

Rural Sustainability Plans in Canada: An analysis of structure, content and influence

1. Introduction

Following the international movement toward sustainable development (Brundtland, 1987), the Rio Declaration, Rio+20, and the Millennium Development Goals, a broad range of policy frameworks and practices have emerged to support moving from the concept of sustainability to action and change at the local and practical level. In turn, planning has become a key political and procedural element of sustainability, as it serves as a primary catalyst for both the management of growth, and the incorporation of long-term, intergenerational equity considerations (Baer, 1997). In essence, sustainability planning is an action that may not only define “good planning” (McDonald, 1996) but also serve to clarify and operationalize sustainability through a “collaborative, integrated approach to community planning that steers a community toward the implementation of local and global sustainability goals...” (Marbek Resource Consultants, 2008; p. 2).

Since the 1960s, there has been an increasing emphasis on the integration of policy, programming, and management across local systems (Brundtland, 1987). At the same time, policy makers at different levels have recognized that the viability, resilience, and very existence of rural communities (unlike larger cities) is increasingly subject to a complex set of external drivers (such as global market forces and demographic shifts) that are in many ways immune to domestic policy reforms and programming (Sayer and Campbell, 2004; Hallstrom et al., 2012b). As research from the European Union (Copus et al., 2011), the United States (Flora and Flora, 2013), and Canada (Douglas, 2010; Hallstrom et al., 2016) notes, rural communities in developed states commonly face core challenges of economic globalization, the “rural exodus” (tempered with counter-urbanization), shifts toward market and competition-based approaches to social service provision, policy and governance challenges, environmental considerations (such as both local and global effects of climate change) and balancing macro-level policy goals with more localized and place-specific priorities.

Although rural communities are typically characterized by their diversity (Flora and Flora, 2013), there are some commonalities that can yield both academic and practical benefits: (1) given their (typically smaller) size, relatively modest initiatives and interventions can produce significant effects; (2) given their enhanced vulnerability to both internal and external disruptions, rural communities may serve as an “early warning system” or provide some indications of how different sustainability challenges (whether environment, social or economic) play out, and how different planning approaches and policy tools may work; (3) although rural communities can present a complex array of spatial, social, political, and ecological factors, they present an opportunity in terms of both scope and scale for meaningful engagement by citizens in planning, in public policy, in local and regional politics, and in economic and community development initiatives.

While not “new” challenges for rural areas, the past ten years have seen the prevalence, severity, and public acknowledgement of these issues grow substantially in Canada, even as federal supports (such as the Rural and Cooperatives Secretariat) have disappeared. As a result, many communities in Canada have now completed a sustainability planning process as part of what was intended to be a structured, linear process of problem-identification, problem-solving, and policy design. What has emerged, however, is a wide range of approaches, toolkits,

strategies, and content from across the country that differ along regional, population, economic, and political lines. No single solution or model emerged from this shift toward sustainability planning, and the shift to implementation, if any, is neither consistent, rational, nor linear. Furthermore, little is known about how the context and complexity of rural environments impact the definition, meaning, operationalization, implementation, and assessment of these plans (Hallstrom et al., 2012b).

As a response to these gaps, this project examines how these endogenous and exogenous factors have worked together to shape the form, model, and content of rural municipal sustainability plans in Canada. Drawing from access to the full-text of over 1200 sustainability-type plans (see for example Bassett and Shandas, 2010; Norton, 2005) (housed at the Canadian Sustainability Plan Inventory) we investigate the content, form, and priorities of rural sustainability plans in order to:

Characterize the scope and model of rural Canadian sustainability planning:

- What form(s) of sustainability plans are typical across rural Canada, in terms of age, length, author, and type?
- What are the emphases of the plans with respect to the five pillars of sustainability (economic, environmental, social, cultural, and governance)?

Assess the influence of municipal attributes on sustainability planning form and priorities:

- What community characteristics affect the form of sustainability plans? In other words, what community characteristics predict the plan's length, age, authorship, and type?
- How does the form of sustainability plans and local community characteristics combine to affect sustainability emphases?

As Guyadeen and Seasons (2016) note, plan evaluation is a well-acknowledged element of the planning cannon, but such evaluations tend to focus upon different facets of quality and quality assurance (ie, what constitutes a “good” plan and for what ends?). What is, however, less commonly asked extends beyond the process and goals of planning as an activity undertaken by planners, consultants, community members, and local business actors. Specifically, we have little knowledge of the specific content and form of sustainability plans in Canada, the potentially deterministic relationships between planning form, content, and community characteristics (such as size and location) and what (and how) exogenous variables might predict variation in the content of plans, including sustainability priorities, frameworks or models, and toolkits.

