Improving environmental management through indigenous peoples' involvement

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Highlights

• Indigenous peoples' involvement to improve environmental practices are studied.
• The focus was on organizations from the natural resource extraction sector.
• Semi-structured interviews with 33 respondents were carried out.
• Risk management issues, legitimacy benefits and regulatory requirements are analyzed.
• Practices and benefits of fully engaging with indigenous peoples are scrutinized.

Abstract

The objective of this paper is to investigate how indigenous peoples' involvement can improve the environmental management practices of organizations in the natural resource extraction sector. Based on a qualitative study and semi-structured interviews with 33 respondents, this study sheds more light on the environmental involvement of a particular category of stakeholder rarely considered in the managerial literature. The findings show the risk management issues, corporate legitimacy objectives, and regulatory requirements underlying this type of environmental involvement. We also identify the main practices and benefits of fully engaging with indigenous peoples on environmental issues, particularly in terms of knowledge of local ecosystems and sensitive sites, biodiversity management, development of environmental values within the organization, and support in environmental monitoring. The paper contributes to the literature on both environmental management and relationships between extractive organizations and indigenous communities. Managerial implications and avenues for future research are also discussed.

Keywords: Environmental management; Indigenous people; Social license to operate; Community engagement; Biodiversity; Stakeholder relationships

1. Introduction

The extractive industry (i.e. mining, gas and oil extraction, forest harvesting) has often been reproached for the range and gravity of its environmental and social impacts (e.g., Hilson, 2012; Kitula, 2006; Moomen and Dewan, 2017b; Whitmore, 2006). This industry often extracts raw materials and natural resources in remote, environmentally and socially sensitive locations (Boiral et al., 2018; Moomen and Dewan, 2017a; Parsons, 2008; Whitmore, 2006). In many cases, these locations are protected areas inhabited by indigenous communities with various cultural specificities and a strong attachment to their land (Howitt, 2012; MacKay, 2004; O'Faircheallaigh, 2013b). As a result, extractive organizations have been facing increasing pressures, particularly from indigenous communities located near operation sites. Indigenous, aboriginal, or native peoples[1] can be defined as "populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions" (International Labour Organization, 1989). To respond to the pressures from these stakeholders, organizations have implemented various collaborative and community-based initiatives intended to address specific needs and requirements, including environmental protection (Al-Abdin et al., 2018; Jenkins and Yakovleva, 2006; Kemp et al., 2011; Owen and Kemp, 2013). Such initiatives are generally characterized by the engagement or involvement of indigenous peoples whose values, traditions, and land rights need to be seriously considered by organizations (Kepore and Imbun, 2011; Lockie et al., 2008; O'Faircheallaigh, 2013a).

The objective of this paper is to analyze how involving indigenous communities can improve how organizations in the extractive sector manage environmental issues. The analysis of such involvement has clearly been overlooked in the literature and is important for ethical, managerial, and environmental reasons. First, although indigenous people represent around 370 million individuals across the world and occupy a large proportion of the land area, their rights, traditions, and knowledge have often been ignored or violated by states and organizations alike (Corntassel and Bryce, 2012; Oldham and Frank, 2008). Those violations raise serious ethical issues (e.g., land rights, protection of customs and religious traditions, and the preservation of natural habitats and sacred areas) that are often closely linked to the protection of environmental resources on which aboriginal people depend for their survival (Adeola, 2000; Meyer, 2012). In this perspective, involving indigenous people in extractive organizations' environmental objectives and programs responds to an ethical requirement for more justice for local communities, in part by providing opportunities for their participation in activities that can significantly affect their traditional way of life. Second, such involvement can improve an organization's social license to operate (SLO), which is needed to ensure the social acceptability of activities that may have significant environmental and social impacts (Boutilier, 2014; Parsons et al., 2014; Prno and Slocombe, 2012). Although the search for social acceptability has been highlighted in many studies on corporate-indigenous relationships (e.g., Crawley and Sinclair, 2003; Lertzman and Vredenburg, 2005; Meesters and Behagel, 2017; Murphy and Arenas, 2010; Whitmore, 2006), the finer details of native people involvement in the environmental practices of organizations have clearly been overlooked in the literature.

[1] In this paper, the concepts of indigenous, aboriginal, and native people are considered as synonymous.

Third, indigenous peoples' involvement in environmental issues could help not only to prevent conflicts, but also to manage complex environmental issues such as biodiversity conservation and environmental impact monitoring, which require a good knowledge of the surrounding ecosystems. Although the relevance of traditional knowledge has been evidenced in various areas, including the pharmaceutical and medical fields (e.g., Case et al., 2005; Sidhu et al., 2007; Sidhu and Pannu, 2010), there is a need to further investigate how this knowledge can be translated into organizational practices to improve environmental management.

The remainder of the paper is organized as follows. First, the literature on environmental management and relationships with indigenous populations will be presented and explained. Second, the methods of the study conducted in the extractive sector will be described. Third, the main findings will be presented. These revolve around three themes: building trusting relationships with indigenous populations, promoting environmental collaboration, and improving environmental management through indigenous peoples' involvement. Contributions to the literature and managerial implications are described in the discussion section.

2. Literature review

2.1. The impacts of extractive industries and pressures from local populations

The development of extractive industries has been marked by strong external pressures and conflicts with local populations, particularly indigenous communities (Hilson, 2002; Jenkins, 2004; MacKay, 2004; Whiteman, 2009). These pressures concern many facets of sustainable development and have led to questions about the legitimacy or even the survival of organizations that exploit natural resources. Among other things, extractive operations have been targeted for their impacts on local ecosystems, including biodiversity loss, river pollution, hazardous waste disposal, and atmospheric emissions (e.g., Azapagic, 2004; Boiral et al., 2018; Jenkins and Yakovleva, 2006; Kitula, 2006; Moomen et al., 2016). They have also been criticized for a lack of consultation or insufficient partnership with local populations (e.g., Jenkins, 2004; Murphy and Arenas, 2010; Owen and Kemp, 2013). Because extractive projects are often located on or near ancestral lands, these projects may raise serious issues in terms of respect for local traditions, access to resources, and benefit sharing with indigenous populations. Various studies have analyzed the impacts of mining, energy, or forestry exploitation on the culture, traditions, and survival of populations whose way of life is embedded within their local ecosystems (e.g., Gilberthorpe and Banks, 2012; Jenkins, 2004; Lertzman and Vredenburg, 2005; O'Faircheallaigh, 2013b; Prpich et al., 2019). Site closures and the long-term social and environmental impacts of extractive operations have also been debated in the literature (Cooke and Johnson, 2002; Laurence, 2006; O'Faircheallaigh, 2013a; Whitmore, 2006).

