Key Structural Features for Collaborative Strategy Implementation: A Study of Sustainable Development/Local Agenda 21 Collaborations

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Abstract

Cross-sector partnerships often formulate collaborative strategic plans. This study considers key structural features for implementing the plan, when considering the achievement of the collaborative goals (i.e., the plan-centric outcomes). Drawing upon findings from four in-depth case studies about collaborative regional sustainable development strategies (CRSDS), this paper offers five criteria for evaluating a CRSDS implementation structure.

Résumé

Les partenariats de différents secteurs élaborent souvent des plans stratégiques de collaboration. La présente étude examine les caractéristiques structurelles clés de l'exécution de ce type de plan, en tenant compte de l'atteinte des objectifs collaboratifs (c.-à-d. des retombées se rattachant aux questions autour desquelles la collaboration s'est cristallisée, ces questions étant documentées dans le plan stratégique de collaboration). En s'appuyant sur des observations découlant de quatre études de cas approfondies portant sur des stratégies collaboratives de développement régional durable (SCDRD), cet article propose cinq critères permettant d'évaluer la structure d'exécution d'une SCDRD.

Key Structural Features for Collaborative Strategy Implementation: A Study of Territorial Sustainable Development Collaborations

1. Introduction

Cross-sector social partnerships are a means for organizations in a territory (i.e., geographic region) to pursue sustainable development (Glasbergen, 2007). This approach enables organizations to work together to achieve solutions that are beyond the jurisdiction of any one organization (Clarke & Erfan, 2007). These partnerships often formulate and implement a collaborative strategy (Astley & Fombrun, 1983; Huxham & Macdonald, 1992), resulting in collaborative regional sustainable development strategies (CRSDSs)[1]. In practice, these CRSDSs are found world-wide and are sometimes termed Local Agenda 21s (ICLEI, 2002b). Local Agenda 21s (LA21s) are the municipal or regional level manifestation of the United Nation's Agenda 21(UNCED, 1992) and are a specific approach to CRSDSs. In some parts of the world, such as English Canada, LA21s go by other names. Theoretically, little is known about the implementation of collaborative strategies, and which structural features enable the achievement of the collaborative goals.

There is literature on implementing organizational strategies (Daft & Macintosh, 1984; Pinto & Prescott, 1990), but this is of limited applicability at the collaborative level. Clarke and Fuller (2011) offer a process model for collaborative strategic management, including the stages of: partnership formation; collaborative strategic plan formulation; deliberate and emergent strategy implementation by the partnership; deliberate and emergent strategy implementation per organization; and ultimately realized collaborative strategy implementation outcomes. There has also been considerable theorizing about the formation of partnerships and the formulation of a common vision (Gray, 1985; Hardy et al., 2005), but very little on implementation. Most of what is written about outcomes of collaborations refers to process achievements such as trust-building, gained legitimacy, and learning (Hardy et al., 2003; Turcotte & Pasquero, 2001). Yet, many practitioner organizations desire to achieve the collaborative goals, such as the goals on sustainable development; thus, more research is needed on what enables plan outcomes to be achieved. Plan-centric outcomes are "outcomes related to the underlying issue(s) around which the collaboration has formed, and which are documented in the collaborative strategic plan" (Clarke & Fuller, 2011, p. 90). For example, in a collaborative strategic plan on sustainable development, there is often a collaborative goal on the reduction of greenhouse gas emissions.

In terms of achieving plan outcomes, it is known that structure influences the implementation of collaborative strategies (Huxham & Vangen, 2000), including the continued involvement of organizational partners (Hood et al., 1993), so this study focuses on structural features in particular. Yet, little is known about the relationship between collaborative structure and outcomes. Achieving sustainable development at the local level requires a large number of organizations and a wide diversity of organization types (Geddes, 2008); therefore, this study focuses on large cross-sector partnerships (Selsky & Parker, 2005).

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[1] Note: CRSDS is a generic term used to describe any local sustainable development strategy which was formulated through a cross-sector partnership. It might involve a local government (such as a municipality) and/or a regional government; in this term, "regional" denotes a geographic region and not a regional government. The term was created for the purpose of this paper.

The specific research questions are:
1. What are the key structural features which matter for CRSDS implementation, when considering the achievement of collaborative goals?
2. What criteria would enable the evaluation of a CRSDS implementation structure to ensure it includes the key structural features?

In this paper, an introduction to CRSDS is provided next, followed by the methodology section. Then, details are provided on CRSDS content and outcomes achieved to date for each of four cases, focusing on the issues of greenhouse gas (GHG) emissions and air quality. Cross-case comparisons are presented, leading to a discussion about the key features for achieving collaborative goals, and five evaluation criteria. These findings provide a contribution to both practice and the literature on collaboration.