1.1.Sustainability Planning

There is a broad range of literature that speaks to different elements and foci for sustainability as a planning goal and process. While many authors frame the concept of sustainability (or sustainable development) within the conventional parameters and pillars of the Brundtland Report (Beatley and Manning, 1997), those parameters then face significant ambiguity as they become applied and operationalized at the local and/or regional level. In turn, not only is place a key consideration for sustainability planning (eg. urban versus rural versus remote versus metropolitan), but the frameworks and goals utilized for those places may also vary significantly. This increasingly places the substantive but long-standing priorities and

characteristics of infrastructure, economic, and population growth (McDonald, 1996) within broader procedural questions of community development and capacity (Flora and Flora, 2013; Beckley et al., 2008), resilience (Berke and Manta-Conroy, 2000), social learning (Bagheri and Hjorth, 2007), citizen engagement and participation (von Korff et al., 2012), and increasingly for small rural and remote communities, this may extend to critical questions of community survival itself. As Roseland (2012) notes, such challenges require a “different kind of development. It must be a proactive strategy to develop sustainability” (p. 7). This is perhaps consistent with the longer trajectory of urban and municipal planning (see for example Chapin, 2012) that has undertaken first to model growth, but more recently has started to acknowledge and (in some cases) even integrate a triple or “quadruple bottom line” that may be addressed through innovative and adaptive planning frameworks (Yigitcanlar and Kamruzzaman, 2015). Working within these frameworks, planners and researchers alike have noted the importance of participation, local capacity (resources and skills), vision, planning mandates and both political and community support as core elements of successful planning.

A common thread throughout both sustainability planning, and urban/metropolitan planning more broadly, is the need for integration. As Wheeler (2000) points out, the holistic elements of Victorian London’s Metropolitan Board of Works, or Howard’s Garden Cities (eg. Letchworth) all reflect Mumford’s assertion that urban challenges (transportation, waste, etc.) cannot be addressed in isolation, but rather require “bearing constantly in mind the general situation from which they have been abstracted” (Wheeler, 2000; p. 135). This stands, however, in stark contrast to the bureaucratic reality of municipal policy and planning in many countries, where factors such as governance design, electoral law, party politics, bureaucratic rationality and infrastructural path dependencies have reinforced a “siloes” yet technically expert model of urban and community development (Roseland, 2012). In turn, and as is common in many fields that seek to promote and understand integration, despite calls for more holistic and comprehensive approaches to research, policy and practice, both research and applied work often remain highly compartmentalized (Bunch et al., 2014).

Sustainability planning must, therefore, respond not only to the substantive and procedural criteria of sustainable development, but do so in a way that translates local contexts and relationships into meaningful intersections with, and across, the social, economic, environmental, cultural and governance pillars of sustainability. It is an attempt to create a community that “resembles a living system in which human, natural, and economic elements are interdependent and draw strength from each other” (Roseland, 2012; p. 27). For larger urban areas in the developed world, this requires a reconciliation of the broader consumption patterns and trajectories of citizens (Næss, 2001). For those living in rural and ex-urban spaces, the well-identified challenges of distance and population density not only compound the consumptive patterns of developed states more generally, but (ironically) are also subject to the consumptive trajectories of cities as well. As rural spaces lose people and revenues to cities, services, businesses, and resources often follow, reinforcing the reliance of rural citizens on (typically individual) transportation to access resources no longer available in their local environment. Particularly in North America, ready access to cheap energy has facilitated not only the metropolitan design and sustainability paradigm, but has also shaped how rural communities frame sustainability as well.