Some conflicts between extractive companies and indigenous communities have received extensive media attention, illustrating the seriousness of sustainability challenges for this sector. These conflicts frequently occur in countries that are economically dependent on

natural resource exploitation and that contain large indigenous communities; Canada, Brazil, and Australia are prime examples. Indigenous communities may even block extractive projects entirely. This is the case, for example, of the giant open gold and copper mine project of KGHM Ajax Mining Inc. in British Columbia (Canada). The Skeetchestn Indian Band and other First Nations communities rejected this project, which was located on their ancestral lands (McSheffrey, 2017). Likewise, the CAD 6.8 billion Trans Mountain pipeline proposed by Kinder Morgan Energy Partners was strongly opposed by the Tsleil-Waututh First Nation and other communities on the basis of the environmental risks associated with oil transportation (Van Loon, 2016). Indigenous communities may also protest existing activities regarded as a threat to their survival. For example, the First Nations protest movement "Idle No More" has organized several mining-disruptive activities in Canada, including blocking rail lines and access roads to exploitation sites (Van Loon, 2016). Finally, although indigenous communities may accept or support the development of certain extractive activities within their territory, they may also exert pressures on companies to obtain greater benefits, particularly in terms of financial compensation. For example, the Arnhem Land Progress Aboriginal Corporation and the Rirratjingu Aboriginal Corporation have launched legal action against the Gove Operations' bauxite mine in Australia to obtain more royalties from the mining activities located near their communities (Davidson, 2016).

Whatever the nature of the pressures from local populations, the relationships with indigenous communities and the social acceptability of extractive projects seem to have become two of the main challenges in the development of natural resource-based activities (Jenkins and Yakovleva, 2006; O'Faircheallaigh, 2013a, b; Whitmore, 2006). As summarized by the chief executive of Premier Gold Mines Ltd, "one of the big things that is weighing on mining investment in Canada right now is First Nations issues" (Gordon and Martell, 2013).

2.2. Managing relationships with indigenous populations

The literature on the relationships between indigenous communities and organizations has mainly focused on the management of institutional pressures and the search for social acceptability, particularly through communication with stakeholders and community engagement. According to the scholarly literature, companies need to take into account the interests and concerns of native populations to improve the social acceptability of their operations; this is particularly true for the extractive industries (Boiral, 2013; Maher, 2018; Parsons et al., 2014; Prno, 2013; Prno and Slocombe, 2012). This search for social acceptability is often translated by the concept of the social license to operate (SLO), which can be defined as "the social approval of and support for organizational activities from stakeholders, particularly the local populations that may be affected by new project developments" (Boiral et al., 2018, p. 394). Various studies have analyzed the main factors influencing the SLO and the benefits of improving relationships with indigenous communities in the extractive industry (e.g., Crawley and Sinclair, 2003; Owen and Kemp, 2013; Parsons et al., 2014; Prno, 2013). Among other things, the importance of dialogue and consultation with these communities prior to the development of industrial activities has been highlighted (e.g., Anguelovski, 2011; Bruijn and Whiteman, 2010;

O'Faircheallaigh and Corbett, 2005). Such dialogue is intended to improve the social legitimacy of organizations and to prevent conflicts with local populations. Neo-institutional theory is often used to explain the measures implemented by organizations in this area (e.g., Deegan and Blomquist, 2006; Hall et al., 2015; Parsons et al., 2014). According to this theory, institutional pressures and the search for social legitimacy are the main drivers of the adoption of new practices by organizations. Nevertheless, such adoptions are not necessarily substantial; they may be superficial measures intended to improve corporate image rather than to significantly change internal practices (Boiral, 2012; Christmann and Taylor, 2006; Hrasky, 2011; Talbot and Boiral, 2015; Testa et al., 2018). In short, organizational measures adopted in response to pressures from indigenous populations are not monolithic. They can be analyzed critically (e.g., as the superficial adoption of practices or impression management techniques due to the conflicting interests of organizations and stakeholders) or more optimistically (e.g., organizational change, adoption of more efficient practices, integration of CSR in core business activities).

The critical perspective on corporations and indigenous communities has been dominant in the scholarly literature, probably due to a long history of conflictive relationships. Most studies have highlighted the negative environmental and social impacts of extractive activities on local populations (e.g., Morrice and Colagiuri, 2013; Szablowski, 2002). Cases of the forced displacement of populations, destruction of local fauna and flora, dispossession of natural resources, or cultural uprooting are well documented (e.g., Banerjee, 2000; Munarriz, 2008; Szablowski, 2002). Organizations' attempts to legitimate their operations near indigenous communities have been associated with a colonial or neo-colonial rhetoric by radical critical studies (Banerjee, 2000; Bobby Banerjee and Prasad, 2008; Munarriz, 2008). Irrespective of their political lenses, most critical approaches have highlighted the conflicting interests of corporations and indigenous communities, the misunderstandings between them, the lack of transparency of reporting practices in this area, and the superficiality of corporate measures intended to improve relationships with local stakeholders. First, whatever measures are implemented to minimize environmental and social impacts, the extraction of resources in fragile ecosystems on which local populations depend appears to be fundamentally detrimental to the interests of most indigenous communities (Banerjee, 2000, 2008; Bobby Banerjee, 2008; Parsons, 2008). Moreover, the differing perceptions on sustainability issues of organizations and local populations can be difficult to reconcile due to cultural, linguistic, and social differences (Meesters and Behagel, 2017; Whiteman, 2009). Second, corporate disclosures on sustainability issues—including relationships with indigenous communities—are often opaque, biased, and mostly intended to serve business interests rather than communicate transparent information to stakeholders (Kitula, 2006; Meesters and Behagel, 2017; Parsons, 2008; Wang et al., 2016; Whiteman, 2009). This lack of transparency provides support for the perspective that corporate social responsibility (CSR) initiatives are above all used as a marketing tool to control stakeholder perceptions (Basu et al., 2015; Coronado and Fallon, 2010; Devenin and Bianchi, 2018; Parsons, 2008). Third, CSR initiatives have been criticized for their superficiality and lack of substantial benefits for local populations (Kepore et al., 2013; Whitmore, 2006). Overall, the adverse impacts of extractive activities have been found to exceed their benefits for indigenous communities in many cases and to

