Journal of Cleaner Production 135 (2016) 1117–1128

Contents lists available at ScienceDirect

Journal of Cleaner Production

journal homepage: www.elsevier.com/locate/jclepro

Perspectives of natural resource sector firms on collaborative approaches to governance for water

Rob C. de Loë [a, b, *], Dan Murray [b], Marie Claire Brisbois [a, b]

[a] University of Waterloo, School of Environment, Resources and Sustainability, 200 University Avenue West, Waterloo, ON N2L 3G1, Canada
[b] Water Policy and Governance Group, University of Waterloo, 200 University Avenue West, Waterloo, ON N2L 3G1, Canada

ARTICLE INFO

Article history:
Received 27 November 2014
Received in revised form
15 March 2016
Accepted 27 June 2016
Available online 29 June 2016

Keywords:
Collaboration
Water governance
Natural resource firms
Canada
Policy Delphi

ABSTRACT

Firms in the natural resource sector (forestry, mining, oil and gas, and hydroelectric power production) are dependent on water in their operations. They also affect water quality and quantity through their practices. In response to rising costs, increasingly restrictive regulations, reduced water availability and growing public criticism of industrial water use and management practices, companies are attempting to improve their environmental performance. One approach being used by firms in the natural resource sector is participation in collaborative, multi-actor approaches to governance for water. A policy Delphi survey of 22 representatives from firms in Canada's natural resource sector was used to explore the benefits and challenges flowing from natural resource sector firm participation in multi-actor collaborative processes. The panel identified and then evaluated 67 positions regarding roles, benefits and challenges. Panelists clearly saw many benefits and challenges to companies from becoming engaged in collaborative processes. They also were also aware of ways in which the participation of large firms in multi-actor collaborative initiatives can create both benefits and challenges for those initiatives. The fact that natural resource sector firms do not have to give up their traditional avenues of influence to participate in collaborative initiatives raises concerns about the long-term viability of collaboration as a governance strategy.

1. Introduction

Water resources are critical to the economic viability of firms in the natural resource sector. In mining, oil and gas production, forestry and hydroelectric power production, companies use water for purposes such as cooling, dilution, power generation and processing. These uses can lead to significant negative environmental, social and economic impacts. Public and political willingness to accept the impacts of industrial water use as part of the cost of doing business has declined sharply around the world. As a result, firms are confronted with multiple pressures related to the use of water resources, including rising costs, increasingly restrictive regulations, reduced water availability and growing public criticism of industrial water use and management practices (Gleick et al., 2011; Lambooy, 2011). This is taking place within larger debates about corporate social responsibility, the balance between value creation and social legitimacy, and the roles of private sector firms in society (Mason and O'Mahony, 2008:728; Brammer et al., 2012).

One way that firms are responding to these pressures is through ongoing development of collaborative stakeholder relationships (Holley et al., 2012). In fact, partnerships and stakeholder collaborations are being seen as powerful, and unavoidable, strategies for implementing corporate social responsibility (CSR), and for achieving the economic and social objectives of firms (Seitanidi, 2010; Brammer et al., 2012; Austin and Seitanidi 2012a, 2012b:728; den Hond et al., 2015). Engaging with other actors can create positive sum outcomes related to both reputational challenges and value generation (Brammer et al., 2012). For firms, collaboration can legitimize their operations to stakeholders (Aguilera et al., 2007; Austin and Seitanidi, 2012a), increase reputation, exposure and positive media portrayals (Seitanidi, 2010; Austin and Seitanidi, 2012a), buffer and limit risk by building knowledge, relationships, reputation and "moral capital" (Godfrey

* Corresponding author. University of Waterloo, School of Environment, Resources and Sustainability, 200 University Avenue West, Waterloo, ON N2L 3G1, Canada
E-mail addresses: rdeloe@uwaterloo.ca (R.C. de Loë), d4murray@uwaterloo.ca (D. Murray), mcbrisbo@uwaterloo.ca (M.C. Brisbois).

http://dx.doi.org/10.1016/j.jclepro.2016.06.166
0959-6526/

et al., 2009; Austin and Seitanidi, 2012a; den Hond et al., 2015), and enable collective self-regulation (Brammer et al., 2012).

In Canada, the move toward increased collaboration in the context of water mirrors global trends towards strategic alliances among businesses, and between businesses and key external actors in governments and non-government organizations (Albino et al., 2012). To illustrate, serious domestic and international concerns about the impacts of oil sands development on air and water quality exist in the Province of Alberta (Jordaan, 2012). In the face of strong criticism, firms in this sector formed a strategic alliance of 12 companies to address environmental performance known as "Canada's Oil Sands Innovation Alliance" (COSIA) (Canada's Oil Sands Innovation Alliance, 2013). This example reflects a technical partnership between firms. Other types of partnerships target secondary stakeholders and are more likely to pursue goals related to reputation, legitimacy and risk mitigation (Freeman et al., 2007; Godfrey et al., 2009). To illustrate this latter type of partnership, Coca-Cola and the World Wildlife Fund (WWF) launched a global strategic alliance in 2007 focused on water conservation (World Wildlife Fund and The Coca-Cola Company, 2012).

Some firms in countries around the world are also now becoming engaged in a third kind of collaboration, typically described as "collaborative governance", where industry is just one of numerous actors with potentially very different motivations and interests (Margerum and Robinson, 2015; Kim and Darnall, 2015). In this form of collaboration, diverse actors come together to address shared problems that often have broad social and environmental goals (e.g., creation of watershed management plans, ecosystem restoration). The ability of firms to define terms and control outcomes is dramatically less certain than in industry initiated or led partnerships (e.g., Owen and Kemp, 2013). As such these processes are inherently more "messy" than other types of strategic partnerships in which firms participate (Plummer and FitzGibbon, 2004; Gunningham, 2009).

The implications of firm participation in strategic alliances have been addressed by others (Greenwood, 2007; e.g., Godfrey, et al., 2009; Austin and Seitanidi, 2012a, 2012b). However, there is insufficient understanding of the motivations of firms participating in collaborative governance processes (Godfrey et al., 2009), especially from the perspective of firms themselves. These motivations will reflect the degree to which firms are willing to genuinely engage in collaboration. It the business literature, this is reflected in discussions of corporate responsibility vs. irresponsibility (Greenwood, 2007). In literature on collaborative governance, this is termed *credible commitment* (Memon and Weber, 2010). The lack of attention to firm perspectives is particularly salient considering that participation in these kinds of collaborative processes has been explored with respect to other actors. For example, research on collaboration has addressed the participation of Indigenous actors (von der Porten and de Loë, 2013), agricultural groups (Simpson, 2014), governments (Reed and Bruyneel, 2010), and broad civil society (van Tol Smit et al., 2015).

To contribute to improved understanding with respect to the motivations and implications of natural resource sector firm participation in collaborative water governance, this paper reports on a study that explored firm participation in collaborative processes in Canada. The distinctive contribution of the study is its focus on the perspectives of the firms themselves – perspectives obtained through the use of a policy Delphi methodology designed to draw open and honest reflections from firm representatives with an emphasis on identifying topics on which opinions converge or diverge. This approach is particularly effective in examining situations like collaboration where opinions are likely varied, issues are complex and multiple options for action exist.

In the next section, we briefly summarize the characteristics of the kind of collaborative approaches to environmental problem solving that were the focus in this study. The policy Delphi methodology used to engage representatives of large Canadian natural resource sector firms is then outlined. Results and discussion follow and emphasize that firms strongly appreciate the opportunities that collaboration presents with respect to relationship building, risk management, and influence on public perceptions and policies. However, firms are not always open to allowing their operations to be influenced by the broader collaborative group – an outcome presupposed by theory on this type of collaboration. The paper concludes with implications for firms, and for collaborative approaches to environmental governance.

2. Collaborative approaches to environmental problem solving

Collaborative approaches to environmental problem solving take many forms and have become an important part of environmental governance around the world. Governments remain central to environmental governance, but new actors with different roles are taking the stage, and new ways of making decisions are being adopted (Newell et al., 2012). Reflecting the breadth of real-world collaborative practice, collaboration has become a subject for academic research in a host of fields including inter-organizational relations and business management (e.g., Vangen and Huxham, 2003), planning (e.g., Healey, 2003; Innes and Booher, 2010), public administration (e.g., Ansell and Gash, 2007; Emerson et al., 2012) and environmental management (e.g., Margerum, 2008).