1.2. Rural Sustainability Planning in Canada

Although it has long been argued that sustainability should be considered as an integral part of the planning process (McDonald, 1996; Hanna, 2005; van Fraassen, 2012; Kenny and Meadowcroft, 1999), until the 1990s, Canadian community planners did not commonly consider environmental issues and tended instead to focus upon maximizing short-term economic development of communities (Roseland, 2000). However, as socio-economic, political, demographic, and cultural factors began to generate more pronounced (and typically negative) effects in Canada and abroad throughout the 1990s, the question of whether or not rural communities can be environmentally, socially, economically, or culturally sustainable in Canada not only rose in priority, but was increasingly acknowledged as cutting across many policy domains (DuPuis and Vandergeest, 1996; Bosshard, 2000; Reimer, 2006; Kulig et al., 2008). Since 2005 and the announcement of a Canadian federal strategy supporting integrated and sustainable development in Canada's cities and communities, the broader policy goal has been to "accelerate the shift in local planning and decision-making toward a more long-term, coherent and participatory approach to achieve sustainable communities" (PMO, 2005; 4). In turn, many municipalities in Canada have made significant investments in formulating and promoting comprehensive sustainable community plans by emphasizing public awareness, education, social learning, participation, equity, knowledge transfer, and mutual learning. This is broadly consistent with a shift toward planning processes that are "a collaborative, integrated approach to community planning that steers a community toward the implementation of local and global sustainability goals, using a long-term perspective in an adaptive governance framework" (Marbek Resource Consultants, 2008; p. 2).

Much of this shift can be attributed to the creation and promotion of a Federal Gas Tax Fund (GTF) as a way to link municipal infrastructure spending (worth \$19 billion CDN to date, and providing an on-going \$2 billion CDN per annum) with planning, and sustainability planning specifically. While every province has taken a different approach toward how municipal planning should both integrate sustainability considerations and be linked to federal resources, at least in principle there has been a shift toward a more comprehensive planning program for municipalities where the term "integrated refers to the practice of bringing diverse, normally separate, concerns and planning processes together, e.g., transportation, land use, environment, housing, waste, water, energy, community health, recreation, culture, municipal finance, and others" (Marbek Resource Consultants, 2008, p. 33).

For many smaller communities, linking sustainability planning to financial resources proved a powerful incentive, with some provinces (such as Alberta and Newfoundland and Labrador) formally requiring that integrated community sustainability plans (ICSPs) be written and filed in order to qualify for Gas Tax Funding. Although not all provinces adopted this approach, over 25% (1000+) of smaller Canadian municipalities created some form or variant of a sustainability plan between 2006 and 2012, and several studies have emerged to examine local, regional, and rural sustainability planning as a result (see for example Hallstrom et al., 2016; Van Aasche et al., 2016; Roseland, 2012; Douglas, 2010; Gismondi et al., 2016).

Within this literature, the general emphasis has been on: (1) the effects of plan-making; (2) the characteristics and determinants of plan quality and/or implementation (such as partnerships, regional collaboration, planning method, and participation); and (3) the effects of place-specific actors, organizations, and contexts on planning processes and outcomes (Berke et al., 2006; Hallstrom et al., 2016; Guyadeen and Seasons, 2016). At the local level, citizen participation has

received enormous attention (Day, 1997; Hanna, 2005; Healey, 2006; Koontz, 2006; Gasparatos et al., 2008; Masuda et al., 2008; Laurian and Shaw, 2009; Markey et al., 2010). Van Fraassen (2012), for example, has explored the importance of trust among citizens, stakeholders, and the municipality. Similarly, Calder and Beckie (2013) have described how communication, networking strategies, stakeholder participation, and shared decision-making process are necessary conditions for the successful implementation of integrated community sustainability plans.

Other scholars have explored the scope, challenges, and opportunities for innovation through more integrated and longer-term planning. For example, Hanna (2005) illustrated the importance of local planning in stimulating the principles of sustainable development, as well as demonstrating how sustainable planning strategies can be used to adapt to the changes occurring in natural resource-based communities (e.g., decreasing income levels in timber and fishing industries). Similarly, Day et al. (2003) and MacKendrick and Parkins (2004) explored sustainability strategies within “Collaborative Planning,” in which government staff, stakeholders from public and private organizations, nongovernmental organizations, and the general public were included for sharing and discussing ideas. This educative and adaptive negotiation process is a key determinant of success for the local planning process.

Despite this shift in Canada, and in many other parts of the world, there are some knowledge gaps. As Laurian et al. (2004) and Berke et al. (2006) have noted, the actual implementation of plans has generally been ignored or marginalized in the field of planning. While Hull (2011) and others (Chess, 2012) provided some redress to this issue, there has also been relatively little attention paid to assessing the different frameworks and tools used to support local sustainability planning in rural areas. Similarly, while the content of other forms of planning has been mapped, analyzed, and critiqued (Basset and Shandas, 2010; Jones et al., 2010), there has been no attempt toward mapping and comparing both sustainability plans and their content across regional, population, and federal/provincial priorities. In particular, while it is commonly assumed that local contexts, priorities, and engagement will drive the content of sustainability plans and planning, we are interested in furthering our understanding of if, and how, broader structural considerations and factors correlate with sustainability planning content. We are particularly concerned with improving our understanding of why rural sustainability plans are the “way” they are, how and why they differ, and what the implications may be for meaningful policy and action.

