forest management, processing and marketing of forest products as well as in agroforestry. They mention the establishment of alliances with government institutions, universities and international cooperation organizations, such as SOCODEVI, a Quebec organization dedicated to international development by the structuration of the cooperative sector.

SDGs identified for agroforestry cooperatives in Honduras

The workshop participants identified the challenges of sustainable management of terrestrial ecosystems, responsible consumption and production, economic growth and decent jobs as well as access to education as the main SDGs to be achieved to ensure the longevity of their cooperative.

The benefits that members and the community derive from the cooperative and its activities are the main justification for the existence of agroforestry cooperatives. In order to sustain these benefits, Honduran agroforestry cooperatives must, however, be able to maintain the forest rights granted by the government. From the point of view of the State, what justifies the existence of agroforestry cooperatives is first of all their capacity to play an active role in the protection of forests and the collective management of forest resources (Jones, 2003).

Thus, a forest management plan and an operational plan are required by the national government, before any timber harvest. They must be approved by AFE/COHDEFOR and the amount of the royalties paid depends on the forecast

of volumes of harvested wood established in the operational plans (Jones, 2003). Agroforestry cooperatives are also responsible for paying and organizing “a fire crew each dry season to put out fires and manage controlled burns” (Jones, 2003, p. 44). All the cooperatives mention fulfilling these various obligations and add that they pay particular attention to monitoring and controlling pests; monitoring committees are set up for this purpose. Agroforestry cooperatives also report that special plans for resin extraction have been adopted or are under development, although such plans are not required by AFE/COHDEFOR (Jones, 2003). These plans aim to facilitate the reconciliation of resin extraction and timber harvesting activities of cooperatives by ensuring that the *resineros* are not disadvantaged by the harvesting of wood on their plot. A successful integration of these two business activities can in fact be beneficial on both counts. “This integration is nearly essential for the long-term sustainability of resin tapping because a tree can only be tapped for a finite number of years. Without logging to encourage new regeneration of trees, cooperatives will eventually run out of trees to tap” (Jones, 2003, p. 18).

Agroforestry cooperatives also seek to make their production more responsible. They are committed to reducing and treating waste, particularly in carpentry workshops, and to replacing chemicals with natural products during the resin extraction and wood transformation processes. In addition, they carry out activities related to raising awareness and training community members on various aspects related to environmental protection and the adoption of responsible agroforestry practices. Organic cultivation, reduction of burns on agricultural land, management of the shade of coffee, maintenance of biodiversity, reduction of the use of chemicals, protection of watercourses and adequate management of residual water generated during the coffee washing process are some of the themes covered in training activities carried out by the cooperatives. The latter also carry out reforestation and monitoring of water sources as well as restoration of arable soils. The purchase of forest land for reforestation has also been mentioned among the practices of some cooperatives. Lastly, some cooperatives have already obtained forest certification, while the others are in the process of obtaining it.

A majority of cooperatives have set up education committees. The training activities offered concern sustainable farming practices as well as the development of alternative sources of income to contribute to members’ food and economic security and enhance their resilience in the face of economic or environmental shocks. Agroforestry cooperatives in Honduras also train their members on local social issues, such as non-violence. Some offer primary, secondary and university scholarships. Finally, members who participate in the activities of their cooperative, whether in governance structures or special committees, have the opportunity to develop new skills in terms of leadership, management or accounting, for example.

SDGs identified for local communities of agroforestry cooperatives in Honduras

Participants in the discussion workshop identified drinking water and sanitation, gender equality, health and well-being and food security as the more important SDGs for their communities. They all mention practices related to the development of infrastructure and local organizations among the measures taken by their cooperative.

The practices listed by the participants are financial, and sometimes material, support for school and religious infrastructure, as well as to community drinking water management committees. Some cooperatives have also set up medical brigades and a life insurance offer for their members. Similarly, the construction of community buildings, drinking water tanks, housing for community members or health centres are among the projects carried out by Honduran agroforestry cooperatives. The latter finally mention their participation in the electrification of the community, in particular by means of solar panels, and in the opening, improvement and maintenance of roads. These different projects are consistent with the ambition of the Honduran social forestry system from the start. Since their appearance, successful agroforestry cooperatives have invested in their communities. “The communities benefit from the cooperatives in the form of increased economic stability, direct or indirect assistance from the cooperative for community projects, and forest and water conservation near the communities” (Jones, 2003, p. 70).