2. Collaborative Regional Sustainable Development Strategy (CRSDS)

The concept of regional sustainable development emerged in the 1990s and is outlined in a series of United Nations agreements, including Agenda 21, the Habitat Agenda, and the Johannesburg Plan of Implementation. Topics in a typical collaborative regional sustainable development strategic plan can range from adequate shelter, natural resource use (including water, air, biodiversity, forests, energy, and land), infrastructure (including buildings, fleets, roads, bike paths, and water treatment), and waste management (including water, sanitation, drainage, and solid-waste), to healthy communities and green economy.

Local and regional governments have a leadership role in regional sustainable development (Geddes, 2008), but are unable to tackle many of the issues alone. Thus, interorganizational collaborations through cross-sector social partnerships have arisen. Cross-sector social partnerships (Selsky & Parker, 2005) are a voluntary collaboration created to address a social problem (Gray, 1989; Waddock, 1991). Regional sustainable development partnerships are one example; they are bounded by a local territory (such as a city boundary) and involve numerous partners including large companies, small- and medium-sized businesses, business associations, universities, the municipal government, hospitals, and NGOs (Geddes, 2008). These regional sustainable development partnerships have led to a rise in CRSDSs (Clarke & Fuller, 2011). In these partnerships, generally the strategic plan formulation is followed by a distinct implementation phase during which a new structure is created.

2.1 Local Agenda 21s

One approach being taken to achieve sustainable development at the regional level is termed "Local Agenda 21" (LA21) – an approach which meets the definition of a collaborative regional sustainable development strategy (CRSDS). "Agenda 21" is a UN agreement which outlines a global action plan on environment and development. Local Agenda 21 is defined as:

> A participatory, multistakeholder process to achieve the goals of *Agenda 21* at the local level through the preparation and implementation of a long-term, strategic plan that addresses priority local sustainable development concerns. (ICLEI, 2002a: 6)

A 2002 survey found that 6,416 local governments in 113 countries had undertaken some LA21 activities over the previous 10-year period (ICLEI, 2002b). For a region to qualify as "having an LA21" (the expression used in practice), the collaboration, partnership and strategic plan must also meet the following criteria:
- Must include a participatory process with local citizens
- Must include a consensus on a vision for a sustainable future

- Must address economic, social, and ecological needs together
- Must establish a roundtable, stakeholder group, forum, or equivalent multi-sectoral community group to oversee the process
- Must prepare an action plan[2]
- Must prepare an action plan with concrete long-term targets
- Must establish indicators to monitor progress
- Must establish a monitoring and reporting framework (ICLEI, 2002a: 8)

These make it clear that the Local Agenda 21 approach inherently involves collaboration among organizations in both the planning and the implementation processes. Guidance on the planning process is available for regions, as well as information about best practices for topic-specific initiatives (e.g., waste management) (ICLEI, 2011); but notably absent from LA21 documentation is guidance for regions on which structure to put in place during the implementation phase. This represents a notable gap in knowledge for practice.

2.2 Collaborative Strategic Plan Outcomes and Collaborative Structure
From a theoretical perspective, most studies of collaboration are limited to "the process of collaboration, its stages, or its success components. Few studies discuss the actual [plan] outcomes..." (Turcotte & Pasquero, 2001: 448). Clarke and Fuller (2011) detailed six types of outcomes which have been written about in the collaboration literature: plan-centric, process-centric, partner-centric, outside-stakeholder centric, person-centric, and environmental-centric (meaning context related). Of these, this study is interested in the outcomes related to the achievement of goals articulated in the collaborative strategic plan (e.g., Gray, 1989; Hood et al., 1993), referred to here as "plan outcomes".

Progress towards the achievement of collaborative strategic plan goals (i.e., plan outcomes) is typically documented in reports, such as "state of the environment reports" (Clarke & Fuller, 2011). By documenting results over a number of years, progress towards the goals can be monitored. Plan-centric outcomes can be contrasted with process-centric outcomes, which are "outcomes that lead to alterations, adaptations, and changes to the collaboration formation, design, and implementation process, along with actions as part of the implementation process" (Clarke & Fuller, 2011, p. 90). Typically, a cross-sector social partnership also monitors process outcomes (e.g., the number of organizations engaging in implementation efforts). This study is interested in the structural features, including process features, which enable the achievement of plan outcomes.

Structure is made up of the partners, form(s), and processes (Clarke, 2010a; Huxham & Vangen, 2000). There is a wide variety of structural arrangements that may emerge during the implementation phase (Clarke & Erfan, 2007). The question is which structural features are critical for achieving plan outcomes.