Collaborative governance, a distinct type of multi-actor process, is being used to address a diverse range of problems. Sometimes collaborative processes are established through government policy or legislation, and are designed to complement or support regulatory activities. For example, in South Australia, water using industries participate on collaborative Natural Resource Management Boards created under the *Natural Resources Management Act* 2004. These bodies contribute to state-level planning and water allocation decision making (Taylor et al., 2013). However, there are also many examples of collaborative processes forming primarily through local initiatives. For instance, CALFED, an important organization in California's water planning and management system, was established in 1994 by government and non-government participants (Booher and Innes, 2010). The people and organizations involved in these forms of collaborative governance processes designed to address water management challenges can be extremely diverse, and often have vastly different interests, motives and resources relative to natural resource sector firms. Box 1 describes an example of a collaborative process created by a government in the oil sands region of the Province of Alberta, Canada. Industries are important players on many of the collaborative bodies known as Watershed Planning and Advisory Committees in that province, and have been able to justify their participation to their stakeholders based on tangible benefits such as relationship and legitimacy building, and the low risks they face (Brisbois and de Loë, 2014).

As is true for all social or business relationships, collaborations are underpinned by certain basic assumptions. Strategic alliances such as COSIA and the partnership between Coca-Cola and WWF are based on clearly-defined mutual self-interest. The parties collaborate through a business relationship designed to advance a shared objective. The principles and assumptions underlying the kind of collaborative water governance of concern in this paper can be very different – especially when they are informed by ideas from the public administration and planning fields (e.g., Forester, 1985; Gray, 1985; Innes, 1996). Collaboration according to this perspective involves collective decision making based on deliberation; the

Box 1
Collaboration with industry in the oil sands: the case of Alberta's WPACs

The Province of Alberta, Canada, is well known around the world for its oil and gas industry, especially its oil sands projects in northern Alberta. However, the province also has a significant agriculture sector, parts of which rely heavily on southern rivers for irrigation water supplies. During the late 1980s and early 1990s, pressure on scarce water supplies in southern Alberta motivated a major overhaul of the province's water allocation law. A new *Water Act* was created in 2000 as part of this process. The Act required the provincial government to establish a strategy for the protection of the aquatic environment. The government's response was the release in 2003 of *Water for Life: Alberta's Strategy for Sustainability*.

The strategy created high level goals for water management in Alberta, and established a new kind of collaborative body: the Watershed Planning and Advisory Committee (WPAC). WPACs, which are formed around river basins, are responsible for preparing State of the Watershed Reports, developing watershed management plans, and providing on-the-ground support to stewardship groups and landowners (Alberta Environment, 2003). The first WPACs formed in southern Alberta, where pressure on aquatic resources was most severe due to historical irrigation development. However, WPACs have also formed in central and northern basins where major forestry and energy projects exist. Natural resource sector firms are important players in these WPACs.

The Athabasca River basin is a particularly important region in northern Alberta. Oil and gas development has always been a major part of the provincial economy in Alberta. In the late 1990s, Alberta began developing "unconventional" oil by mining the vast deposits of bitumen-rich oil sands found in the Athabasca basin around the Town of Fort McMurray Alberta. Oil sands companies now share the basin's industrial landscape with forestry and pulp and paper firms. Importantly, they are operating in a region occupied by First Nations peoples for thousands of years (Clancy, 2014). Serious concerns exist regarding the impacts of oil sands development on the health of downstream communities, especially those where First Nations peoples continue to rely on fish and wildlife for their diet (Kelly et al., 2010).

The Athabasca Watershed Council (AWC), formed in 2010, is one of Alberta's WPACs created under the *Water for Life* strategy. This body has 16 elected directors, nominally representing government, non-government organizations, First Nations, industry, and "other" actors. The AWC's focus on technical activities such as watershed planning and reporting has been well-suited to participation by natural resource sector firms (Clancy, 2014).

Energy firms have been able to use their position on the Council to share information about their activities, to build relationships with opposing actors, and to create a positive frame for their projects – while still having full access to the important regulatory and political systems that influence their activities. The provincial government in Alberta, which created the institutional framework within which the WPAC functions, has supported this approach to collaboration (Brisbois and de Loë, 2014). Importantly, major decisions relating to core business activities were not addressed through this collaboration. This greatly reduced the risks to firms from participating in, or withdrawing from, the collaboration – as some have recently done.

pooling of resources needed to address common problems; a willingness on the part of participants to reconsider their basic assumptions, beliefs and attitudes; enduring, long-term relationships; and consensus-oriented decision making (Ansell and Gash, 2007; Watson, 2007). These types of processes are usually broadly inclusive of other industry and business actors, governments, and civil society and environmental groups. This outlook on collaboration has been very influential in the water and environmental management fields (Lubell et al., 2002; Leach et al., 2002; Connick and Innes, 2003; Kallis et al., 2009; Margerum and Robinson, 2015). However, researchers are increasingly questioning the ability of collaborative processes to account for systemic power imbalances and broad socio-economic and political contexts (Emerson et al., 2012; Brisbois and de Loë, 2015; Lubell, 2015).

For the purposes of this paper, it is important to note that collaboration based on these assumptions tends to assume that procedural rules will address power imbalances among participants (Murray, 2005). These power imbalances can be real and significant. For example, it is well understood that businesses generally have a disproportionate ability to influence policy processes. Firms have influence derived from their access to money, knowledge, time and expertise (Fuchs, 2007). Industry also has power derived from its fundamental role in capitalist societies. This power is visible in the existence of high-level interpersonal linkages between industrial executives or lobbyists, and the political elite (Brooks and Stritch, 1991; Schrecker, 2005). By drawing on structural powers, firms can negotiate with governments out of the public eye, and thus influence how issues are framed and presented to the public (Falkner, 2008). Business can also draw on its potential ability to control popular discourse (e.g. through media), and to shape societal values and goals. In this way, potential sources of conflict over environmental issues may remain hidden (Lukes, 2005).

Collaborative processes present important constraints and opportunities for industry. Many of the traditional methods that businesses use to shape policy are most effective when practiced in secret because overt displays of influence can lead to public resistance (Fuchs, 2007). Industry participation in open and transparent collaborative processes would seem to work counter to traditional methods of influence. However, collaboration has the potential to enhance the position of industry by increasing its legitimacy as a policy actor through engagement in processes that build trust and strengthen relationships. This can strengthen the "social license to operate" that firms increasingly require (Gunningham et al., 2003), and can help to insure against reputational risks (Godfrey et al., 2009). Importantly, justifying industry participation in collaborative governance processes based on enhancement of social license can result in entrenchment of existing industry-dominated power relationships, and may lead to a focus on risk-based, short-term operational approval concerns rather than long term sustainability

goals (Owen and Kemp, 2013; Parsons et al., 2014). An enhanced social license can also lead to greater freedom to exercise power over public discourse and to reinforce business-friendly attitudes in government and among the general public (Falkner, 2008). By extension, participation in collaboration can enable corporate irresponsibility if a veneer of engagement is upheld while stakeholder interests are disregarded (Greenwood, 2007; Brammer et al., 2012).

It is important to emphasize that much of the critical literature on social license has emerged from work focused on mining, with literature addressing industry-led partnerships and collaborations being particularly germane to this paper (e.g., Owen and Kemp, 2013; Campero and Barton, 2015). Water management is a different context. Nonetheless, industry representatives participating in the types of collaborative processes examined in this study, including those mandated by government regulation, have invoked similar social license arguments as their peers engaged in mining activities as a justification for their participation (Brisbois, 2015a:102). Hence, we suggest that insights from mining-focused literature are relevant to those trying to understand the role of firms in collaborative processes focused on water issues.

Given the growing importance of collaborative processes for addressing water problems in areas where natural resource sector firms operate, it is important to understand the motivations of these firms so that the value of their participation can be maximized – socially, economically and environmentally. Key questions include the following: Why are they becoming involved in collaborative processes when the time and resources needed to participate can be significant, and the outcomes are usually uncertain? What roles do they believe they can or should play? What benefits and challenges do they see for their firms? Are they aware of and able to respond to the benefits and challenges for collaborative processes that their participation creates?

3. Methodology

The tool used to identify and explore the perceived roles, benefits and costs of industry participation in collaborative processes for water governance was the policy Delphi. The policy Delphi is an iterative, multi-round idea-generating strategy that seeks to clarify points of view on major policy issues in a way that accounts for the shortcomings of techniques such as workshops and one-shot surveys (Needham and de Loë, 1990; Franklin and Hart, 2007; Moore et al., 2009). It is particularly well suited to dealing with cases where issues are complex, opinions are likely to diverge, and policy options are unclear. Importantly, creating a consensus is not an objective in a policy Delphi study. Instead, through a well-designed policy Delphi, analysts can map out issues and options and identify the ones for which broad agreement exists, in contrast to those where opinions are polarized. In cases where perspectives are divergent, other variables, such as resource industry sector or geographical location, can be examined to draw out potential explanatory variables.