2. Methodology

2.1. Data Collection

Because federal policy linking sustainability planning to infrastructure funding was delegated to the provinces, each province established different procedures and practices for planning. As a result, some provinces required all municipalities to complete plans, while others made the exercise optional. Of the rural communities (estimated to be nearly 5,000) in Canada, we contacted over 4,000 by telephone and email regarding the existence and availability of such plans (many communities still do not have them, are only just beginning to draft them, or are unaware of their existence). Although the Canadian Sustainability Plan Inventory hosts plans from a range of different sized municipalities, for the purposes of this study, we have limited our analyses to communities of less than 50,000 inhabitants.ⁱ

Sustainability plans were collected from across the country between June, 2011 and August, 2013 with correspondence in both English and French (where required). We obtained contact information from the publically available directory for municipalities hosted by the provincial ministry responsible for municipal affairs. We requested digital or paper full-text copies of plans and converted them into searchable PDF format which we then catalogued, coded, and archived through the Canadian Sustainability Plan Inventory.

As Bowen (2009) notes, organizational and institutional documents have long provided a valuable source of data for qualitative research, and can serve as a means of exploring events, organizations or programs (Bowen, 2009; p. 29). In turn, a number of researchers have explored how different planning documents can serve as indicators of conceptual and practical change in areas such as ecosystems services, pedestrian safety (Jones et al., 2010), urban governance (Dhar and Khirfan, 2017), climate change adaptation (Overstreet, 2016), and land use (Train, 2015). In terms of sustainability planning, however, much of the emphasis is upon institutional (often post-secondary), rather than municipal planning (Lidstone, 2014; Bieler and McKenzie, 2017; Vaughter, 2015). One exception, however, is Stuart (2013), which examines the relationship between Integrated Community Sustainability Planning and novel ecosystem formation.

2.2. Data Coding

Plans were first coded for the following attributes: province and municipality (by name), type of plan (based on most common responses in the plan's name or template used), age (taken from the publication date compared to 2013 when collection was complete), length (number of pages), and author (public officials or consultants). We used the following abbreviations for provinces and territories (BC = British Columbia, AB = Alberta, SK = Saskatchewan, MB = Manitoba, ON = Ontario, QB = Quebec, NB = New Brunswick, NS = Nova Scotia, PEI = Prince Edward Island, NL = Newfoundland and Labrador, YK = Yukon, NWT = Northwest Territory, and NU = Nunavut).

The content of each plan was then assessed according to a 5-pillar model of sustainability. While there is no set Canadian model of sustainability, the 5-pillar approach provides greater nuance and granularity to our assessments. Count data were generated for each of the five pillars of sustainability mentioned within the goals, principles, values, strategies, objectives, priorities, and actions of each plan. Following a standardization in order to account for different lengths of plans (which varied significantly), each pillar was then coded on a 1-3 relative scale, where the score of each pillar is established in relation to the highest count pillar. For example, the pillar with the highest count was coded as 3; if another pillar has more than 2/3 of the highest counted pillar, it was also coded as 3. If a pillar had less than 2/3, but more than 1/3 of the highest counted pillar, it was coded as 2. If a pillar had less than 1/3 of the highest counted pillar, and more than 0, it was coded as 1. Any pillar with no count was coded as 0.

In order to complement our primary data from the plans, we cross-referenced each plan with 2011 sub-division data from the Canadian Census (the most recent available year at time of writing). Census sub-divisions are the lowest level of Geographic Classification in Canada (province and territory, census division and sub-division) and are the general term for municipalities (as determined by provincial/territorial legislation) or areas treated as municipal equivalents for statistical purposes (e.g., Indian reserves, Indian settlements and unorganized territories). These data were provided by Statistics Canada, through the Spatial Data Library of the University of Alberta.