3. Methodology
Collaborative regional sustainable development strategies (CRSDSs) provide an opportunity for studying the implementation of cross-sector, multi-organizational, socially-oriented, collaborative strategies. They also tend to be well documented and accessible in Canada (Clarke & Erfan, 2007). When selecting appropriate in-depth cases, it is important to have criteria (Yin, 2003). Therefore, for this study, the criteria used to select the in-depth cases were: 1) the CRSDS was considered successful as indicated by having won an international or national award (i.e., the Federation of Canadian Municipalities / CH2M HILL Sustainable

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[2] Note: This seemingly repeated item is the same in the original.

Community Award in Planning, the Dubai International Award for Best Practices, or the International Sustainable Urban Systems Design award); 2) the CRSDS was adopted long enough ago for there to be a history of implementation (i.e., adopted in 2005 or before); 3) progress on the collaborative strategic plan outcomes had been documented (as indicated by at least two implementation reports), and sufficient information existed and was accessible. The resulting in-depth cases are: Montreal's collective sustainable development strategy; Hamilton's Vision 2020; Greater Vancouver's cities[PLUS]; and Whistler 2020. These four regions vary significantly thus enabling greater generalization of the results.

Montreal, located in the province of Quebec, has a population of 1,620,693, according to Statistics Canada's 2006 census. In 2005, the City of Montreal adopted its first 5-year CRSDS which is called *Montreal's First Strategic Plan for Sustainable Development*, in English, and *Premier plan stratégique de développement durable de la collectivité montréalaise*, in French. The most recent update is for 2010-2015. Hamilton is situated in Southern Ontario, with a population of 504,559 people, according to the 2006 census. The core of its economy was traditionally based on steel manufacturing. They have the oldest CRSDS in Canada, having adopted *Vision 2020* in 1992 as a 30-year plan. The plan was renewed on two occasions, in 1998 and in 2003. The region of Greater Vancouver had a population of about 2.1 million in 2006, and is located in the lower mainland of British Columbia. The regional government, which now goes by the name of Metro Vancouver (and formerly went by the name Greater Vancouver Regional District or GVRD), is a federation of 22 municipalities and one electoral area. Greater Vancouver's 100-year plan was completed in 2003 and is called *A Sustainable Urban System: The Long-term Plan for Greater Vancouver.* The collaborative initiative was coined cities[PLUS], which is an acronym for cities Planning for Long-term Urban Sustainability. Finally, Whistler, located on the west coast of Canada, had a 2006 population of over 9,200 permanent residents, 2,300 seasonal workers, 11,500 second home owners, and a daily average of 28,280 tourists. The largest employer is Intrawest, which owns Whistler Blackcomb (the ski hills) as well as significant commercial real estate. They adopted *Whistler 2020* in 2004 as a 60-year vision.

3.1 Data Collection for In-Depth Cases
Data collection focused on implementation structure and plan outcomes, while noting elements of CRSDS formulation and other contextual features. Information about the implementation structure and its relationship to plan outcomes was collected through interviews. Interviews were conducted with key informants ensuring coverage of the implementation over time. Interviewees included people representing partner organizations; they were drawn from a range of organizational types (such as large businesses, small businesses, business associations, NGOs, municipal departments, universities, etc). There were 18 interviews regarding Whistler, 12 regarding Montreal, 16 regarding Hamilton, and 17 regarding Vancouver, for a total of 63 interviews. In-person interviews were conducted with 35 people, and phone interviews with 28. In each region, over 50% of the interviews were conducted in person. The duration of the interviews ranged from 30 minutes to two hours, with the average being around 45 minutes. The following table details the interviews by organizational type:

Table 1: Interviews per Case

Organizational Type	Montreal	Hamilton	Greater Vancouver	Whistler
Government (local or regional)	2	5	4	6
Government (provincial or federal)	1	0	0	1

Large corporation	2	2	3	2
Small- or medium-sized enterprise	0	1	3	5
Business association	1	1	2	1
Non-profit / Non-governmental organization	4	5	3	3
University	2	2	2	0
Total Interviews	12	16	17	18

Additional documents were collected throughout these interviews to triangulate data about the collaborative structures. These included internal documents (project plans, corporate sustainability strategy, job descriptions, etc.) and external sources of information (association newsletters and other publications focusing on these cases).

Information about plan outcomes and their relative improvement were based on reports produced by each region. Two specific issues – greenhouse gas (GHG) emissions and air quality – were emphasized. These two issues were chosen because they were regionally monitored in all four in-depth cases using a relatively standardized quantitative methodology. This made them comparable across cases. In addition, both topics require multiple organizations from different sectors to engage if plan outcomes are to be achieved.