have long-term social and environmental consequences (O'Faircheallaigh, 2013b; Whitmore, 2006).

Recently, a more optimistic perspective has emerged in the literature. This perspective is mainly focused on positive achievements and the importance of community engagement for organizations, without dismissing the seriousness of environmental and social impacts of extractive activities. First, CSR and the development of trusting relationships with indigenous communities are increasingly considered as part of the core business of extractive companies (Kepore and Imbun, 2011; Newenham-Kahindi, 2011). Earning an SLO must then not be only based on superficial actions and public relation activities but needs to be rooted in substantial initiatives. The absence of such initiatives seriously compromises the development or even the existence of extractive activities and undermines the credibility of the industry as a whole (Fidler, 2010; Imbun, 2007; Ruwhiu and Carter, 2016). Second, the perspectives of indigenous communities and corporations do not conflict on all projects or in all cases. Various studies have highlighted changes in the institutional environment (e.g., new regulations, internationalization of pressures for indigenous rights, tendency to develop negotiated agreements) that encourage partnerships rather than confrontation (e.g., Newenham-Kahindi, 2011; Ruwhiu and Carter, 2016). Moreover, certain organizations seem to have learned from past conflicts with indigenous communities and have consequently adopted more proactive approaches to limit negative impacts or try to positively contribute to the community (Jenkins, 2004). Third, although conflicts with local populations are well documented (e.g., Banerjee, 2000; Kemp et al., 2011; Whiteman, 2009), certain studies have focused on success stories or best practices in this area (e.g., Crawley and Sinclair, 2003; Kepore and Imbun, 2011; Lertzman and Vredenburg, 2005; Lin et al., 2015; Missens et al., 2007; Ruwhiu and Carter, 2016). Those practices generally revolve around the concept of community engagement, which has been defined as "the process of working collaboratively with and through groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people" (Tindana et al., 2007, p. 1857). Guidelines and codes of conduct to promote community engagement with indigenous populations have also been developed. For example, the International Council on Mining and Metals (ICMM) has developed a "good practice guide" on indigenous peoples and mining (International Council on Mining and Metals, 2015). According to this guide, community engagement practices must be based on 5 principles: listen to indigenous communities, allow adequate time for discussions, understand and respect indigenous peoples and their customs, ensure openness and clear and frequent communication, and use the local language.

2.3. Internalizing environmental issues in community engagement practices

The literature on the management of relationships with indigenous communities sheds more light on the impacts of extractive activities on local populations, the motivations behind community engagement in this area, and its benefits and contradictions. Nevertheless, although environmental protection is essential for most indigenous communities (Lertzman and Vredenburg, 2005; Noble and Birk, 2011; O'Faircheallaigh, 2013a), the current literature essentially focuses on the socioeconomic and political aspects

of community engagement. As a result, how community engagement can contribute, in practical terms, to improve corporate environmental management has clearly been overlooked in the literature. Likewise, the role and importance of indigenous communities in the environmental management of natural resource-based organizations are virtually ignored in the literature on environmental management, with a few exceptions (Clark, 2002; Hill et al., 2012; O'Faircheallaigh and Corbett, 2005). This gap in the literature requires further exploration for at least four reasons.

First, environmental issues are often at the heart of costly conflicts between organizations and indigenous populations, whose culture and way of life depend on the ecosystem. For example, the KGHM Ajax open gold and copper mine project was rejected by Canadian First Nation communities just after a conference on the environmental impacts of mining and the importance of preserving ecosystems by David Suzuki, a well-known environmentalist and scientist (McSheffrey, 2017). In certain regions, indigenous opposition to extractive activities has become widespread and increasingly well organized. For example, in Peru, indigenous populations have strongly opposed over 150 extractive projects, particularly in the regions of Apirimac, Ancash, and Cusco (TeleSUR, 2017). Risks of environmental contamination were the main cause of these conflicts, and the new Peruvian president's decision to lower environmental standards has fueled the opposition to extractive activities across the country. In this context, whatever the regulations in place, the preservation of ecosystems and the integration of environmental issues in corporate community engagement appear crucial to prevent future conflicts and to ensure the sustainability of extractive activities.

Second, a failure to integrate environmental issues can give rise to powerful alliances between indigenous rights and environmental movements that together rally against the development of extractive projects (Clark, 2002; Mills, 2011). Although they are not always aligned, these movements share many common points, including a concern for the preservation of natural habitats and traditional ways of life and opposition to the exploitation of natural resources and the uncontrolled expansion of industrial activities in remote areas. Alliances between environmental and indigenous movements can significantly increase institutional pressures against extractive organizations and undermine their image on a much larger scale. For example, the Cree communities of Northern Quebec sought the assistance of Greenpeace in protecting their ancestral territory from the deforestation activities of Resolute Forest Products, one of Canada's main forest and paper companies (Agence France-Presse, 2015; Northern Ontario Business, 2017). The "Resolute: Forest Destroyer" campaign implemented by Greenpeace resulted in a significant deterioration of the image of this giant forest company, which decided to sue Greenpeace for defamation. Resolute Forest Products' CAD 300 million lawsuit against Greenpeace was dismissed in court in 2017 (The Canadian Press, 2017). To avoid this type of pressure, which can have a disastrous impact on corporate image and profitability, companies need to obtain the support of indigenous people and, when possible, develop environmental initiatives in partnership with them.