Linking practices to SDGs’ targets

The practices listed by workshop participants help identify the current commitment of forestry cooperatives in Quebec and Honduras to the SDGs. In order to understand the potential contributions of the forestry cooperatives met, we associated the practices listed by the research participants with the targets specifying each of the SDGs.

Table 3 presents the results obtained for Quebec forestry workers' cooperatives and for Honduran agroforestry cooperatives.

Table 3. UN targets linked to practices described by participants to workshops

		<i>Workers' cooperatives</i>	<i>Agroforestry cooperatives</i>
1.	No poverty	-	1.4, 1.5
2.	Zero Hunger	-	2.1, 2.3, 2.4
3.	Good health and well-being	3.4, 3.8	3.8
4.	Quality education	4.4	4.1, 4.4
5.	Gender equality	5.1*, 5.5*	5.1, 5.5
6.	Clean water and sanitation	6.3, 6.4, 6.6	6.1, 6.3, 6.6, 6.b
7.	Affordable and clean energy	7.2	7.1
8.	Decent work and economic growth	8.2, 8.4, 8.5, 8.6, 8.8	8.2, 8.5, 8.6, 8.8
9.	Industry, innovation and infrastructure	9.1, 9.2, 9.4, 9.5	9.1, 9.3
10.	Reduced inequality	10.2, 10.3, 10.4	10.2, 10.3, 10.4
11.	Sustainable cities and communities	11.3	11.1, 11.4, 11.a
12.	Responsible consumption and production	12.2, 12.5, 12.8	12.2, 12.5, 12.8
13.	Climate action	13.2	13.2, 13.3
14.	Life below water	-	-
15.	Life on land	15.1, 15.2, 15.5	15.1, 15.2, 15.5
16.	Peace, justice and strong institutions	16.6, 16.7	16.6, 16.7
17.	Partnerships for the goals	17.17	17.17

** Politics and programs under development*

This classification shows that forestry workers' cooperatives in Quebec and agroforestry cooperatives in Honduras adopt practices related to all of the SDGs, with the exception of SDG 14, which concerns the conservation and sustainable exploitation of oceans and seas. The absence of practices related to SDG 14 can be explained by the location of the forestry cooperatives studied. It is not excluded that forestry cooperatives active in coastal forest environments could contribute to this SDG.

The practices implemented in connection with the fight against poverty and food security are, however, specific to agroforestry cooperatives in Honduras. Although practices targeting the most vulnerable populations were not mentioned either by Honduran cooperatives or by Quebec cooperatives, the former act more directly on access to basic services, ownership and control of land and other forms of property (target 1.4) and on reducing people's exposure and vulnerability to economic, social or environmental shocks (target 1.5). Keeping members in a situation of non-poverty, which is not highlighted by current targets, can still represent an equally important contribution (Gregersen *et al.*, 2017). A certain stability of employment or income, access to the cooperative's property and its resources as well as integration into the forest value chain can help keep members in a situation of non-poverty. This form of contribution can also apply to Quebec forestry workers' cooperatives, especially in the communities where they are the main employer.

Processes associated with avoidance of unsustainable development are just as important as processes that appear to lead to more sustainable development. Processes that help non-poor forest dwellers avoid moving into, or back into poverty are just as important as those designed to get the poor out of poverty, although perhaps not as politically visible. In a [sustainable development] context, the results of both contribute to the same societal aim of reducing poverty on a sustainable basis. (Gregersen et al., 2017, p. 13)

Besides, the participation of forestry cooperatives in the socio-economic vitality of their community can have considerable effects on maintaining access to certain basic services. Cooperatives help to create an environment conducive to investment by individuals, businesses and governments and to facilitate networking between local development actors (Gertler, 2001; Isola *et al.*, 2005). Their presence can thus strengthen the resilience of the communities where they are active. This contribution is even more evident when cooperatives represent one of the only economic actors in a locality, as is the case in Honduras and in some municipalities in Quebec. This contribution is highlighted by the workshop participants. Participants from Honduras indicate that their cooperatives provide financial or material support for initiatives aimed at facilitating access by members of their community to health care, educational establishments, drinking water, energy, road infrastructure and even housing. The practices mentioned by Quebec participants in this area are more formalized internally, in terms of policies and programs, and are aimed more specifically at their members. This difference undoubtedly stems less from a tenuous commitment on the part of Quebec cooperatives to facilitate access to these basic services than from the coverage of these services by other players, such as the State. Group insurance or drug insurance programs, as well as training and scholarships, are offered to members of Quebec cooperatives to complement the services available.