3.1. Panel recruitment

The study required a panel of natural resource sector firm employees who were experienced in collaborative approaches to governance for water, and who would be willing to participate in a candid, anonymous survey about their experiences. In recruiting the panel for the study, the aim was to include professionals who (1) represented the main types of water using natural resource sector firms operating in Canada (oil and gas, mining, electricity generation, and forestry); (2) were employed by large (500 + employees) natural resource sector firms operating in Canada; and (3) had previously represented natural resource sector firms in collaborative processes for water governance. The study focused on large firms rather than small and medium sized enterprises (SMEs) because the two groups face different opportunities and constraints reflecting their relative institutional and financial capacities (Coen, 2005). As a result, the perceived costs and benefits of collaboration are likely to be different.

The desired panel was a specialized group of people who are difficult to access because of their positions within large corporations. The National Round Table on Environment and Economy (NRTEE), a federal government agency, was engaging in a study of water and the natural resource sector in Canada during 2010–12. The lead author had previously collaborated with NRTEE on a workshop focusing on water and natural resource sector firms in Canada (WPGG, 2010 and NRTEE, 2010). Therefore, a constructive working relationship already existed that facilitated access to potential panelists for this study. NRTEE's existing database of contacts, supplemented with additional contacts supplied by the lead author, was used to identify a pool of potential participants. A purposive sampling strategy was then used to choose panelists who met the three selection criteria (above). NRTEE made the initial contact with prospective panelists, and the lead author's team followed-up and conducted the survey. The results of the survey then informed one of NRTEE's reports (NRTEE, 2011).

The final panel recruited for the study included an experienced group of 22 professionals representing major natural resource sector firms engaged in collaborative water governance processes across Canada (Table 1). Background information collected from the participants indicated that while all had participated in collaborative processes as an employee of a natural sector firm, the nature of these collaborations varied greatly. These collaborative processes were highly diverse, reflecting the many different ways in which collaboration involving industry is being used in Canada. They included formal processes required as part of a relicensing process, technical committees to address specific impacts or challenges, watershed advisory committees, and policy development groups. Collectively, the members of the panel were able to provide a broad Canadian natural resource sector perspective on collaborative governance. Between the high diversity of processes and the size of the panel, it was not possible to link specific insights generated during the study to forms of collaboration. However, the collaborative processes were selected based on their common adherence to broadly similar principles of collaboration (outlined above in Section 2). Thus, findings from this study are relevant for collaborative situations that share these characteristics.

Some attrition occurred between the two rounds of the survey (Table 1); four panelists who completed the first round were unable to complete the second round due to time pressure and employment changes. Nonetheless, the key natural resource sectors of interest were represented effectively in both rounds of the survey.

Importantly, while the identities of the panelists were known to the research team, the panelists themselves only knew that they were interacting with peers from large natural resource sector

Table 1
Participants by type of natural resource sector firm and by round.

Natural resource sector	Participation in round 1	Participation in round 2
Oil and gas	6	6
Mining	3	3
Electricity generation	8	5
Forestry	5	4
Total	*22*	*18*

firms in Canada. This anonymity encouraged a level of candour and frankness that can be difficult to achieve using tools where participants are known to each other. Hence, similarities and differences in responses among panel members cannot be attributed to pre-existing relationships or other influences.

3.2. Design of the policy Delphi survey

In a policy Delphi survey, participants complete multiple rounds of questionnaires that build on each other. In this study, we used two rounds delivered through web-based surveys between March and May, 2011. During the first round participants were asked to draw upon their experiences in responding to five open-ended questions that responded to the aims of the study and the issues raised in the literature review (see above):

1. What role(s) do you think that firms in your sector should play in collaborative approaches to water governance?
2. What benefits do firms in your sector receive from participating in collaborative water governance processes?
3. What challenges do firms in your sector face relating to participation in collaborative water governance processes?
4. How do collaborative water governance processes benefit from the participation of firms in your sector?
5. What challenges do collaborative water governance processes face from firms in your sector participating in those processes?

Due to the open-ended format of the questions, study participants were not constrained by pre-defined responses and could provide as much detail as they wished. In total, the 22 panelists who completed the first round survey provided 219 distinct responses to the five questions, ranging in length from brief sentences to paragraphs; most panelists provided multiple responses for each question (e.g., one person could provide several possible roles that firms should play in collaborative approaches).

First-round responses were analyzed using QSR NVivo 8 (a software tool that facilitates sophisticated coding and analysis of qualitative data). Using QSR NVivo to identify themes and patterns, 67 distinct positions were distilled from the 219 statements. All viewpoints in the first round were represented, but in many cases similar responses were grouped during the coding process and one was selected to represent the group so that the volume of information in the second round could be reduced. To ensure transparency, panelists were provided with an appendix that contained all the original first-round statements and the corresponding second-round statement. In this way they could confirm that suggestions they had made were represented.

In the second round, participants were asked to evaluate the 67 distinct positions that emerged from the first-round responses using a simple four-point scale with no "neutral" position. This design required panelists to make a clear choice. Panelists who could not rate a statement were asked to select the "Can't decide" option. The four points on the scale varied depending on the original question. For Question 1 (roles), the scale measured *appropriateness*: Very Inappropriate, Inappropriate, Appropriate and Very Appropriate. For the other four questions (benefits and challenges) the scale measured *significance*: Very Insignificant, Insignificant, Significant, Very Significant. Through this evaluation process, panelists had an opportunity to reconsider their initial positions in light of those of other anonymous panelists.

Analysis of the ratings provided by panelists allowed for identification of consensus, disagreement and ambiguity in the positions of the panelists. Numerous techniques exist in the literature for analyzing data from policy Delphi surveys, all having strengths and limitations (von der Gracht, 2008). The limitations of different statistical approaches are discussed elsewhere (de Loë, 1995). In this study, we used a simple algorithm developed by the lead author (de Loë and Wojtanowski, 2001). This system allows for transparent identification of *consensus* and *agreement*.

- Consensus is a measure of the extent to which there was agreement on a particular question. As shown in Fig. 1, consensus could be high, medium, low or none.
- Agreement refers to the location at which the consensus occurred (if it occurred). Fig. 1 illustrates that agreement can be on one point of the scale (e.g., "Very Insignificant") or in between (e.g., "Significant to Very Significant").

According to the underlying logic of the system, agreement can only be on one "side" of the rating scale or the other). For example, the panel collectively could agree (with a low, medium or high consensus) that a statement was *significant* or *insignificant* (to varying degrees); a neutral outcome ("significant to insignificant") is not permitted. Instead, where the ratings were split such that fewer than 60% fell on one side of the scale or the other (see Fig. 1), the evaluation system indicates that there was neither consensus nor agreement.

Non-responses are left out of the denominator in calculating the percentages on which the determination of consensus is based. However, non-responses are considered when evaluating the results of the analysis. Specifically, a non-response rate of one third for a particular statement was selected as the boundary between a usable and unusable group evaluation of a statement. With 18 panelists completing the second round, a mean non-response rate of 0.85 per question (with a maximum of 3 non-responses) was acceptable.