Third, environmental protection is an integral part of most regulations and international treaties on indigenous rights. International treaties, which cover the main issues for

indigenous peoples (e.g., culture, education, community, health, identity), are commonly used as guidelines for national regulations as well as for community engagement practices, including in terms of environmental protection. For example, the United Nations Declaration on the Rights of Indigenous Peoples (United Nations, 2008) stipulates that "indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources. States shall establish and implement assistance programmes for indigenous peoples for such conservation and protection, without discrimination" (Article 29). Likewise, the Indigenous and Tribal Peoples Convention of the International Labour Organization (1989) indicates that "governments shall take measures, in co-operation with the peoples concerned, to protect and preserve the environment of the territories they inhabit" (Article 7.4). Certain environmental conventions also recognize the interdependence of indigenous rights and environmental protection. For example, the International Convention on Biological Diversity (United Nations, 1992) states that they recognize "the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components" (Preamble). Although international treaties and conventions can be used to develop collaboration agreements, there is a need to further investigate how environmental issues are managed with indigenous populations in practical terms.

Fourth, indigenous peoples' involvement in the environmental management of organizations could help to significantly improve corporate practices and performance in this area. Overall, local communities tend to have a greater attachment and connectedness to the surrounding environment, which encourages the adoption of pro-environmental behaviors (Raymond et al., 2011, 2010; Zhang et al., 2014). Moreover, one can assume that indigenous populations' knowledge of local ecosystems can aid in the identification and management of critical environmental issues. The relevance of traditional ecological knowledge in environmental protection in general has been the object of various studies in the ecology, biodiversity conservation, and anthropology literature (e.g., Barnhardt, 2005; Huntington, 2000; Kellert et al., 2000; Mauro and Hardison, 2000). Nevertheless, how this knowledge can be translated into practice by organizations remains underexplored. Such translation seems all the more important given that the recognition and enhancement of traditional knowledge are integral parts of most treaties and policies for indigenous rights and community engagement (Hill et al., 2012; Thornton and Scheer, 2012). Involving indigenous peoples in environmental management can also contribute to the development of a more decentralized, democratic, and community-based form of governance, which is increasingly valued in natural resource management (Gurney et al., 2016; Lane, 2003; Porter and Young, 1998). In this perspective, the integration of environmental management and community engagement can contribute to the conservation of natural ecosystems, respect of indigenous rights, and development of collaborative rather than conflicting relationships with local communities.

3. Methods

The objective of this qualitative study is to analyze how the involvement of indigenous communities can contribute to the improvement of the environmental management practices of organizations in the natural resource sector.

3.1. Data collection

The focus on the extractive sector is justified by its impacts on both natural ecosystems and nearby communities (Hilson, 2012; Kitula, 2006). Most respondents were involved in mining, forestry, or energy activities in various countries, particularly in Canada, which is one of the largest producers and exporters of natural resources. Moreover, most Canadian extractive activities are located in Northern regions traditionally occupied by indigenous communities. Over the past few decades, these communities have exerted increasing pressures on governments and extractive organizations over the recognition of their land rights, resource control, and environmental protection (Anderson et al., 2006; O'Faircheallaigh, 2010). This context has fostered the creation of collaboration agreements with indigenous communities (Missens et al., 2007; O'Faircheallaigh, 2013a; Wyatt et al., 2013) and the involvement of indigenous peoples in the environmental practices of organizations. The selection of extractive sector organizations was based on the Global Reporting Initiative framework database, which includes more than 47,000 sustainability reports.[2] The keywords "aboriginal people," "indigenous communities," and "First Nations" were used to select organizations involved in community engagement with indigenous peoples. When available, information on the managers involved in indigenous community relations was used to develop a list of contacts. Potential respondents were also found by researching professional databases, such as LinkedIn, using the keywords "aboriginal relationship" and "indigenous affairs". Snowball sampling (i.e. the identification and selection of further relevant research respondents based on information collected from the respondents) was used to complete the list of contacts and is a technique commonly used in exploratory and qualitative studies (Noy, 2008; Robinson, 2014; Suri, 2011). When relevant, governmental specialists, consultants, and academic experts in indigenous affairs were also contacted. All the respondents had significant experience in the area of the relationships between extractive organizations and indigenous communities.

Potential respondents were then contacted by email. The respondents interested in participating in our study had to sign a consent form ensuring their anonymity prior to the interview, as per the research protocol approved by the committee of ethics of Laval University. As organizations in the extractive sector often operate in remote areas, interviews were mostly conducted by telephone or by Skype. As many other studies have highlighted, there are no significant differences between face-to-face and telephone interviews (Holt, 2010; Midanik and Greenfield, 2003; Stephens, 2007; Sturges and Hanrahan, 2004). Our semi-structured interviews were based on an interview guide covering the main objectives of the study (i.e. main trends in the relationships between indigenous people and companies, drivers for indigenous peoples' involvement in environmental management, and improvements in environmental management through

[2] See http://database.globalreporting.org/ (consulted on May 12, 2018)

indigenous peoples' involvement) (see Appendix A). On average, interviews lasted between 60 and 90 min and were conducted in English or French or, to a lesser extent, Spanish. Overall, 33 respondents were interviewed (see Table 1). Interviews were tape-recorded, transcribed verbatim, and analyzed in their source language.

Table 1. Status of the respondents.

	Managers	Auditors/ Consultants	Researchers/ Scientists	Other Experts	**Total**
Mining Sector	9	3	0	0	**12**
Energy Sector	5	0	0	0	**5**
Forestry Sector	1	4	2	0	**7**
Natural-Resource Sector Related[a]	3	1	1	1	**6**
Other	0	2	1	0	**3**
Total	**18**	**10**	**4**	**1**	**33**

[a] Mainly from organizations providing services to more than one sector mentioned above.