There are also some differences in the integration of women into the activities of cooperatives and their decision-making bodies. While programs to this effect are currently developed in forestry workers' cooperatives, measures to strengthen the participation and empowerment of women are already being implemented in cooperatives in Honduras. That said, gender-focused policies of organizations supporting Honduran forestry cooperatives, such as SOCODEVI, are likely to be largely influencing the establishment of such measures (Fecteau and Escot, 2013). In addition, the scarcity of labor and the demanding nature of forestry work currently complicates the recruitment of members, both male and female, by Quebec forestry workers' cooperatives (CSMOAF, 2017).

The role given to forestry cooperatives in national forest management strategies can surely explain other noted differences between the practices of Honduran and Quebec cooperatives. Within the Honduran social forestry system, agroforestry cooperatives occupy a prominent place, explicitly recognized by the government, in the management of public and community forests. Although institutional improvements are still required (Jones, 2003), agroforestry cooperatives enjoy a contract for the usufruct of forest resources from public forests under their responsibility, subject to certain conditions. As a corollary, these responsibilities underlie a certain obligation to protect and manage the water sources, soils and forests present on the territory, all for the purpose of reducing poverty and developing forest communities. Agroforestry cooperatives thus focus their practices more on raising awareness and training members of their community, on reconciling uses within the forest territory - by developing complementary and sustainable agroforestry activities for example - and on the marketing of harvested forest products. In fact, forest tenure can have important effects on the success of any community forestry endeavour or

conservation effort. The formal or informal tenure rights enjoyed by cooperatives encourage groups to manage and protect the forest rather than destroy it (Jones, 2003).

Even though community-based forest enterprises do not always work well and there have been cases of mismanagement, there are many examples where CFEs have reduced deforestation and illegal logging, generated employment and income opportunities for impoverished communities, and brought about more sustainable forms of forest use. (Del Gatto, 2013, p. 1)

Quebec forestry workers' cooperatives have a more limited role in forest management. Decisions relating to the management of public forests are taken by the government and forestry workers' cooperatives intervene in the forest and access resources according to supply guarantees and sub-contracting agreements. They have an obligation to comply with applicable laws and regulations but have no long-term usufruct rights. Therefore, they must train their worker-members in best forestry practices, maintain their certifications and modernize their equipment, machinery and infrastructure to increase their productivity and remain competitive. Their innovation efforts are more oriented towards the development of economic activities peripheral to forest harvesting, such as optimizing the use of woody and non-woody forest resources, or the valorization of forest residues for bioenergy production. As they act at the beginning of the forest value chain, they are more likely to feel the effects of changes in the industry and the timber supply on jobs (Moreau and Guénette, 2016; CSMOAF, 2017). Forestry workers' cooperatives continue to give an important place to the creation of decent jobs for their members, to the socio-economic development of their community and to the adoption of sustainable forestry practices. Nevertheless, their insecure access to forest resources and to forestry contracts as well as their limited role in forest management make long-term planning difficult. This situation could, in the long run, limit their capacity to develop and adopt sustainable practices other than for strictly economic reasons. Yet, the commitment of cooperatives to sustainable development relies on their ability to combine their members' motivations of economic utility to a collective social change project (Touzard and Vandame, 2009). Furthermore,

For some co-operatives, often those focused on competing for market share or on survival in a market, a focus on the transformative potential of co-operatives as a distinctive form of business seems more like ideology than like good business. This kind of thinking can be damaging to the co-operative movement as it makes it more difficult to see the co-operative advantage, and thus increases vulnerability to isomorphic practices. Co-operatives that mimic investor-owned businesses may be in danger of losing their identity as co-operatives, perhaps coming to see themselves as hampered rather than strengthened by the "constraints" of democracy and other co-operative principles. (Brown et Novkovic, 2015, p. 13)

This observation is even more worrying if we consider that part of the potential contribution of forestry cooperatives to SDGs 10 and 16 seems to take root in their cooperative nature. Quebec and Honduran laws governing cooperatives and cooperative principles specify the terms of access to membership, redistribution of surpluses as well as the democratic governance structure of cooperatives. Collective property, free and open access to membership, democratic control and the remuneration structure of cooperatives constitute considerable assets in the reduction of inequalities. Measures to favor the integration of new members, whether it concerns membership expansion strategies, training aimed at increasing their skills, creation of new jobs or measures to facilitate their access to the market, also support the reduction of inequalities. The cooperatives' role in that matter seems even more important considering that the achievement of SDG 10 is currently compromised in Canada and in Honduras (Sachs, Schmidt-Traub, Kroll, Lafortune and Fuller, 2018).