3.2 Data Analysis for In-depth Cases
Data analysis was done simultaneously with data collection, reduction, display and narrative report writing (Eisenhardt, 1989). All interviews were transcribed in the language of the interview (English or French) and then coded by implementation structure feature (based on the features outlined in Clarke, 2010) and plan outcome (GHG emissions reductions and air quality). Comments about the relationship between a structural feature and the achievement of a plan outcome were also noted. For each case, a large table with rows representing relevant structural features was filled out with qualitative data, thus creating "word tables that display data from the individual cases according to some uniform framework" (Yin, 2003p. 134).

Additional online data was collected if needed to fill in any gaps. Then a cross-case comparison was conducted between regions based on the quantitative results and trends. Following Hardy et al. (2003), each region was rated based on its progress towards its goal on the two plan outcomes (i.e., less GHG emissions and improved air quality). Finally, triangulating the information about the structural features, the plan outcome trends, and the interviewees' comments about the relationship between structure and outcomes, the key features for each plan outcome were determined. The two were then compared to come up with a final set of five evaluation criteria.

4. Results

4.1. Implementation Structures in the Four Cases
Each of the four cases has a different implementation structure. Montreal, for example, is the only one with a partners committee made up of all the partner organizations. Whistler is the only one with issue-based task forces that decide on the implementation actions on an annual basis. Hamilton has formal issue-based multi-organizational entities that were created to implement one of the topic areas of the larger collaborative strategy. Greater Vancouver has no ongoing formal collaborative structure, but instead depends on the initial partners to implement within their own organizations. With each of these implementation structures come different engagement mechanisms, and decision-making, communication and

monitoring processes. Table 2 provides a summary of each implementation structure in each case.

Table 2: Summary of the Implementation Structure in each of the Four Cases

Level	Montreal	Hamilton	Greater Vancouver	Whistler
Full Partnership Level (i.e., involving all partner organizations)	The Partners Committee (made up of 180 partners) and the Liaison Committee (a much smaller steering committee); staff in the three lead organizations support collaborative communication and monitoring; new partners are welcome	No entity (during implementation); from 1994 – 1999 informal interactions on the full CRSDS implementation at an annual fair	No activity at this level (during implementation)	Informal interactions between lead organizations; 54 partners formally committed to supporting the CRSDS
Joint Project(s) Level (i.e., involving a sub-set of the total numbers of partners on a specific issue)	Informal interactions through joint campaigns and joint committees on specific issues	Formal issue-based multi-organizational entities created, such as Clean Air Hamilton	Informal interactions and informal communication between partners through issue-based sessions such as the networking breakfasts	15 task forces (with 140 members) make decisions on implementation actions and monitor progress; staff dedicated to Whistler 2020 support the task forces, compile reports & manage communication
Individual Partners (i.e., individual partners implementing within their own organizations)	Each of the 180 partner organizations decides which collaborative goals it will implement and how it will implement them	Only the government is responsible for implementation, decision-making, communication, and monitoring	Partner organizations make their own decisions on what implementation actions to take and they monitor their own progress	75 Implementing Organizations accept implementation actions from the task forces and provide content for the collaborative progress report; 31businesses implementing their own action plan, and monitoring their individual results

4.2 Greenhouse Gas (GHG) Emissions

Carbon dioxide, methane, nitrous oxide and three groups of fluorinated gases (sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons) are the major greenhouse gases (May & Caron, 2009). These greenhouse gas emissions are commonly measured in terms of carbon dioxide equivalents, or CO_2e. This measurement system allows comparisons between total amounts of different greenhouse gas emissions.

Canadian municipalities have direct or indirect control over half of Canadian greenhouse gas emissions (Robinson & Gore, 2005). Collaborative regional sustainable development strategic plans include collaborative goals for region-wide GHG reductions. For each of the four cases, both the total region-wide GHG emissions and the portion which is the government's corporate GHG emissions are considered. While the term 'corporate' may seem unusual for a public sector organization, this is the term used by Canadian

municipalities to distinguish their government-operated initiatives (such as buildings, landfills and waste management) from territory-wide initiatives.

Annex 1 shows the total GHG emissions (region-wide), the total GHG emissions per capita, and the municipal government's corporate GHG emissions from each of the four cases. For the purpose of analysing whether the region is moving towards its plan outcome, what is important is not the comparison, but rather the trend within each region. In all the regions, corporate-level initiatives have been leading to a reduction in GHG emissions from the local or regional government's operations, but this alone does not ensure region-wide reductions in GHG emissions. The collaborative goals are to achieve region-wide reductions in GHG emissions (with the exception of Whistler2020 which aims to manage GHG emissions). Both Whistler and Greater Vancouver have been moving towards their plan outcomes because their trends are leading towards their collaborative goals.