3.2. Data analysis

Qualitative data analysis was based on the grounded theory method, in which main themes emerge from the data rather than from pre-established hypotheses (Glaser and Strauss, 2017; Suddaby, 2006). Interviews were transcribed in Microsoft Word. Overall, the transcriptions represented 515 single-spaced pages. They were then exported to QDA Miner software (version 4), which was used to perform the qualitative analysis. A preliminary categorization framework was created based on the data collected during the interviews. Each individual category was clearly described to ensure the validity of the data interpretation. In keeping with the inductive and iterative process involved in the grounded theory methodology, the categorization grid was dynamic and evolved as new relevant themes emerged throughout the data categorization process. Through research team discussions, new categories were created and other categories were eliminated or merged together. All transcriptions were categorized according to the categorization grid, and a double-blinded categorization was performed independently by two coders on 30% of the transcriptions. This process allowed us to validate our categorization grid and to improve it by reducing any interpretive biases of the two coders. At the end of this process, there were no significant differences between the categorizations of the two coders. Overall, 71 relevant categories were created, comprising 830 passages related to the relationships between indigenous people and companies. These categories were grouped according to three main themes:

- Main trends in the relationships between indigenous people and companies;
- Drivers for indigenous peoples' involvement in environmental management;
- Improvements in environmental management through indigenous peoples' involvement.

Finally, representative passages for the main themes were selected and translated into English by the research team when necessary. Key findings related to these themes were

also summarized. When relevant, certain trends were estimated, even though a qualitative grounded theory approach is usually not appropriate for quantification (Gephart, 2004; Pratt, 2009).

4. Results

4.1. Building trusting relationships with indigenous populations

The development of a relationship of trust with indigenous populations was considered to be a prerequisite to the implementation of any form of involvement and collaboration on environmental issues by nearly all the respondents. Nevertheless, according to most respondents, this prerequisite represents a major challenge due to the history of conflicts and misunderstandings that has shaped the relationships between the extractive industry and local communities. Without prompting, nearly half of the respondents highlighted the background of tensions, mutual distrust, and occasional confrontations that have characterized past relationships with indigenous communities. These issues do not only concern the extractive industry but also various levels of government. In fact, the government is generally perceived as a promoter of natural resource exploitation and the main authority for delivering permits to exploit natural resources with or without the consent of local communities. Almost one quarter of the respondents spontaneously mentioned that indigenous communities tend to mistrust governmental representatives even more than industry representatives. In this perspective, organizations first need to convince indigenous people that their projects can be trusted, despite possible negative past experiences with governmental authorities or certain industries. Organizations also need to recognize the rights of indigenous populations and to demonstrate that their concerns—particularly in terms of environmental protection—will actually be considered:

> I think there's a mistrust based on past strained relationships between aboriginal people and government, but also between aboriginal people and businesses. When a company comes to exploit a territory, it is with the government's approval. Aboriginal people feel resentment towards the government, but also towards companies. (Legal advisor involved with various natural resource sectors)

> It is essential to recognize aboriginal rights, not necessarily from a legal point of view, but by recognizing that they were here before us. In my experience, aboriginal people are very much looking for recognition. They want us to consider their past, and to consider them as important stakeholders in our projects. (Legal advisor involved with various natural resource sectors)

> It is the lack of consideration of the impacts that businesses have on the environment, on their way of life, on trapping, hunting, or fishing that poses problems. Some companies arrive and say that they will stay only for few years and then put everything back as it was before. But no! Maybe there's a stream there, so we have to assess what impacts we will have on salmon migration, on caribou, and

> so on. It's when we ignore that kind of things that conflicts happen. (Manager in the mining sector)

Despite the climate of mistrust, around 36% of the respondents mentioned that relationships with indigenous populations have significantly improved, facilitating the development of mutually beneficial partnerships that were not necessarily possible in the past. First, certain respondents recognized that previous conflictive relationships with indigenous communities have been costly, unproductive, and detrimental to the organization. As a result, many extractive organizations have gradually learned to work with aboriginal people more. Second, more proactive approaches have emerged and local populations are increasingly engaged prior to the development of new projects, even when all the required permits have already been obtained from governmental agencies. Third, according to most respondents, the economic benefits of extractive activities are increasingly shared with indigenous populations. As a result, despite frequent disagreements and tough negotiations, these populations are increasingly considered to be key stakeholders in projects located on their ancestral lands. Fourth, in most cases, indigenous communities' ways of life and attitudes toward the potential benefits of extractive projects have significantly changed in recent decades. Some respondents highlighted the development of a more entrepreneurial attitude in many communities and a greater ability to negotiate profitable agreements. Other respondents mentioned that there is an increased involvement of local populations in extractive projects, including in terms of decision-making, employment, and infrastructures. Overall, the context has improved to favor more fertile collaborations on environmental issues. Nevertheless, most respondents recognized that progress remains slow and the situation may be very different from one community to another. As a result, the risk of conflicts should not be underestimated, and ongoing efforts in community engagement are required:

> Some efforts are being made. So I think the relationship is improving, but very slowly. Sometimes things are moving forward through court decisions, but it's getting better. However, I think aboriginal people still largely mistrust non-aboriginal businesses. (Legal advisor involved with various natural resource sectors)

> Over the past few years, there have been several consultation and coordination efforts. Several Impact and Benefit Agreements have been developed. So I'm sure perceptions are significantly changing in communities. Entrepreneurship is also developing in Aboriginal communities, and the differences are diminishing as new ways of collaboration are identified, but it takes time. (Consultant in the mining sector)

> Some communities are moving towards a more businesslike approach. They seek to develop their territory to benefit from it and enrich themselves. Other communities are still advocating for their aboriginal rights, and that is a completely different reality. (Legal advisor involved with various natural resource sectors)

4.2. Promoting environmental collaborations

Community engagement in extractive organizations can take various forms (i.e. health and education measures, infrastructure investment, philanthropic donations, biodiversity conservation, recruitment of indigenous people) depending on the context, the needs of local populations, the resources available, or institutional constraints. Environmental issues tend to be an essential component of such engagement, especially for projects with significant impacts on ecosystems and that are located in natural areas near indigenous communities. The ability to work collaboratively with these communities to address specific environmental issues appears essential for the feasibility and long-term viability of extractive projects for at least three complementary reasons: risk management and conflict prevention, corporate legitimacy, and regulatory requirements.