The democratic and transparent management of cooperatives in Honduras was less highlighted by the research participants. While Quebec participants emphasized the transparency of communication and consultation with members for strategic decision-making, Honduran participants simply mentioned the main governance structures associated with cooperatives, such as the boards of directors and the general assembly of members. Research shows that some community forestry cooperatives tend to integrate sometimes unequal, even elitist social structures within them (Cronkleton, Pulhin and Saigal, 2012; Cronkleton, Barry, Pulhin and Saigal, 2010; Jones and Orr, 2006; Mahdavi, 2015; Mohammed and Inoue, 2014; Saigal, Dahal and Vira, 2009). This is likely to reduce transparency and

sometimes equity in cooperatives. The results of our research do not indicate that this is the case for agroforestry cooperatives in Honduras. Formalized integration and training measures for current and future members could promote the consolidation of a democratic and transparent governance structure and mechanisms, all the more important since participatory governance helps to improve the well-being of members (Hudon and Huybrechts, 2017) and is likely to bring greater respect for local culture and its values (Isola *et al.*, 2005).

The classification of practices according to targets shows, however, that the potential contribution of forestry cooperatives to the SDGs is similar on several levels. For example, many practices are in place, both in Quebec and in Honduras, to consolidate and diversify the activities of forestry cooperatives and encourage the creation and maintenance of decent jobs in the forestry sector. The training of current members as well as measures related to the health and safety of workers are implemented by cooperatives in Quebec and Honduras even if the latter are rather in their infancy in these areas. Pay equity policies and equal pay for jobs of the same kind, as well as redistribution of surpluses generated by cooperatives, where applicable, improve the quality of the jobs created in addition to helping to reduce inequalities.

As local actors in the forest sector and leading players in the forest value chain, forestry cooperatives are in a good position to implement, on the ground, climate actions (SDG 13) through sustainable management of forests. Research participants agree on their role in this area and mention their contribution to this SDG but find it more difficult to explain it in their practices. The production of forest plants, afforestation, reforestation, forest restoration, silvicultural work and the valorization of forest biomass are among the practices listed by the research participants to explain their contribution to climate action. However, the targets affected by these practices fall under SDG 15 and are not linked to SDG 13, although a clear link is established between forest health and carbon sequestration and storage (Intergovernmental Panel on Climate Change, 2014). "Forests are mitigating climate change, and are also adversely affected, leading to the need for adaptive management in order to cope with climate change" (Hazarika and Jandl, 2019 p. 6).

The SDG 13 targets are formulated to encourage the establishment of national policies, strategies and mechanisms. It therefore remains more difficult to associate them with practices at the organizational level. The use of bioenergy and low-carbon bioproducts as substitutes for more carbon-emitting alternatives nevertheless represents a strategy envisaged by the Canadian Council of Forest Ministers (2017) to mitigate climate change (SDG 13). The contribution of forest biomass valorization activities to the mitigation of climate change remains, however, a function of the energy sources - more or less carbon-emitting - that they replace. Additional steps should be taken to clarify and document the practices of forestry cooperatives and their effects in the fight against climate change.

Finally, the forestry cooperatives in Honduras and Quebec are establishing numerous partnerships in multiple fields in order to achieve their economic, but also social and ecological objectives. Although it was little or not mentioned by the participants, the ability of cooperatives to come together in a sectoral way, in particular through a federation, increases their potential for defending and representing the interests of their members and their community, sharing sustainable practices and pooling resilient infrastructure (Isola *et al.*, 2005). While it is true that organizations' commitment to sustainable development depends on choices made at the organizational level, the potential for forestry cooperatives to contribute to the SDGs could be increased tenfold by the unification of their efforts within their respective network and the establishment of a collective strategy.

Concluding remarks

The SDGs present the main challenges to be met by 2030. They call for the mobilization of all actors and their explicit commitment to them. In terms of sustainable development, the ability for an organization to translate the challenges of sustainable development into its strategic directions is what sets it apart from other organizations. The explicit integration of economic, social and ecological objectives into its core business and its purpose is required to formalize its commitment and guide its actions (Capron *et Quairel-Lanoizelée*, 2015).

As part of this research, we were interested in the commitment of forestry cooperatives to the SDGs, according to the perception of their members and the practices implemented. The results of the research thus make it possible to better understand the nature of the current commitment of forestry workers' cooperatives in Quebec and

agroforestry cooperatives in Honduras towards the SDGs, as well as to establish a number of avenues regarding their potential contribution. The results of these workshops indicate that they adopt practices related to all the SDGs, except for SDG 14, and are therefore likely to contribute positively to SDGs if they formally commit to them.