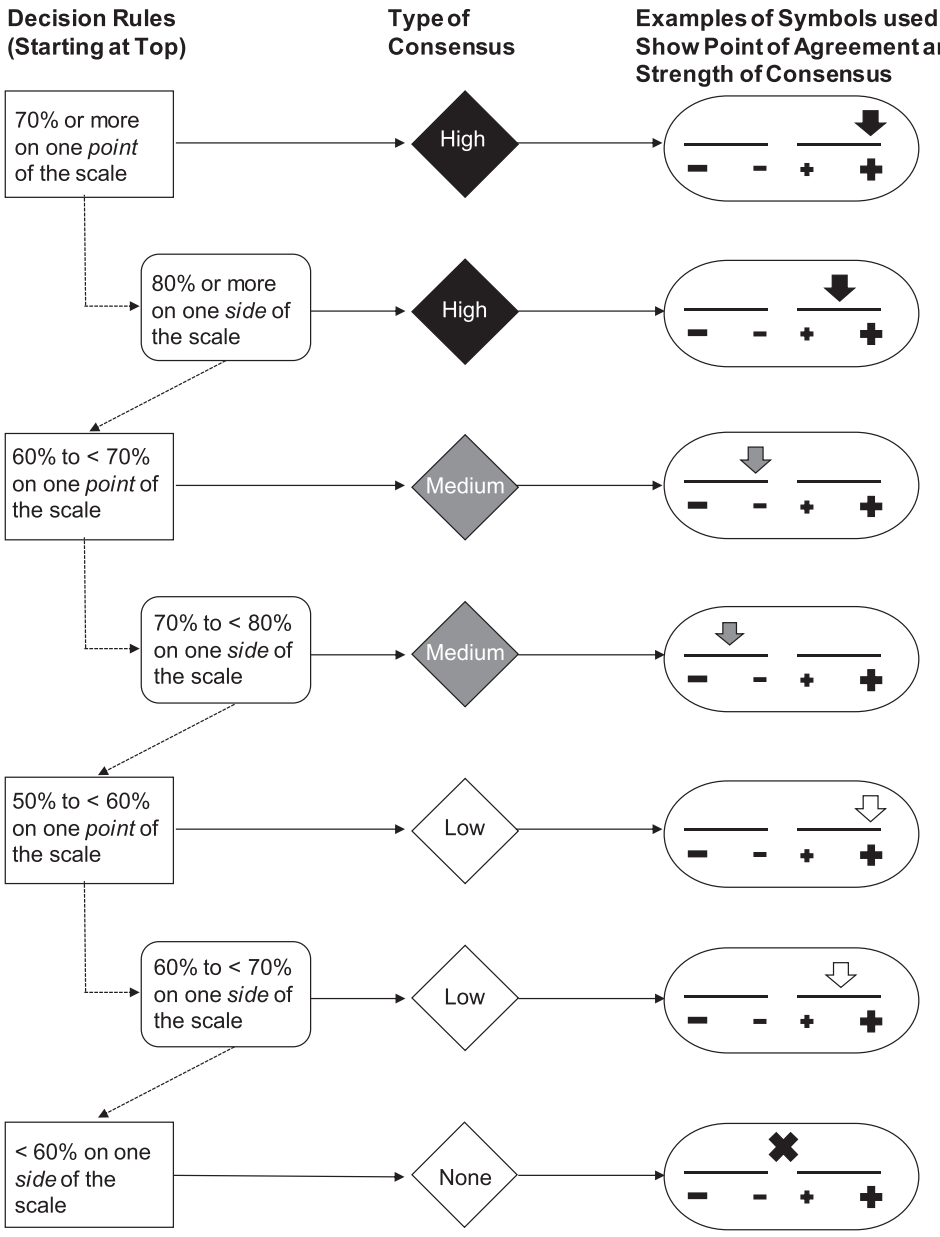
4. Results and discussion

Results are presented according to the five questions posed to panelists in the first round. In each sub-section, a table presents the corresponding statements verbatim, and indicates how they were evaluated by the panel using the graphical system in Fig. 1. To facilitate ease of interpretation, statements that received the same evaluation are grouped together. The number of panelists who completed the evaluation in Round Two was 18. Thus, statistical analysis of rating distributions by sector would not have been meaningful. Where appropriate, sectoral patterns are reported based on simple distributions of ratings by sector among rating categories. Deeper insight into industry positions is provided through selected quotations from participants.

In reading the tables, it is important to remember that all statements were suggested by one or more panelists in Round One, and that in many cases multiple anonymous panelists suggested similar statements. Hence, the statements evaluated by the panel in Round Two reflect the views of at least one – and usually more – experienced professionals in Canadian natural resource sector firms that use or rely on water.

4.1. What role(s) do you think that firms in your sector should play in collaborative approaches to water governance?

During the first round, the 22 panelists suggested 51 *roles* that were reduced to the 12 shown in Table 2. For 10 out of 12 there was a high consensus that these roles were appropriate. In the first group in Table 2 (high consensus on Very Appropriate), the perspective is strongly "defensive". Collaboration is viewed as a way to represent and protect the firm's interests and to manage risks through communicating information firms believe to be correct and accurate. For instance, in pointing to the need for clear,



Notes:

(1) Decision rules are applied from top to bottom, e.g., if 70% of the ratings are for one point on the scale, then the consensus is "High", with agreement on that point.

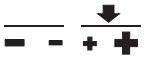
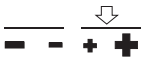
(2) Agreement and consensus are illustrated graphically. Arrows indicate point of consensus (e.g., black arrow on the large ✚ sign indicates a high consensus on "Very Significant", while white arrow in between the large and small ✚ signs indicates a low consensus on "Significant to Very Significant". Where there is no consensus, there is no point of agreement (represented with ✖).

Fig. 1. Evaluating and portraying round two results.

technically-sound information, a panelist from the forest sector argued "Our involvement is important so that other stakeholders understand what actions we are already taking and so that we can share the constraints or challenges we face." Panelists clearly recognized that collaborative processes have become a reality on the decision making landscape, and thus they want to be part of those processes so that they can influence their outcomes.

The defensive perspective is also evident in the second group of statements, which were evaluated as "Appropriate to Very Appropriate" with a high consensus. However, broader goals are revealed, including helping to strike a balance between competing priorities, and helping to ensure that water is used in a socially responsible and sustainable way. Panelists also supported the suggestion that an appropriate role for natural resource firms is to bring resources to the table; this theme in particular was repeated in later results. As a panelist from the electricity generation sector noted, "We also bring resources to the table (money and people) that may allow for solutions which would otherwise not have been

Table 2
Extent to which roles were appropriate for firms in their sector.

Evaluation of appropriateness	Role
	• Represent our company's position to ensure the company's needs are addressed (e.g., ensure that adequate supply of water exists for industry purposes) • Communicate potential impacts/risks of proposed courses of action (e.g. for social, economic, environmental variables) • Provide clear, technically sound descriptions of the company's water use and explanations as to why water use is essential or important for the industry • Ensure stakeholders understand that risk/impact mitigation comes at a financial cost and that this trade-off is a key consideration in decision-making • Play an active role in decision-making processes that affect industry operations
	• Bring resources to the table (money, technical expertise, research) to inform decision-making • Ensure that water is allocated/used in a socially responsible and sustainable manner • Participate in collaborative approaches with transparency • Provide information on company plans and activities to those responsible for making decisions and to those with an interest in the outcomes • Encourage the development of clear objectives for the collaborative approach (i.e. to be able to measure effectiveness) • Help strike a balance between environmental, economic and social priorities
	• Encourage ownership in the project by external stakeholders • Provide opportunities for other stakeholders to raise concerns/make suggestions that can lead to improvements in the company's operations

possible through just infrastructure management."

Two of the synthesized first round statements only received a low consensus on "Appropriate to Very Appropriate" during the second round. Both of these statements are premised on the notion that firms should be open to receiving input and direction from external actors (an idea that is entirely consistent with principles of collaborative decision making). Encouraging ownership in the project by external stakeholders and providing opportunities for other stakeholders to have input into the company's operations were rated on the appropriate side of the scale by 12 of the 18 panelists; these positions were rated on the inappropriate side of the scale by six panelists, with only one identifying them as very inappropriate. Nonetheless, relative to most of the other statements, where there was a high degree of consensus, the low consensus on these two statements suggests that opening the firm's operations to greater influence from external actors clearly was problematic for some panelists.

4.2. What benefits do firms in your sector receive from participating in collaborative water governance processes?

In Round One, the panelists suggested 47 *benefits for firms* that were distilled into 16 distinct statements for evaluation in the second round (Table 3). All 16 were considered significant with a high consensus. Perspectives evident in relation to the first question (roles) were strongly evident in the context of this question. For the 8 statements that were evaluated as "Very Significant" with a high consensus, the panel clearly viewed participation in collaborative processes for water governance as a defensive strategy, a source of intelligence about the decision making environment in which they were operating, a way to increase predictability and control, and a way to manage risks. This concern was captured effectively by a panelist from the oil and gas sector who noted in a first round statement that "Uncertainty and time delays are some of the most undesirable and expensive 'threats' to industry. By participating in collaborative governance processes, we can better predict how we will be governed in the future, and better prepare ourselves for that ahead of time, reducing both uncertainty, and time delays."

The second group of statements, which were evaluated as "Significant to Very Significant" with a high consensus, captured the themes evident in the first group. However, two of the statements reflected the importance of corporate image and a social license to operate. As another panelist from the oil and gas sector

Table 3
Extent to which benefits from participation in collaborative processes are significant for firms in their sector.