First, according to 36% of the respondents, community engagement on environmental issues contributes to reduce the risks of conflicts with local populations. Extractive activities, especially in the mining industry, can represent major investments. Opposition from indigenous communities can significantly delay costly industrial projects, undermine their feasibility, or even result in the closure of existing exploitations. The respondents frequently mentioned the financial and corporate image costs of previous conflicts with local communities. Although collaboration with indigenous people does not necessarily prevent opposition, almost all the respondents who discussed this issue highlighted that the risks of conflicts can be significantly reduced through indigenous engagement and involvement on environmental issues. Importantly, environmental issues are often closely tied to cultural and social ones, and indigenous peoples' involvement can help identify sites to be protected for not only environmental but also religious or cultural reasons. Certain respondents mentioned that sacred sites can be a source of conflict, particularly if they are not well protected, and that it is important to involve indigenous people to ensure the conservation of those sites. The respondents also highlighted that natural ecosystems represent the food sources of many indigenous communities, who must be reassured about the potential impacts of extractive operations on the local fauna and flora. Overall, projects located near indigenous communities are increasingly considered to be high-risk and potentially costly activities that require specific environmental measures in partnership with local populations:

> The cost of letting an environmental issue go, the cost for the company's reputation, and of the crisis management that will follow are substantial. So, for a company, the first reflex is to see environmental issues from an economic point of view. (Consultant in the mining sector)

> From the Aboriginal movement "Idle no more" and other past crises, we know that this can represent a risk. For example, if they chain themselves to the mine entrance because they oppose it, they have a lot of media power and that might make the news from coast to coast. (Manager in the mining sector)

> In the North, the project was actually rejected. So, the company is seeing that area as high-risk, and I heard someone joke that it's seen to be "as risky as being in West

> Africa." They've spent so much money trying to get this project through… (Manager in the mining sector)

Second, around 30% of the respondents mentioned the role of regulations in the development of environmental community engagement. These regulations vary from one region to another and can be applied at the federal, provincial, or local level. Moreover, they may cover different stages of extractive projects. For the mining industry, specific regulations on relationships with indigenous communities may exist at the exploration, exploitation, and closure phases. In Canada, signing an Impact and Benefit Agreement (IBA) with these communities is a common practice in the mining industry to regulate the scope of community engagement at various stages of mining activities. Although these agreements are privately negotiated and are not necessarily mandatory, they represent legally enforceable agreements used by indigenous communities to promote their rights in terms of environmental conservation, cultural site protection, and economic compensation. Similar regulations exist in various countries, such as the Indigenous Land Use Agreements in Australia. In addition to specific regulations on community engagement, the extractive industry must also take into account environmental regulations, which often include regulatory provisions regarding indigenous communities. Several respondents also mentioned that in order to access rare resources, companies increasingly need to operate in protected areas, where more stringent regulatory constraints in terms of biodiversity conservation and community engagement often apply:

> The biodiversity conservation plan needs to be developed with stakeholders and communities of interest, both local and indigenous. So we have an obligation to engage these communities on biodiversity management activities or even to invite them to participate. (Manager in the mining sector)

> Laws and regulations must be respected. You have to go through a legislative process to obtain permits and authorizations. We have to involve Aboriginal peoples and conclude agreements with them to promote their development and respect their values. (Manager in the mining sector)

> We try to get the indigenous people and the company on the same page about where the project actually stands and what we can actually expect in terms of agreement on economic development and environmental protection. That's where the main misalignment happens with companies. (Scientist involved with various natural resource sectors)

Third, 27% of the respondents mentioned the importance of promoting environmental initiatives in collaboration with indigenous communities to improve corporate image and demonstrate their social responsiveness. In this perspective, community engagement reflects a corporate strategy to improve social legitimacy and appear as good corporate citizens. The communities that companies are pressured to engage with are not limited to local populations; they also include various stakeholders whose demands need to be addressed as far as possible (e.g., environmental groups, international institutions, financial markets, banks, customers, governmental agencies, and human rights associations). For

example, a few respondents mentioned institutional pressures from environmental groups as well as the tendency of these groups to forge alliances with indigenous communities or to use the claims of indigenous communities to bolster their cause. For companies, fostering environmental collaborations with indigenous communities can help prevent indigenous alliances with environmental groups, improve the social license to operate among the local population, and enhance their corporate image at a larger scale. It also promotes self-regulation and avoids more coercive measures from governmental agencies or pressure groups:

> Currently, there are many initiatives that are undertaken voluntarily or for reputational reasons, but not many mandatory measures. (Consultant in the mining sector)

> At the company level, I think it's mainly a question of social acceptability and image. Citizens also increasingly expect companies to adopt sustainable and socially responsible approaches. (Legal advisor involved with various natural resource sectors)

> Environmental activists or lobbyists target First Nations and indigenous groups and try to use them to their own gain, which I think is a concern for quite a few industries and corporate players. (Scientist involved with various natural resource sectors)

4.3. Improving environmental management through indigenous peoples' involvement

Although the improvement of internal environmental practices was rarely mentioned as a significant driver of community engagement, more than three quarters of the respondents explained how such engagement has brought substantial and often unexpected benefits. Those benefits revolve around four important aspects of environmental management: knowledge of local ecosystems and sensitive sites to be protected, biodiversity management, development of environmental values within the organization, and monitoring environmental measures.