The main objective of the forestry sector, in the context of the SDGs, remains that of ensuring the implementation of practices that are consistent with sustainable forest management. As local actors in the forestry sector and leading players in the forest value chain, forestry cooperatives are well positioned to implement such practices. However, they must be able to identify the effects of their practices in order to optimize their positive spinoffs and reduce their negative ones. Taking into account the interrelationships between the SDGs associated with their practices could help better anticipate these effects. Well-managed forests can have a positive impact on many SDGs. Yet, there is a risk of goal conflicts between uses of forest-based goods and services. Acknowledging these conflicts, and other unintended consequences of their practices, is one important step for forestry cooperatives to gain, maintain or restore their legitimacy in the eyes of salient stakeholders such as governments and local communities. Integrating more formally the SDGs into their governance could also be the key to a greater recognition of their role in the sustainable management of public and community forests.

As mentioned by Baumgartner (2019), the main challenge in forest sustainable management “is to balance environmentally-related SDGs like SDG 15 with other human-centered SDGs” (p. 6). Forestry workers’ cooperatives and agroforestry cooperatives both mentioned their willingness to preserve forests and forest resources in the long term since their very survival and, most importantly that of their community, greatly depends on it. According to the practices mentioned by the respondents, forestry cooperatives are currently well engaged towards three important impact opportunities highlighted by the Forest Solutions Group, namely “working forests”, “communities” and “people” (see Table 1). This shows the importance that both agroforestry and forestry workers’ cooperatives place on maintaining healthy forest communities, envisioning forest sustainable management as a way to contribute to “other human-centered SDGs”. Forestry workers’ cooperatives also make efforts to develop the forest bioeconomy, another impact opportunity identified by the Forest Solutions Group.

The research shows that some contextual factors can influence the commitment of cooperatives to sustainable development. Agroforestry cooperatives were created to halt deforestation and to promote the development of forest communities. They are inserted into a social forestry system set up by the government for this purpose. Even if their only apparent accountability is to provide forest management and operational plans, a large part of the practices listed by the participants to this research concerns the improvement of their members’ living conditions and of the community infrastructure. In contrast, forestry workers’ cooperatives seem currently to be seen more as economic agents rather than local development actors by the government, thereby limiting their role and maintaining them in a position of dependence on the various actors in the Quebec forest value chain. The capacity of forestry workers’ cooperatives to engage towards the SDGs could be reinforced by a more formalized role in local forest management or by the creation of new local partnerships allowing them to reduce their dependence on work carried out in public forests, two paths they have been pursuing for a few years already.

Although the research results cannot be generalized to all cooperatives, or even to all forestry cooperatives, it is possible to draw certain hypotheses. For example, the collective participation of members in ownership, control and results (Desroche, 1976), characteristic of cooperatives, could represent a considerable advantage in contributing to the fight against poverty (SDG 1), the reduction of inequalities (SDG 10) and the promotion of just, peaceful and inclusive societies (SDG 16). By allowing members to participate collectively in property ownership, cooperatives promote their rights to economic resources and property (target 1.4) and foster their empowerment and social and economic integration (target 10.2). The participation of members in control, through a democratic governance structure and mechanisms, ensures greater accountability and transparency within the organization (target 16.6) and ensures that dynamism, openness, participation and representation characterize decision-making (target 16.7). Finally, collective participation in results contributes to ensuring equal opportunities and reducing inequalities in results (target 10.3), through policies, in particular budgetary and salary policies, promoting progress towards greater equality (target 10.4). It would be interesting to take this reflection further by analyzing the contribution of cooperatives from other sectors to the SDGs. Considering the potential contribution of cooperatives to the SDGs, the contextual factors enhancing or reducing the capacity of cooperatives to commit effectively to the

implementation of the SDGs should be the subject of future research, particularly with regard to cooperatives working in the natural resources sector.

In summary, since they describe the main social, ecological and economic challenges to be met, the SDGs represent an important strategic tool for cooperatives wishing to make a concrete commitment to sustainable development. Integrating the SDGs into their strategic directions, as well as assessing their progress and communicating them transparently to their various stakeholders, could help increase the legitimacy of cooperatives as sustainable development actors.

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Notes

- ¹ “The forest bioeconomy refers to the economic activity generated by converting sustainably managed renewable forest-based resources, primarily woody biomass and nontimber forest products, into value-added products and services using novel and repurposed processes.” (Canadian Council of Forest Ministers, 2017, p. 6)