Evaluation of significance	Benefit
	• Gain understanding of the needs/interests/concerns of other stakeholders and what that may mean for our sector • Communicate with other stakeholders so that they better understand the role of industry; its interests in water supply and protection; and the challenges, opportunities and implications of decisions for our industry • Provide an opportunity for industry to be involved in policy development from the ground up • Participation allows industry to provide valuable input at key decision points to inform decision-making • Results in the development of stronger, more achievable policy • Results in the development of policy that has the support of industry • Participation provides the opportunity to give input on effective methods to achieve a desired goal, while minimizing any negative impact to our industry • Participation enables firms to better predict how we will be governed in the future, and better prepare ourselves for that ahead of time
	• Promote a positive corporate image • Learn from the diverse array of participants, and improve industry operations from an economic, social, and/or environmental perspective • Participate in collaborate processes to build community and stakeholder support for operations (i.e. achieving a 'social license' to operate) • Collaborative approaches provide an alternative to and reduce the need for regulatory approaches • Provides an opportunity to anticipate potential problems, and devise solutions before situations become critical and/or confrontational • Collaborative approaches generally provide a better approach to water management for the long-term • Participation in collaborative approaches provides an opportunity to ensure ongoing access to resources • Participation leads to more creative, cost-effective solutions being developed.

observed, “Participation allows us to put a face on our industry, show that there are educated, approachable people working here and working to improve our performance.” Additionally, three of the statements in this group reflected a collective belief that collaboration could lead to better, more creative or more enduring decision making.

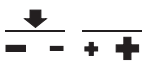
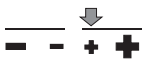
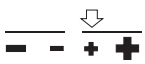
4.3. What challenges do firms in your sector face relating to participation in collaborative water governance processes?

During the first round, the panelists suggested 42 *challenges for firms* that were reduced to the 18 shown in Table 4. Unlike the benefits for firms, there was considerably more diversity in how these challenges were evaluated. In the first row in Table 4, 11 challenges that are common in collaborative processes were evaluated as “Significant to Very Significant” with a high consensus. These included a range of commonplace structural and process challenges such as difficulties that arise when some participants bring negative attitudes, attempt to dominate the process, or fail to engage on a frank basis. Collaborative processes are inherently “messy” in the sense that they bring together actors with different perspectives, interests, and skills. Hence, it is not surprising that the panel agreed that collaborative processes are inherently complex and uncertain, and that they can slow approval processes. This viewpoint was captured by an electric power generation sector panelist during the first round, who noted that “if the process becomes overly cumbersome there could be challenges in terms of resources. Also, different interest groups and stakeholders may have conflicting priorities, opinions and mandates and the ability to find common ground is sometimes difficult.”

The challenge of engaging First Nations people was specifically identified as significant concern for natural resource sector firms. This is unsurprising given that these firms frequently operate in the traditional territories of Canada's First Nations people. The idea that collaborative approaches provide no direct benefit to justify the effort spent on participating was evaluated as “Insignificant to Very Insignificant” with a high consensus. Of all the 67 synthesized statements included in the second round this was the only one to be clearly rejected by the panel. The remaining statements related to this question were evaluated with much less consistency. Panelists came to a medium consensus regarding the risks of negative outcomes and the business case for collaboration (despite also rejecting the suggestion that there were no direct benefits of collaboration). Illustrating this perspective, a first round statement offered by a panelist from the mining sector indicated that “In general, the dialogue around water governance is very focused on conservation and the absolute protection of water quality and quantity with little sense of what kinds of impacts are acceptable for the purposes of sustaining our society and for providing the economic and social opportunities necessary to support rural communities.” There was a medium consensus on the significance of the suggestion that industry has an image problem, and a low consensus on the significance of the suggestion that collaborative approaches are an inefficient way to make decisions.

For two statements in this group (Table 4, last row), there was neither consensus nor agreement (meaning that the panel was polarized). The first statement speaks to the relationship between collaborative processes (which are relatively new on the water governance landscape) and existing, typically long-established, regulatory processes. Six panelists rated this statement on the “insignificant” side of the scale, nine rated it on the “significant” side of the scale, and three could not decide. The number of

Table 4
Extent to which challenges from participation in collaborative processes are significant for firms in their sector.

Evaluation of significance	Challenge
	• When any stakeholder decides to not collaborate (i.e. participates as a win-lose, versus a win–win attitude) it becomes difficult to reach decisions • Certain voices monopolize the conversation, making it difficult to engage in a collaborative manner • Not all participants are sufficiently informed about the issues. In this environment it becomes a challenge to ensure that proposed outcomes are realistic and not unwittingly detrimental • Different interest groups and stakeholders may have conflicting priorities, opinions, and mandates making it difficult to find common ground • Collaborative approaches involve multiple stakeholders in decision-making. This can make decision making complex and contentious • The formative stages of collaborative processes lack clarity. It is difficult to justify committing to a process with no guarantee of what the process or governance model will look like • Collaborative processes can be unproductive, unless participants are frank about their experiences and priorities, and demonstrate trust and open mindedness • If there is not representation by all affected stakeholders there is a risk that something may be overlooked • Getting First Nations involvement or buy-in remains a challenge to be overcome • Making resources available to engage in collaborative processes is a challenge • Collaborative processes slow the approval process for projects or activities
	• Collaborative approaches provide no direct benefit to justify the effort spent on participating
	• Outcomes from collaborative processes are uncertain, increasing the risk that outcomes from this approach may negatively affect industry
	• Unless collaborative approaches are a regulatory requirement it is difficult to justify the business case for participating as there are already regulatory processes in place that deal with water • The stigma that industry is singularly focused and not truly interested in the collaborative process is a challenge we face
	• Collaborative approaches are an inefficient way to make decisions
	• It is difficult to know how to address potential conflicts between regulatory requirements and the requirements of collaborative approaches to decision making • Time required to correct misconceptions and gain trust reduces the time and effort that can be spent on addressing the issue at hand

panelists involved in the study was too small to make a statistical analysis of distribution of sectors among responses meaningful. However, the individual responses were examined to see if there was an obvious pattern in how participants from the various sectors evaluated this question. For all sectors except oil and gas there were roughly equal ratings for significance and insignificance. For oil and gas, the four panelists who rated the statement all considered it significant or very significant. The second statement that showed a polarized evaluation related to a process concern (time spent building trust reduces time that can be spent on addressing the issue at hand). The oil and gas sector panelist who raised this issue indicated that "Significant negative misinformation exists in the media about the oil and gas industry, and we must direct significant effort to correct these misperceptions and win back the trust of those who have lost confidence in the industry. This reduced the time and effort that can be spent on the issue at hand." No sectoral patterns were evident in this case.

4.4. How do collaborative water governance processes benefit from the participation of firms in your sector?

In Round One, the panelists suggested 33 benefits *for collaborative processes* that were distilled into 8 distinct statements for evaluation in the second round (Table 5). As in the case of the benefits *for firms* (Question 2), the statements were all evaluated as significant with a high consensus. Among the five statements rated "Very Significant" with a high consensus, the panelists strongly believed that firms brought critical skills, knowledge and resources to the table that strengthened collaborative processes. A typical example was provided by a panelist from the mining sector, who observed that "The mining sector conducts extensive monitoring. We have a lot of data to bring to the table. We also are required to do extensive modelling and predictive work in watersheds where we work." In a related way, panelists believed that better decisions and outcomes resulted from their participation. They also believed that collaboration was strengthened when other actors could gain a better understanding of business and its needs for water.

The three statements that were rated "Significant to Very Significant" with a high consensus (second row in Table 5) included one that spoke again to the possibility of better decisions and outcomes, and another that spoke to the societal benefit of other actors having a better appreciation of industry and its needs. The third statement in this group introduced a new perspective. Panelists believed that the participation of industry in collaborative processes for water governance increased the legitimacy of those processes. This view was captured during the first round by a panelist from the electric power generation (hydro) sector, who argued that "The process itself benefits when we participate because it becomes more complete. If a large player in watershed management declines to participate the validity of the process is questioned."

4.5. What challenges do collaborative water governance processes face from firms in your sector participating in those processes?