Further analysis was conducted on each case to determine what structural features are related to the positive achievements. A summary of the key features for achieving GHG emission reductions in each case is provided in Table 3.

Table 3: Key Structural Features Needed in each of the Four Cases for Achieving GHG Plan Outcomes

	Montreal	Hamilton	Greater Vancouver	Whistler
Key Structural Features Needed for Achieving Plan Outcomes	Major emitters need to be involved; mechanism needed to engage these major emitters; supportive provincial policy	Monitoring progress; commitment to action by more organizations than just the government needed; major emitters need to be involved	Major emitters involved; monitoring; networking between key organizations; supportive provincial policy	Mechanism to identify key emitters and allocate actions to them; annual monitoring; short-term timeframe ensures implementation focus; a critical mass of major emitters involved; supportive provincial policy

4.3 Air Quality
The second plan outcome considered in this study is air quality. There are a number of pollutants which can reduce the quality of air in a region. The provincial governments are responsible for the monitoring and reporting of air quality and for enforcing point source permits. This is sometimes delegated to larger municipalities, such as in Montreal and Vancouver. Regions may also address non-permit emissions from sources such as transportation and local activities (e.g., wood burning). The Air Quality Index (AQI) provides a measure of the pollutants combined. If the AQI is above 50, the air quality for that day is considered poor. The AQI is a good indicator of air quality in a region, and is standardized across Canada. The air quality collaborative goals and resulting AQI outcomes in each of the four cases were considered in this study.

Annex 2 details the number of poor air quality days of the four regions. As with GHG emissions, for the purpose of this study, it is not the comparisons which are relevant, but rather the trends towards achieving the collaborative goal. Montreal and Whistler are the only regions to show 'high' progress towards their plan outcomes on air quality; while the other two regions showed 'medium' progress, with inconclusive trends and mixed results (depending on pollutant) and indications that they are not on track to meet their goals. While considerable isomorphism exists between local (and regional) government regulatory (and

programmatic) approaches to air quality, there are differences in the structures that regions use to implement the CRSDS and achieve their collaborative goals. As point-source pollution is regulated, the major emitters in each region are already targeted through emission permits. The challenge for further reductions is to create behavioural changes by individuals, such as stopping idling or switching to non-wood burning heat sources. Further reductions can also be made through voluntary initiatives by industry.

Based on further analysis of each case, a summary of the key features for achieving GHG emission reductions is provided in Table 4.

Table 4: Key Structural Features Needed in each of the Four Cases for Achieving Air Quality Plan Outcomes

	Montreal	Hamilton	Greater Vancouver	Whistler
Key Structural Features Needed for Achieving Plan Outcomes	Measurable goals; engages numerous partners; creates efficiencies through joint initiatives; allows for sharing of information between partners	Multi-organizational entity created to tackle this topic; numerous partners involved; major emitters and researchers involved; bi-annual reporting; updating of actions through ongoing adjustments and of strategy also a renewal process; focus on both organizations and individuals	Lead organization with regulatory levers; ongoing monitoring and bi-annual reporting; programs for organizations and researchers; networking events; needs tie to larger CRSDS	Task force sets annual actions; joint project for collective management plan

4.4 Cross-Case Comparison on both Plan Outcomes

As part of the analysis of the plan outcomes for both GHG emissions and air quality goals, the key features for successful CRSDS implementation were considered. Table 5 presents the results in relation to the Clarke (2010a) structural sub-components (i.e., features).

Table 5: Key Structural Features for Achieving Plan Outcomes on GHG Emissions and Air Quality

Component	Structural Feature	GHG Emissions	Air Quality
Partners	Number of Partners	For reaching a critical mass	For reaching a critical mass
	Key Partners	For inclusion of major emitters and researchers	For inclusion of major emitters, government and researchers
	Engagement	For ensuring more organizations than just the government are involved	For involvement of organizations through the voluntary approach
Implementation Forms	Full Partnership Level	For a mechanism to identify missing implementing organizations and to enable networking	For networking
	Joint Project(s) Level	Formal - for setting short-term actions and ensuring major emitters are involved; and informal interactions - for sharing success stories and coordinate initiates	For setting and taking short-term actions; for sharing resources and creating efficiencies between partners; and for sharing success stories and coordinate initiates
	Individual Partner(s) Level	For taking action – particularly major emitters and other relevant implementing organizations	For taking actions
Processes	Decision-making	For deciding to take and continue taking actions	For tying to larger CRSDS
	Communication & Information	For ensuring networking and that they reach a critical mass	For inspiring partners to engage even if they are a 'minor' emitter; for

		sharing information between partners; and for reaching individuals	
	Monitoring & Evaluation	For monitoring progress and allowing adjustments	For monitoring progress and allowing adjustments
Context	Strategic Plan Formulation Process	For ensuring issues are included	For ensuring issues are included and that there are measurable goals
	Situational Considerations	For considering impacts of top industries, access to research expertise, and legislation	For considering impacts of top industries, access to research expertise, and regulatory options