First, 55% of the respondents mentioned the role of indigenous communities in the development of environmental knowledge on exploitation sites. Although some indigenous peoples are reluctant to share their knowledge, such knowledge appears essential to extractive organizations for adapting environmental practices to the specificities of local ecosystems and identifying priority actions. Because extractive organizations mostly operate in remote areas, they are often unfamiliar with the site and the region in which they're operating. As a result, it is not necessarily clear which environmental actions should be prioritized, and this may vary from one site to another. The recruitment of experts, consultants, and environmental specialists can be costly, particularly for small- and medium-sized enterprises. Moreover, the knowledge and information that can be obtained from external experts tend to be based on technical aspects that are not necessarily aligned with the priorities of indigenous communities. Conversely, those communities tend to be seen as experts of their environment and guardians of the ecosystems upon which they depend. Their perceptions are rooted in traditional knowledge, activities (e.g., hunting and

fishing), and cultural aspects that need to be considered by extractive companies, regardless of the conclusions of scientific studies (e.g., impact assessments, water quality analyses, or species inventories). The engagement or involvement of indigenous communities in the development of environmental objectives and programs is essential for the success and social acceptability of measures in this area. It also contributes to demonstrate the company's concern for local traditions and stakeholder expectations:

> First Nations are quite active in their roles of protecting local environments, and they have a deep connection to their environments, to the Earth in general. I think they are seen as people with good authority on where protective initiatives should go, and when things are harmful to the environment, they're a good indicator of where people should be placing their concerns. (Scientist involved with various natural resource sectors)

> Talking with the local First Nations helps the company to understand the land even better, and it could help the company in their production as well by understanding what the land is like. (Manager in the mining sector)

> First Nations have a connection to their environments. They can provide traditional knowledge of a situation to show not only the potential effects of each company, but also the cumulative effects of the industry and what has already happened in their environments. And this information can be very valuable in terms of positioning a project to do the right thing and minimizing environmental impacts. (Scientist involved with various natural resource sectors)

Second, as mentioned by 39% of the respondents, indigenous peoples' involvement can significantly improve the management of biodiversity issues. Most organizations lack the knowledge and resources required to efficiently manage these issues. Moreover, they are unfamiliar with the behavior of indigenous species and the most appropriate measures for their protection. Conversely, indigenous communities have a close relationship with the local fauna and flora, which can be used as food or medicines. Several respondents from Canadian organizations mentioned specific caribou species such as the Peary and Woodland caribous, which are endangered or threatened species in certain regions. Because the caribou represents the primary source of food for many indigenous communities of the far North, protection of the caribou is essential to maintaining the lifestyle and traditions of these communities. Indigenous peoples' involvement in biodiversity conservation can take many forms (e.g., recruitment of indigenous people in the environmental department, implementation of a consultation group, or meetings with tribe leaders) and be focused on various issues (e.g., identification of endangered species, analysis of migration routes, implementation of ecological corridors, or management of invasive species). For organizations, such involvement helps to improve relationships with indigenous communities and to focus biodiversity measures on issues that indigenous communities consider essential:

> It's at the heart of their culture, so if the company is able to work with indigenous groups on something that is really at the heart of their identity, it's the best way to

> work together. It's one of the main gateways to conserve biodiversity and to build a better relationship with indigenous groups. (Consultant in the construction materials sector)
>
> Ten percent of the workforce is indigenous. They participate in defining what biodiversity represents for them. They told us where the medicinal plants are to protect. There are also the caribou, the moose, and the Canada goose, which they also hunt. So we make sure that our projects will have the least possible impact on these species. We look at the species that provide the most ecosystem services to these populations, and we make sure to minimize our impacts on them. (Manager in the energy sector)
>
> The migratory caribou population is declining, which is a major source of concern for the Inuit. This is why mining companies will join conservation programs for this species. They will get involved and make sure they do not impact the caribou. (Manager in the mining sector)

Third, around 39% of the respondents highlighted the development of environmental values within the organization as a benefit of indigenous peoples' involvement. Engagement and dialogue with these population prior to the exploration project or during the operation phase tend to change the perceptions of environmental issues of managers and employees alike. Some respondents mentioned the development of a more holistic and respectful view of natural ecosystems, while others appreciated the knowledge gleaned from an experiential, spiritual, and integrated view of the environment. Around 15% of the respondents highlighted that contact with indigenous people had a very strong impact on them and deeply transformed their vision of nature. Whatever its form, the involvement of indigenous communities has definitively improved corporate environmental awareness and responsiveness to issues that were often overlooked or mostly considered as an external constraint:

> We need to engage so much with indigenous people for the development of our projects that it makes us aware of their concerns, and we then become increasingly aware of these issues ourselves. (Manager in the mining sector)
>
> I brought the mining engineer responsible for project development with me, and when he heard indigenous people explain that the environment is their pantry, he was really impressed. He realized how they saw it, and it really changed his own perspective. (Manager in the mining sector)
>
> I've learned a lot from indigenous people. We don't realize these things living in a modern society. It was only when I've worked with indigenous people in Africa and in the North that I actually realized the importance of traditional knowledge, of a direct relationship with biodiversity, of plants they've used since forever. I was really impressed. These are not things you've learned in school as an engineer or a geologist. (Manager in the mining sector)

Fourth, 21% of the respondents mentioned that indigenous peoples' involvement can improve the monitoring of various environmental issues (i.e. sampling programs, impact assessments, maintenance of polluting equipment, site rehabilitation, or stakeholder engagement) throughout the life cycle of extractive activities. Although the proximity of indigenous communities to industrial sites is often perceived as a source of pressures and constraints, it can also facilitate the monitoring and control of environmental impacts. Such monitoring may require creating and hiring for specific positions when industrial infrastructures are complex and spread out over a large area (e.g., a pipeline or a large mining complex). Indigenous people living in the immediate vicinity of these infrastructures are clearly well placed to hold these positions, which may require long-term involvement on the site. Some respondents also mentioned that direct indigenous involvement in monitoring reduces the risks of protracted conflicts with local populations and improves communication with stakeholders. Overall, the respondents highlighted indigenous peoples' abilities in the field more than in offices. In this perspective, the presence of indigenous people on the environmental staff brings capabilities, ideas, and a vision complementary to the more technical and administrative focus of most environmental specialists:

> I think having them on staff is beneficial, because they can give you lots of good ideas, instead of going back for consultation and overwhelming them with a lot of questions at the same time. We also have a committee that works with all the bands in the area to listen to and discuss their ideas and uses this knowledge to help us better understand our environmental protection. (Manager in the mining sector)