The panelists suggested 32 *challenges for collaborative processes* that were reduced to the 13 shown in Table 6. As in the case of challenges *for firms*, there was considerable diversity in how these statements were evaluated. The first row in Table 6 contains six statements that were evaluated as "Significant to Very Significant" with a high consensus. Some of these related to process considerations that are common in many multi-actor processes. For example, panelists recognized how collaborative processes that involve people who lack the authority to implement the decisions made by those processes can be ineffectual. They also recognized that participants may have very different educational backgrounds and understanding of issues; this can be a challenge when the industry participants attempt to communicate technical issues to other participants. This perspective was reflected in the suggestion from an oil and gas sector panelist who referred to "The challenge of communicating a complex science to the un-initiated." Resource concerns also resonated with panel members. In particular, they endorsed the suggestion that inconsistency in industry's commitment of resources to processes can weaken those processes. Concerns regarding negative perceptions of industry appeared again in this group as a key challenge.

The second row in Table 6 includes two challenges for collaborative processes that related to the motivations of firms and were rated as "significant" with a high consensus. In collaborative processes it is normal for participants to have different end goals, and the panel recognized that the goals of industry might not be compatible with those of other participants. The second statement in this group captures the possibility that firms may not be able to add value to collaborative processes because of their efforts in other areas.

The three statements in Table 6 that were evaluated as "Significant to Very Significant" with a medium consensus (third row) reflect fundamental characteristics of natural resource firms relative to other actors typically found in collaborative processes for water governance in Canada. Indirectly, the first statement in this group reflects the fact that firms may consider much of the information in their possession proprietary, and thus will be unwilling to share it within the uncontrolled environment of a collaborative process. Related to the theme of information, the second statement in the group speaks to the challenge of deciding which information sources are valid; this statement can be read as an implicit suggestion that the information provided by firms may not be trusted

Table 5
Extent to which benefits to collaborative processes that result from participation of firms in their sector are significant.

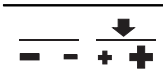
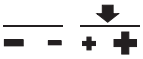
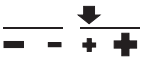
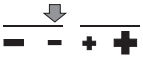
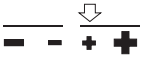
Evaluation of significance	Benefit
	• Natural resource sector firms have knowledge, experience and financial resources to bring to the table which will allow for better informed decisions to be made • Participation of industry helps to identify win-win solutions to problems • Participants in collaborative processes gain a better understanding our business, its need for water, and our interests in water supply and protection • Collaborative processes benefit from industry participation because natural resource sector firms can bring both experts and information to the table • Industry can help identify and prevent potential unintended consequences of draft policy
	• When industry is involved in collaborative approaches there is less of a chance of encountering unexpected and unwanted consequences • Industry, as a large stakeholder in water governance, adds validity to the process through participation • Industry involvement in collaborative processes can help to break down possible negative perceptions of industry

Table 6
Extent to which challenges to collaborative processes that result from participation of firms in their sector are significant.

Evaluation of significance	Challenge
	• Regional differences in water use and availability across the country present barriers in developing consistent approaches • The benefits of a collaborative approach to water governance far outweighs any challenges • If the industry representative does not have the authority to act on what is agreed then the process will have limited impact • The negative perception of some stakeholders of industry inhibits the collaboration process • Being able to fully participate in the process can be a challenge as allocating adequate resources to meet demand is difficult • The issues that are dealt with are extremely complex. There is a challenge in communicating complex science/problems to other participants so that they can make informed decisions
	• What industry hopes to achieve through the process can be incompatible with what other participants hope to achieve • Industry has devoted significant resources to increasing our efficiencies, and have already picked the 'low hanging fruit'. Further efforts will be difficult and/or expensive
	• Ensuring that firms are sharing all relevant information that they have in their possession can be a challenge • Participants in the process receive conflicting information about issues, and have the difficult job of deciding which information is the most representative • Decision-making processes that are inefficient/unfocussed make it difficult for industry to maintain continued support
	• Industry may come to dominate within the collaborative process, resulting in a process that is not well balanced
	• Industry may engage in collaborative processes with a narrow agenda

by other participants. The final statement in this group speaks again to the desire of private sector firms to have certainty and control. Collaborative processes can be messy and uncertain decision making environments. Reflecting this concern, a panelist from the electricity generation sector suggested that "Ensuring that there are clear terms of references and outcomes defined would make it easier to allocate resources where they will have the best fit."

The remaining two statements in Table 6 are the closest the panel members came to considering the kinds of power-related concerns discussed at the outset in this paper. The potential for industry to dominate collaborative processes was identified in Round One, but rated as "Insignificant" with a medium consensus by the panel. The person who suggested this during the first round, a mining sector panelist, argued that "I am aware that in the past mining companies have been dominant forces in some planning processes. There is a risk of that [dominance] if planning groups are not well balanced." Two of the panelists thought this challenge for collaborative processes was "Very Insignificant", but four considered it at least Significant or Very Significant. The final statement in Table 6 raised the concern that firms engaged in collaboration with a narrow agenda. "Some oil and gas industry representatives might put forth issues motivated by their own political agendas rather than to promote the intent of the policy. These need to be teased out" (oil and gas sector panelist). This statement was evaluated as "Significant" with a low consensus. Importantly, however, 11 of the 16 people who rated the statement did think that it was at least significant (with two suggesting that it was Very Significant).

4.6. Discussion

Overall, these results indicate that collaborative processes offer real and important benefits to industry. Consistent with findings from the literature, and with discussions of partnerships in natural resource firm strategic documents (e.g., Suncor Energy Inc, 2014; Weyerhaeuser Inc. 2015), these included being able to communicate with and shape the perceptions of other participants (Austin and Seitanidi, 2012a; den Hond et al., 2015), manage risk and uncertainty (Godfrey et al., 2009), and participate in decision/policy-making processes to shape outcomes (Seitanidi, 2010). From the perspective of firms, collaborative approaches create a more interactive and relationship-driven approach to decision/policy-making. This was seen as beneficial to natural resource sector firms by study participants. Interestingly, while collaborative processes provide the opportunity for firms to understand the perspectives of other actors, the panelists were not strongly supportive of the idea that those other actors should be able to influence the firm's operational decisions or perspectives. This reflects a tendency to view collaboration as a CSR strategy designed to enhance the position of firms (Kleinrichert, 2008; Mason and O'Mahony, 2008), a paternalistic approach, rather than as a way to enhance governance for water more broadly. This is consistent with research that found that, while motivations for participation in CSR-related collaboration may be varied (Brammer et al., 2012), CSR activities are often pursued only to the extent that they are consistent with enhancement of shareholder value (Mason and O'Mahony, 2008).

Study participants also clearly believed that the involvement of natural resource sector firms in collaborative processes creates real benefits for those processes. Consistent with benefits of collaboration for non-profits identified in literature examining corporate perspectives (Austin and Seitanidi, 2012a; den Hond et al., 2015), these benefits can be summarized under two themes: firms bring experience, expertise, and resources to the process and by doing so encourage better informed decisions; and, collaborative processes benefit from industries in the natural resources sector communicating their positions to other stakeholders. Inherent in these themes is the assumption of participants that greater involvement of natural resource sector firms in decision/policy-making improves outcomes such as reduced conflict, better relationships with communities, and improved environmental conditions.

At the same time, the results indicate that while firms are well aware of more fundamental challenges associated with collaborative approaches, these challenges do not appear to significantly affect their decision to participate in such approaches. Natural resource sector firms support collaborative approaches and are concerned with improving the operation of such processes. Panelists were consistently able to identify *linked interests* and *strategic fit*, including ways that the social and economic goals of firms and industries are aligned with collaborative goals that do not conflict with the fundamental goals or values of either (Austin and Seitanidi, 2012b; den Hond et al., 2015). Panelists also recognized

numerous challenges *for* collaborative processes that were linked to the involvement of natural resource sector firms. Many of these were process-related. However, panelists also demonstrated awareness (if not always agreement) regarding the significance of more fundamental challenges linked to the motivations of firms, their potentially disproportionate influence over processes (e.g., their ability to access resources, people and knowledge that may be unavailable to other participants), and the extent to which they are willing to engage genuinely in those processes.

An important overall finding from this survey is the generally high level of consensus reached by participants on the Round Two questions. This is noteworthy for three reasons. First, participants represented a range of natural resource sector firms operating in the mining, oil and gas, electricity generation and forestry sectors located across Canada. Where there was disagreement, the sector in which participants were employed does not seem to have been a factor that influenced their responses. Second, through descriptions of their previous experiences, participants revealed that their responses were individually shaped by their involvement in a diversity of collaborative processes. For example, some drew their experience from regulatory or technically-focused collaborative processes, while others drew from their experience in 'bottom-up' habitat restoration initiatives. The level of agreement with the Round Two statements suggests that collaborative processes, while potentially very different in their focus and design, are experienced by participants in similar ways. That is, benefits and challenges of such approaches may be universal among natural resource sector firms. Third, the identity of the participants was known only to the researchers. Thus, the policy Delphi process eliminated the possibility of "group think" and peer pressure. This strongly suggests that collaborative processes for water governance in Canada are experienced and perceived in similar ways by people working for natural resource sector firms despite sectoral and geographical differences.