5. Discussion

5.1 Key Features

This study identifies, for CRSDSs, the key structural features which determine effectiveness of the partnership for achieving plan outcomes, a topic which Biermann, Mol and Glasbergen (2007) identified as understudied. As can be seen from Table 5, the inclusion of key partners and the presence and nature of monitoring and evaluation processes were identified as affecting plan outcomes in this study (for both GHG emissions and air quality). This finding reflects the existing literature. Gray (1985) has long stated that the involvement of key partners, reflecting complexity of issue, increases the likelihood of achieving collaborative goals. Also, a number of authors have commented on the importance of monitoring the strategic plan implementation (Huxham & Macdonald, 1992), and conducting a strategy review and ongoing corrective actions will increase the achievement of collaborative goals (e.g., Brews & Hunt, 1999; Daft & Macintosh, 1984; Rein & Stott, 2009). It is also generally understood that sharing resources to take advantage of the strengths of different partners will increase the achievement of collaborative goals (e.g., Huxham & Macdonald, 1992; Seitanidi, 2010).

The empirical findings from this study also show that the number of partners and their engagement, the forms at the full partnership, joint project(s), and individual partner levels, and presence and nature of communication and information, and the decision-making processes are all also relevant for both GHG emissions and air quality plan outcomes. These results highlight the theoretical contribution of this study, as well as provide further understanding of the relationships between structure and outcomes. Specifically, the number of partners and their engagement indicates that, not only do the key partners need to be engaged, but in order to reach a critical mass on voluntary efforts to reduce GHG emissions and improve air quality, sometimes a large number of 'minor emitters' also need to be engaged. In terms of the forms, the collaborative decision-making and the networking can happen at either the full-partnership level and/or the joint project(s) level, while implementation actions can occur at the joint project(s) and/or individual partner levels. The decision-making and communication and information processes ensure ongoing actions that are tied to the larger CRSDS, strategic renewal, networking, and reaching the critical mass. These structural features are intertwined as part of the larger implementation structure of the initiative.

In terms of context, its importance is well known (e.g., Brinkerhoff, 1999; Rein & Stott, 2009). Contextual questions are also relevant to the features; for example, the type of economy changes the pollution levels and, therefore, priority issues. Other demographic factors, such as universities in the region, make a difference to the types of partners and the extent of research expertise available locally as part of implementation at the joint project or

full partnership levels (as can also been seen in Clarke & Fuller, 2011). In addition, provincial legislation can help a region reach its plan outcomes (as in with BC's efforts for GHG reduction), or hinder it (as with Metro Vancouver's declined request to issue air quality emission permits at higher standards).

5.2 Evaluation Criteria
Further building on these findings and assuming the main intention of the CRSDS is to achieve plan outcomes, and not other outcomes types, potential criteria for evaluating a CRSDS's implementation structure would be that it:

1. engages key organizations from different sectors, and/or has a mechanism to identify them and add them;
2. has collaborative form(s) (i.e. arrangements) to oversee the implementation and identify issue-based short-term actions, and also allows for networking between organizations;
3. has individual organizations implementing within their own organizations;
4. has a communication system that exists to further networking and to reach citizens; and
5. has a monitoring system that exists, including both state and action indicators, which also allows for adjustments to be made to the implementation actions, and renewal to be made to the collaborative strategic plan.

Table 6 details how these criteria were developed from the results of this study.

Table 6: Criteria for Evaluating a CRSDS Implementation Structure and Related Structural Features

Criteria	Structural Features
Key organizations engaged	Partners – Number of partners; key partners; engagement mechanism
Collaborative oversight entity exists	Implementation forms – full partnership level and/or joint project(s) level; and processes - decision-making
Individual organizations implement	Implementation form – individual partner(s) level
Communication system exists	Processes – communication and information
Monitoring and renewal systems exist	Processes – monitoring and evaluation; decision-making

The Local Agenda 21 criteria provide some of these criteria. In order to qualify as Local Agenda 21, a CRSDS must have a roundtable, stakeholder group, or equivalent multi-sectoral community group to oversee the process; it must have indicators to monitor the process; and it must establish a monitoring and reporting framework (ICLEI, 2002a). The plan outcome findings from this study show that moving towards collaborative goals requires more than just collaborative oversight, indicators, and monitoring. Additionally, sufficient and appropriate partners must be engaged to reach the critical mass necessary for implementing actions relating to particular issue areas (e.g., these must include the major emitters for the voluntary GHG issue). For this to occur, as noted in the first criterion, the implementation structure requires a mechanism to identify and add additional partners. For example, in Whistler 2020, the task forces identify needed actions and identify the appropriate implementing organizations. The secretariat then invites these organizations to take on the actions. Generally, the likely implementing organization is invited to be a part of the task force; either to begin with or in subsequent years.