> We need to talk to them and involve them in environmental monitoring, in sampling, in our programs, ask them for their opinion, and if they see improvements or not. (Manager in the mining sector)

> Indigenous people participate in studies and species rehabilitation programs. They're really going to participate, and they like it. Not just for biodiversity actions and tree planting. They are used to working in nature. So we actually involve them very, very actively. (Manager in the energy sector)

5. Discussion and conclusions

The findings of the study highlight the importance of building trusting relationships with indigenous populations prior to developing environmental initiatives. Despite the history of conflicts and mistrust between extractive industries and indigenous communities, the respondents pointed out that relationships have significantly improved, which now makes it possible to further develop environmental collaborations, under certain conditions. These collaborations are facilitated by the search for corporate social legitimacy and the proliferation of negotiated agreements, which can incorporate environmental issues. Indigenous peoples' involvement in environmental management also contributes to the prevention of conflicts and the reduction of the risks associated with activities located in remote and often protected regions. Finally, the findings also shed light on the

environmental benefits of indigenous involvement, including in terms of improving the company's knowledge of local ecosystems to be protected, management of biodiversity issues, greening of corporate values, and monitoring of environmental initiatives.

The paper has also practical implications, particularly for managers facing pressures from indigenous communities. Although environmental issues are often a source of tensions with local stakeholders, this paper shows how partnerships with indigenous peoples can contribute to reduce these tensions and improve environmental practices. Negotiated agreements with local populations should therefore systematically integrate environmental management and long-term environmental partnerships. Indigenous peoples' deep connection to the environment should be considered as an asset to improving organizational knowledge of the region and identifying the measures to prioritize. Having indigenous people on the company's environmental staff can also significantly improve the management of biodiversity issues, which is essential to ensure the SLO when extractive operations are located near or within protected or fragile areas. Generally speaking, indigenous peoples' involvement has been found to improve environmental awareness inside extractive organizations. Such benefits should encourage organizations that are really committed to environmental protection to recruit and train indigenous people for tasks related to programs in this area. In addition to improving environmental management, the recruitment of indigenous people clearly contributes to reducing the tensions with indigenous communities.

The limitations of this study call for further research on environmental management and indigenous communities.

First, considering the semi-structured interview guide used for the interviews and due to several distortions such as the social desirability bias (Nederhof, 1985), the interviewees could have tended to focus on the most positive, desirable and least conflictual aspects of indigenous engagement because of the impact of the socially dominant norms.

Second, the study is based on a qualitative approach and a limited sample of respondents from the extractive industry. As a result, the findings cannot be generalized to all sectors of activity and all types of organizations. Most organizations do not have direct relationships with indigenous people and do not face the same type of pressures from this particular group of stakeholders. Future studies could investigate the involvement of other stakeholders in organizational environmental practices. How different kinds of stakeholders (e.g., representatives from environmental associations, residents, the municipal sector) can contribute to specific environmental practices (e.g., implementation of biodiversity measures, measurement of environmental performance, rehabilitation programs) could also be further investigated. Although not all stakeholders have the same connection to nature or place attachment as indigenous communities, their inclusion in environmental staff or participation in ad hoc committees could help improve certain practices and relationships with community. Quantitative studies based on a larger sample could provide an overview of the possible contributions of various types of stakeholders—including indigenous communities—to different environmental practices depending on their competences, resources, and concerns.

Third, this study is focused on representatives, consultants, and experts in the extractive industry. Although the respondents did not obfuscate tensions with local communities, a selection bias may partly explain some optimistic statements on the possibilities and benefits of indigenous involvement in environmental management. Then, future studies should investigate the points of view of indigenous people on their participation in corporate environmental initiatives. Interviews with this type of respondent may be complex due to linguistic, cultural, and geographical constraints. Case studies with an anthropological approach that are focused on one or few communities might make it possible to delve deeper into the perspectives of indigenous peoples on involvement in the extractive industry. Nevertheless, indigenous groups' positions are highly variable and may range from a willingness to develop environmental partnerships to total, non-negotiable opposition. As a result, it can be difficult to provide an overall picture of the situation from a case-study approach.

Fourth, this study is focused on environmental practices and does not take into account other important aspects of community engagement such as education, infrastructure development, employment, and health issues. Future research could investigate the multiple facets of corporate community engagement and how indigenous peoples can be involved in different programs of interest for their community. Longitudinal studies could also further investigate the nuances of this type of engagement at various stages of extractive activities. Because these activities generally last for a limited period of time, they may bring short-term benefits, including short-term socioeconomic outcomes, but may lead to serious long-term externalities (e.g., soil and water contamination, biodiversity loss, or changes in fauna migration routes). Possible disagreements between various communities affected by extractive projects could also be investigated. Although indigenous peoples' involvement in corporate environmental management seems to be mutually beneficial, it could lead to opposition or even rejection by other members of the same community. Moreover, support for extractive projects and their environmental programs can change over time. Future studies could investigate those changes and their implications for environmental management.

Declaration of Competing Interest

The authors do declare that we do not have any conflict of interest with this work.

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Appendix A. Examples of questions for the interviews' semi-structured guide

- According to you, what are the main differences between indigenous perspectives of natural environment and those conveyed by companies?
    - Can you give us some examples?
- What are the consequences of these differences in views for environmental management?
    - Can you give us some examples?
- According to you, what are the perceptions of indigenous peoples regarding companies established in their surroundings?
    - How these perceptions have evolved over time?
- What are the main causes of conflict between indigenous peoples and companies?
    - Can you give us some examples?
- According to you, what are the main benefits for indigenous people of business activities (mines, forestry, etc.) conducted on their territory?
- How can companies work better with indigenous people in order to promote environmental protection?
    - Can you give us some examples?
    - According to you, what are the best practices to achieve this?
    - To what extent are local populations, especially indigenous peoples, really involved or consulted by companies?
    - What are the main difficulties linked to this involvement?
        - Can you give us some examples?