Importantly, this study reveals the perspectives of firms on collaboration. This means that more critical perspectives on industry participation in collaboration are absent. However, these perspectives have been explored elsewhere with respect to both corporate alliances and irresponsible corporate behavior (Greenwood, 2007), and the type of collaboration described in this study (Brisbois, 2015b).

5. Conclusions and implications

Brammer et al. (2012) argue that private sector firms engage in activities that relate to "corporate social responsibility" for reasons that extend well beyond profit maximization. This study brings a similarly nuanced perspective to questions about natural resource sector firm participation in collaborative processes relating to governance for water. Firms that participated in this study clearly were aware of the challenges inherent in collaborative approaches to water governance. However, their representatives believed that these challenges were outweighed by the benefits that these approaches offered. These benefits included the ability to engage with and influence decision/policy-making from the ground up, to build relationships with other water governance actors in the areas where they operate, and to influence their thinking.

Participants clearly did not view collaboration as a particularly risky activity that could result in decisions that affected core business activities negatively. The example of the Athabasca Watershed Council in Alberta (Box 1) is typical; important decisions that affected energy firms' core business operations were not made in that setting. Thus, firms could participate to gain benefits with little exposure to the risk that decisions would be made that affected their core business activities. This is consistent with experiences beyond Canada, where collaborative, multi-actor processes represent a new opportunity for natural resource sector firms to influence policy and decision making – without having to give up any of the traditional avenues of influence that derive from the power they are able to exercise (i.e., lobbying, participation in regulatory processes) (Pares, 2011). This outcome is not surprising because collaborative processes usually operate in parallel with, or subsidiary to, regulatory approaches (Holley et al., 2012).

Natural resource sector firms are key players in water governance in many parts of the world. Therefore, it is encouraging that in Canada they view collaboration as a worthwhile and important activity. Given the increasing use collaboration globally, these findings will be relevant to jurisdictions beyond Canada. However, our findings also raise concerns. For example, collaboration, as a particular style of multi-actor decision-making, is premised on relative equality among participants with respect to both their ability to influence and be influenced in return (Ansell and Gash, 2007). Collaborative processes for addressing water-related challenges have become commonplace. It remains to be seen whether or not these processes can function successfully and have legitimacy when critical actors such as large natural resource sector firms can also operate around or outside them to achieve their ends, or can participate in ways designed to influence collaborative outcomes without being influenced by those outcomes. Evidence from other jurisdictions suggests that these tactics can decrease the legitimacy of collaborative processes (Pares, 2011; Clare et al., 2013). Hence, while we have contributed to a more nuanced discussion of the role of firms in collaborative processes through this research, considerable scope remains for further exploration of the role of private sector firms in collaborative resource governance.

Acknowledgements

We are very grateful to the industry participants who provided their insights and time in support of this work. We would also like to René Drolet, National Round Table for Environment and Economy, for his assistance recruiting the panel and his support of the study. The research itself was supported financially by a grant from the Canadian Water Network (2007-4-150-75): *Governance for Watershed-Based Source Water Protection in Canada: A National Assessment* (Rob de Loë, Principal Investigator). Finally, we thank the editors and referees who provided very constructive and helpful advice during the review process.

References

Aguilera, R.V., Rupp, D.E., Williams, C.A., Ganapathi, J., 2007. Putting the S back in corporate social responsibility: a multilevel theory of social change in organizations. Acad. Manag. J. 32 (3), 836–863.
Alberta Environment, 2003. Water for Life: Alberta's Strategy for Sustainability. Publication Number I/955. Alberta Environment, Edmonton, Alberta.
Albino, V., Dangelico, R.M., Pontrandolfo, P., 2012. Do inter-organizational collaborations enhance a firm's environmental performance? A study of the largest U.S. companies. J. Clean. Prod. 37, 304–315.
Ansell, C., Gash, A., 2007. Collaborative governance in theory and practice. J. Public Adm. Res. Theory 18 (4), 543–571.
Austin, J.E., Seitanidi, M.M., 2012a. Collaborative value creation: a review of partnering between nonprofits and businesses. Part 2: Partnership processes and outcomes. Nonprofit Volunt. Sect. Q. 41 (6), 929–968.
Austin, J.E., Seitanidi, M.M., 2012b. Collaborative value creation: a review of partnering between nonprofits and businesses: Part 1. Value creation spectrum and collaboration stages. Nonprofit Volunt. Sect. Q. 41 (5), 726–758.
Booher, D., Innes, J.E., 2010. Governance for resilience: CALFED as a complex adaptive network for resource management. Ecol. Soc. 15 (3) (Online).
Brammer, S., Jackson, G., Matten, D., 2012. Corporate Social Responsibility and institutional theory: new perspectives on private governance. Socio-econ. Rev. 10, 3–28.
Brisbois, M.C., 2015a. Natural Resource Industries and the State in Collaborative Approaches to Water Governance: a Power-based Analysis. University of Waterloo, Waterloo, ON. Unpublished Doctor of Philosophy Thesis.