The second criterion augments the need for long-term goals (ICLEI, 2002a), with the need for shorter-term actions. Greater Vancouver's 100-year CRSDS has long term goals, but it is difficult to implement. Montreal's 5-year CRSDS, on the other hand, is much easier for partners to pursue. Whistler2020 has a mix of long-term goals and short-term actions, thus enabling vision and implementation. Identifying short-term actions is achieved through the initial strategic plan (if it has a short time horizon) or through a companion

implementation/action plan. For Montreal, the initial 5-year strategic plan is an action plan. For Whistler, annual actions are set to move towards the longer-term strategic goals.

Also, in the second criteria is a note about the importance of networking. Learning from other partners' success stories, enabling joint initiatives, and building new relationships were among the reasons that interviewees mentioned networking as important for achieving plan outcomes. The networking can be formal, such as through Whister's annual task forces, or informal, such as through Greater Vancouver's monthly networking breakfasts. The fourth criterion, about the communication system, also encourages networking. For example, Montreal produces a regular e-bulletin, and most of the cases have an active website.

The third criterion, having individual partners implement within their own organizations, ensures that sustainable development is tackled across the territory and is not limited to the topics within the local government's jurisdiction. Also, this approach leverages more implementation efforts. All four cases achieve this in different ways. Montreal has partners commit to actions selected from the plan on an annual basis, while Hamilton created issue-based multi-organizational entities, each of which creates its own action plan and defines partner roles. Whistler has issue-based task forces to assign actions to implementation organizations, and also a separate system to support partners in developing individual action plans. Greater Vancouver, the most informal approach, relies on partners to create their own actions.

The fifth criterion is mentioned by LA21 (ICLEI, 2002a), including the importance of indicators. Local sustainability indicators are an area of ongoing research (Shen et al., 2011). All four of the regions produce regular sustainability reports, though Greater Vancouver's is not specifically tied to the CRSDS. Beyond indicators and reporting, this study reinforces the importance of allowing for adjustments to the implementation actions on a regular basis, and a systematic renewal of the larger vision (as documented in the CRSDS). In Whistler, Montreal, and Hamilton, the strategy renewal has been on an approximately 5-year cycle.

These five criteria are similar to the three criteria for the Local Agenda 21 (ICLEI, 2002a), but are slightly more inclusive as they allow for informal oversight. They also highlight the importance of networking for achieving plan outcomes, and the importance of many organizations engaging in the implementation. There already exist detailed guides for practitioners on developing cross-sector collaborations; and these typically recognize the need to engage new members as the collaboration evolves, to encourage changes in the organizational-level policies and practices, and to put in place decision-making and monitoring processes (see, Himmelman, 1996, for example). These guides often place less emphasis on networking (and therefore the importance of the structure creating networking opportunities), but this emerged in this study as of fundamental importance.

These five criteria are interrelated. Without an oversight body, it is difficult to do a systematic renewal of the CRSDS. Without engaging organizations from different sectors, it is impossible to have them implement the CRSDS in their own organizations. The monitoring and communication systems can also be complementary. Ultimately, the collaborative structure for implementing a CRSDS will require a configuration of all these structural features. If the goal is to achieve the plan outcomes, it is not sufficient to meet only one or two of these criteria.

6. Conclusion

For collaboration researchers, one contribution of this study is that it highlights that those features, which are 'success factors' for the formation and formulation stages, are not necessarily the same as for the implementation stage. While Gray (1985) considers different facilitating conditions at different stages, she does not explicitly articulate the relevant outcome types for the success factors identified. As noted in Clarke and Fuller (2011), there are different outcome types, including plan-centric and process-centric outcomes. Most collaboration articles consider success factors of collaborations with an implicit focus on the formation stage and on process outcomes; yet, while these are important, for some partners, achieving plan outcomes are more important. This study shows structural features for achieving plan outcomes.

As there is a wide diversity of partnership types, and they have been created for different purposes (from disseminating information to capacity building to strategy implementation), it is difficult to generalize about implementation and outcomes (Biermann et al., 2007). Still, this study furthers understanding of the cross-sector partnership implementation and outcomes by showing that the structure does matter for achieving outcomes, and that choices regarding some features are more important for plan outcomes. The study also offers five evaluation criteria, furthering the criteria used by LA21 (ICLEI, 2002a) to include additional considerations.