Brisbois, M.C., 2015b. Natural Resource Industries and the State in Collaborative Approaches to Water Governance: a Power-based Analysis. University of Waterloo, Waterloo, ON. Unpublished Doctor of Philosophy Thesis.
Brisbois, M.C., de Loë, R.C., 2014. Power and influence: natural resource industries and collaboration for water governance. In: Paper Presented at the Canadian Water Resources Association Congress, Hamilton, Ontario, June 3, 2014 (Unpublished).
Brisbois, M.C., de Loë, R.C., 2015. Power in collaborative approaches to governance for water: a systematic review. Soc. Nat. Resour. 1–16 online.
Brooks, S., Stritch, A., 1991. Business and Government in Canada. Prentice-Hall Canada Inc, Scarborough.
Campero, C., Barton, J.R., 2015. 'You have to be with God and the Devil': linking Bolivia's extractive industries and local development through social licences. Bull. Lat. Am. Res. 34 (2), 167–183.
Canada's Oil Sands Innovation Alliance, 2013. Delivering Environmental Performance. http://www.cosia.ca/ (Unpublished).
Clancy, P., 2014. Freshwater Politics in Canada. University of Toronto, Toronto.
Clare, S., Krogman, N., Caine, K.J., 2013. The "balance discourse": a case study of power and wetland management. Geoforum 49, 40–49.
Coen, D., 2005. Environmental and business lobbying alliances in Europe: learning from Washington. Chapter in. In: Levy, D.L., Newell, P. (Eds.), The Business of Global Environmental Governance. The MIT Press, Cambridge, pp. 197–222.
Connick, S., Innes, J.E., 2003. Outcomes of collaborative water policy making: applying complexity thinking to evaluation. J. Environ. Plan. Manag. 46 (2), 177–197.
de Loë, R.C., 1995. Exploring complex policy questions using the policy Delphi. A multi-round, interactive survey method. Appl. Geogr. 15 (1), 53–68.
de Loë, R.C., Wojtanowski, D., 2001. Associated benefits and costs of the Canadian flood damage reduction program. Appl. Geogr. 21 (1), 1–21.
den Hond, F., de Bakker, F.G.A., Doh, J., 2015. What prompts companies to collaboration with NGOs? Recent evidence from the Netherlands. Bus. Soc. 54 (2), 187–228.
Emerson, K., Nabatchi, T., Balogh, S., 2012. An integrative framework for collaborative governance. J. Public Adm. Res. Theory 22 (1), 1–29.
Falkner, R., 2008. Business Power and Conflict in International Environmental Politics. Palgrave Macmillan, New York.
Forester, J., 1985. Practical rationality on planmaking. Chapter in. In: Breheny, M., Hooper, A. (Eds.), Rationality in Planning: Critical Essays on the Role of Rationality in Urban & Regional Planning. Pion Limited, London.
Franklin, K.K., Hart, J.K., 2007. Idea generation and exploration: benefits and limitations of the policy delphi research method. Innov. High. Educ. 31 (4), 237–246.
Freeman, R.E., Harrison, J.S., Wicks, A.C., 2007. Managing for Stakeholders: Survival, Reputation, and Success. Yale University Press, New Haven.
Fuchs, D., 2007. Business Power in Global Governance. Lynne Rienner Publishers Inc, Boulder.
Gleick, P.H., Allen, L., Cohen, M.J., Cooley, H., Christian-Smith, J., Heberger, M., Morrison, J., Palaniappan, M., Schulte, P., 2011. The World's Water, Volume 7. In: The Biennial Report on Freshwater Resources. Island Press, Washington, D.C.
Godfrey, P.C., Merrill, C.B., Hansen, J.M., 2009. The relationship between corporate social responsibility and shareholder value: an empricial test of the risk management hypothesis. Strateg. Manag. J. 30, 425–445.
Gray, B., 1985. Conditions facilitating interorganizational collaboration. Hum. Relat. 38 (10), 911–936.
Greenwood, M., 2007. Stakeholder engagement: beyond the myth of corporate responsibility. J. Bus. Ethics 74 (4), 315–327.
Gunningham, N., 2009. The new collaborative environmental governance: the localization of regulation. J. Law Soc. 36 (1), 145–166.
Gunningham, N., Kagan, R.A., Thornton, D., 2003. Shades of Green: Business, Regulation, and Environment. Stanford University Press, Stanford.
Healey, P., 2003. Collaborative planning in perspective. Plan. Theory 2 (2), 101–123.
Holley, C., Gunningham, N., Shearing, C., 2012. The New Environmental Governance. Routledge, London, UK.
Innes, J.E., 1996. Planning through consensus building: a new perspective on the comprehensive planning ideal. J. Am. Plan. Assoc. 62 (4), 460–472.
Innes, J.E., Booher, D.E., 2010. Planning with Complexity: an Introduction to Collaborative Rationality for Public Policy. Routledge, New York.
Jordaan, S.M., 2012. Land and water impacts of oil sands production in Alberta. Environ. Sci. Technol. 46, 3611–3617.
Kallis, G., Kipping, M., Norgaard, R., 2009. Collaborative governance and adaptive management: lessons from California's CALFED water program. Environ. Sci. Policy 12 (6), 631–643.
Kelly, E.N., Schindler, D.W., Hodson, P.V., Short, J.W., Radmanovich, R., Nielsen, C.C., 2010. Oil sands development contributes elements toxic at low concentrations to the Athabasca River and its tributaries. Proce. Nat. Acad. Sci. 107 (37), 16178–16183.
Kim, Y., Darnall, N., 2015. Business as a Collaborative Partner: Understanding Firms' Sociopolitical Support for Policy Formation (Public Administration Review online).
Kleinrichert, D., 2008. Ethics, power and communities: corporate social responsibility revisisted. J. Bus. Ethics 78, 475–485.
Lambooy, T., 2011. Corporate social responsibility: sustainable water use. J. Clean. Prod. 19, 852–866.
Leach, W.D., Pelkey, N.W., Sabatier, P.A., 2002. Stakeholder partnerships as collaborative policymaking: evaluation criteria applied to watershed management in California and Washington. J. Policy Anal. Manag. 21 (4), 645–670.
Lubell, M., 2015. Collaborative partnerships in complex institutional systems. Curr. Opin. Environ. Sustain. 12, 41–47.
Lubell, M., Schneider, M., Scholz, J.T., Mete, M., 2002. Watershed partnerships and the emergence of collective action institutions. Am. J. Polit. Sci. 46 (1), 148–163.
Lukes, S., 2005. Power: a Radical View, second ed. Palgrave Macmillan, Basingstoke.
Margerum, R.D., 2008. A typology of collaboration efforts in environmental management. Environ. Manag. 41, 487–500.
Margerum, R.D., Robinson, C.J., 2015. Collaborative partnerships and the challenges for sustainable water management. Curr. Opin. Environ. Sustain. 12, 53–58.
Mason, M., O'Mahony, J., 2008. Post-traditional corporate governance. J. Corp. Citizsh. 31, 1–14.
Memon, A., Weber, E.P., 2010. Overcoming obstacles to collaborative water governance: moving toward sustainability in New Zealand. J. Nat. Resour. Policy Res. 2 (2), 102–116.
Moore, S., Wallington, T., Hobbs, R., Ehrlich, P., Holling, C.S., Levin, S., Lindenmayer, D., Pahl-Wostl, C., Possingham, H., Turner, M., Westoby, M., 2009. Diversity in current ecological thinking: implications for environmental management. Environ. Manag. 43, 17–27.
Murray, D., 2005. A critical analysis of communicative rationality as a theoretical underpinning for collaborative approaches to integrated resource and environmental management. Environments 33 (2), 17–35.
National Round Table on the Environment and the Economy, 2011. Charting a Course: Sustainable Water Use by Canada's Natural Resource Sectors. National Round Table on the Environment and the Economy, Ottawa,ON.
Needham, R.D., de Loë, R.C., 1990. The policy delphi: purpose, structure, and application. Can. Geogr. 34 (2), 133–142.
Newell, P., Pattberg, P., Schroeder, H., 2012. Multiactor governance and the environment. Annu. Rev. Environ. Resour. 37, 365–387.
Owen, J.R., Kemp, D., 2013. Social licence and mining: a critical perspective. Resour. Policy 38 (1), 29–35.
Pares, M., 2011. River basin management planning with participation in Europe: from contested hydro-politics to governance-beyond-the-state. Eur. Plan. Stud. 19 (3), 457–478.
Parsons, R., Lacey, J., Moffat, K., 2014. Maintaining legitimacy of a contested practice: how the minerals industry understands its 'social licence to operate. Resour. Policy 41, 83–90.
Plummer, R., FitzGibbon, J., 2004. Some observations on the terminology in cooperative environmental management. J. Environ. Manag. 70, 63–72.
Reed, M.G., Bruyneel, S., 2010. Rescaling environmental governance, rethinking the state: a three-dimensional review. Prog. Hum. Geogr. 34 (5), 646–653.
Schrecker, T., 2005. Class, place, and citizenship: the changing dynamics of environmental protection. Chapter in. In: Paehlke, R., Torgerson, D. (Eds.), Managing Leviathan, 2. Broadview Press, Peterborough, pp. 125–144.
Seitanidi, M.M., 2010. The Politics of Partnership. A Critical Examination of Nonprofit-business Partnerships. Springer, New York, N.Y.
Simpson, H.C., 2014. The Agricultural Community and its Contribution to Collaborative Environmental Problem-solving. Department of Geography and Environmental Management, University of Waterloo, Waterloo, ON. Unpublished Doctor of Philosophy Thesis.
Suncor Energy Inc, 2014. Framing the Next Convervation. Suncor Energy Inc, Calgary.
Taylor, B., de Loë, R.C., Bjornlund, H., 2013. Evaluating knowledge production in collaborative water governance. Water Altern. 6 (1), 42–66.
van Tol Smit, E., de Loe, R., Plummer, R., 2015. How knowledge is used in collaborative environmental governance: water classification in New Brunswick, Canada. J. Environ. Plan. Manag. 58 (3), 423–444.
Vangen, S., Huxham, C., 2003. Nurturing collaborative relations: building trust in interorganizational collaboration. J. Appl. Behav. Sci. 39 (5), 5–31.
von der Gracht, H.A., 2008. The delphi technique for futures research. Chapter in. In: von der Gracht, H.A. (Ed.), The Future of Logistics: Scenarios for 2025, Einkauf, Logistik Und Supply Chain Management. Gabler-Verlag, Wiesbaden, Germany, pp. 21–68.
von der Porten, S., de Loë, R.C., 2013. Collaborative approaches to governance for water and Indigenous peoples: a case study from British Columbia, Canada. Geoforum 50, 149–160.
Water Policy and Governance Group and National Round Table on the Environment and the Economy, 2010. Exploring the Changing Role of the Natural Resource Sectors in Canadian Water Governance: Implications and Opportunities. Water Policy and Governance Group, Waterloo, ON. Workshop Report.
Watson, N., 2007. Collaborative capital: a key to the successful practice of integrated water resources management. Chapter in. In: Warner, J. (Ed.), Multi-stakeholder Platforms for Integrated Water Management. Ashgate Publishing Limited, Hampshire, England, pp. 31–48.
Weyerhaeuser Inc, 2015. Stakeholder Engagement. http://weyerhaeuser.com/sustainability/communities/stakeholder-engagement/ (Accessed June 3, 2015. Unpublished).
World Wildlife Fund and The Coca-Cola Company, 2012. A Transformative Partnership to Conserve Water: Annual Review 2012. World Wildlife Fund and The Coca-Cola Company.