In terms of future research, there is still much to be learned about collaborative strategy implementation. Specifically building off this study, there is a question of whether the findings can be generalized beyond sustainable development to other cross-sector social partnerships. Recently, more literature on tri-sector collaborations involving a large number of partners has appeared (For example, Babiak & Thibault, 2009; Geddes, 2008; Huxham & Vangen, 2005). The diversity of empirical cases - from sports partnerships (Babiak & Thibault, 2009) to the Global Compact and type 2 partnerships from the World Summit on Sustainable Development (Biermann et al., 2007), to local and regional development (i.e., economic development or poverty reduction partnerships) (Geddes, 2008), to an empowering communities partnership (Huxham & Vangen, 2005) - show that collaborations with a large number of partners are not unique to CRSDS. Thus, the findings here may well be relevant for these kinds of cross-sector collaborations generally.

Other future research suggestions include focusing more on the interactions between partners. Bringing an Actor Network Theory lens would enable a different perspective on the relationship between structure and outcomes, and on the importance of networking. Perhaps modelling software might be used. Also, more understanding is needed on the multi-level implementation, perhaps drawing on insights from organizational project management literature, as it relates to the implementation of a collaborative strategy for a social purpose.

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Table 7: Comparison of Four Regions' GHG Emissions and Trends

	Whistler	Montreal	Hamilton	Greater Vancouver
Year CRSDS was Adopted	2004	2005	1992	2003
Total Region-wide GHG Emissions	Year CO_2e 2001 0.15 Mt * 2007 0.13 Mt	Year CO_2e 1999-2002 11.88 Mt 2003-2006 12.49 Mt (Emissions average/year)	Year CO_2e 1994 6.260 Mt 1998 6.599 Mt 2005 7.697 Mt	Year CO_2e 2000 ~ 17.5 Mt 2005 15.6 Mt 2007 11.466 Mt
Total GHG Emissions / Capita	Year CO_2e 2007 9.44 t**	Year CO_2e 2003-2006 7.2 t (Emissions average/year)	Year CO_2e 2005 15.25 t	Year CO_2e 1999 7.17 t 2007 5.42 t
Corporate (Municipal or Regional) GHG Emissions	Year CO_2e 2000 2,249 t 2006 2,331 t 2007 expected reduction	Year CO_2e 2002 196,000 t 2005 185,000 t	Year CO_2e 1994 18,503 t 1998 17,800 t 2005 16,569 t	Year CO_2e 1997 300,000 t
Trend	Decreasing region-wide; was increasing corporation-wide until 2006, and then started decreasing	Increasing region-wide; and decreasing corporation-wide	Increasing region-wide; and decreasing corporation-wide (based on the 1999 inventory); in 2007 – companies reduced emissions by 10% since 1997	Decreasing region-wide and probably decreasing corporation-wide

   * Mt   Megatonnes   t   Tonnes

Table 8: Comparison of Four Regions' Air Quality Emissions and Trends

	Whistler	Montreal	Hamilton	Greater Vancouver
Year CRSDS was Adopted	2004	2005	1992	2003
Total # of Days of Air Quality Above 50	Year # days 2001 0 2002 0 2003 0 2004 0 Above 26 (Fair) 2004 134 hrs 2005 27 hrs 2006 122 hrs 2007 109 hrs	Year # days 2002 48 2003 64 2004 75 2005 66 2006 47 2007 44	Year # days 2001 12 2002 13 2003 15 2004 15 2005 45 2006 11 2007 31 2008 13	Year # days 2001 1 2002 0 2003 0 2004 1 2005 4 2006 8 2007 0
Trend	"Results for 2007 lead to a decrease from 2006 and a decrease over the three-year rolling average."	It peaked in 2004 and has been decreasing since.	Some pollutants have decreased (such as sulphur dioxide), some have remained constant, and ozone has increased. Variation is due to weather (hot days). Results seem to have peaked in 2005 and are decreasing since.	NOx emissions reduced by 40% between 1990 and 2005; sulphur dioxides, nitrogen dioxides, and particulate matter have reduced; and ozone has increased. The 2005 spike is due to a fire, and the 2006 spike due to ozone and hot weather. The trend seems to be increasing pollution.

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[3] For more information on the tables in Annex 1 and 2, including the sources of data and a detailed explanation of the analysis, see Clarke, A. (2010b), *Implementing Regional Sustainable Development Strategies: Exploring Structure and Outcomes in Cross-Sector Collaborations*, doctoral dissertation, McGill University, Montreal.