Fourth, we employed an additional variable, the Metropolitan Influence Zone (MIZ) which is a measure of both distance and the movement of individuals (i.e., commuters) between rural and metropolitan areas. The MIZ is determined by Statistics Canada as the sum of the percentages of two variables, the resident employed labour force living in that particular census subdivision, and the labour force working in the census metropolitan area (CMA) or the census agglomeration (CA). The options for this variable were on whether the census subdivision was: 1) within the CMA; 2) within CA with at least one census tract; 3) within CA having no census tracts; 4) outside of CMA or CA having strong metropolitan influence; 5) outside of CMA or CA having moderate metropolitan influence; 6) outside of CMA or CA having weak metropolitan influence; 7) outside of CMA or CA having no metropolitan influence; and 8) outside of CA and in the territories (Statistics Canada). For example, a moderate MIZ includes census subdivisions where at least 5%, but less than 30% of the labour force commute to the Census Metropolitan Area or Census Agglomeration (Statistics Canada). While the data here are not representative, the proportion of MIZ 5 (moderate influence) communities is broadly consistent with the national ratio.

2.3. Data Analyses

Our analyses produced descriptive statistics, plan characteristics, municipality characteristics, and sustainability emphases. We also analyzed relationships among plan variables, municipality variables, and sustainability emphases. We used cross-tabulation analyses to analyze relationships between sets of nominal variables, and used independent samples t-tests and analyses of variance to test relationships between nominal variables and variables that were ordinal, interval or ratio. For *post hoc* multiple comparisons, we used Tukey's b test. We used Pearson's product-moment correlation tests for relationships among variables that were ordinal, interval, or ratio in nature. We chose a significance level of $p < 0.05$.

To better understand these relationships, we conducted bivariate regression analyses for characteristics between: (1) community characteristics and plans; (2) core community characteristics and the type of plan; and (3) types of plan and sustainability emphases. To this end, we conducted a multivariate regression on a wide range of factors, including MIZ and community characteristics (e.g., employment, proportion of migrant populations) against both the length and age (determined as the year of publication subtracted from 2013). In addition, since the dependent variable for this regression (Type of Plan) is categorical (6 categories) a multinomial logit regression was used, with the sample size limited to coded data only. Additionally, since this model included MIZ rankings, MIZ categorizations were created as dummy variables, allowing each score to serve as a potential independent variable. Last, we conducted a multivariate regression analysis of variables determined by items 1 and 2 (above) to assess influence upon sustainability-specific content.

3. Results

The goal of this project was to describe the state of sustainability plans across the country (in terms of origin, age, length, and authorship), and to analyze the impact of these plan characteristics and various community characteristics on the sustainability emphases of those plans. As can be seen from these data, and has been noted by rural sociologists in other countries (Flora and Flora, 2013), there is significant diversity both between rural communities in Canada,

as well as the models and methods of sustainability planning (see also Chess, 2012). Specifically (and as would be expected given the varied approaches to planning) there is a wide range in the length, and model or type of plan.

3.1 Plan Attributes

General Attributes: Following our requests to municipalities across the country, we obtained 1,242 sustainability plans. Of these plans, 1,155 were from communities less than 50,000 people. Of these smaller municipalities, and given the data constraints, we were able to code 862 for sustainability emphases and were able to calculate MIZ for 826 of the plans. The average population of municipalities coded for sustainability plans was 4,962 people (see Table 5 for descriptives).

Age and Length: Most plans are relatively recent which is expected given the linkages to federal policy and incentive programs. The average age of 4.6 years for the sustainability plans is consistent with the timing of announcements (2005 – present) of the Gas Tax Fund (GTF). Some forward-thinking communities had already prepared plans that satisfied the GTF requirements, while others prepared plans in the few years before, or as soon as, GTF money was made available. For many communities, the process to prepare and submit a sustainability plan can take several years. There was considerable variation in the length of the plans (1 to 422 pages in length, with an average of 59 pages), reflecting the differing approaches, commitments, and processes used by communities across the country.

The average age of the plans was 4.6 years, but ranged as high as 34 years (Table 1). The average age varied significantly by province or territory (Table 1; $F = 5.172$, $df = 12$, $p < 0.001$), with the plans from Nunavut, North West Territories, Newfoundland and Labrador, and Manitoba (range = 3.8-4.1 years) being statistically younger than the Yukon (the highest at 6.6 years). The average length of each plan was almost 59 pages (range = 1-422). Age and length of plan were not correlated. The average length varied significantly by province or territory ($F = 10.192$, $df = 12$, $p < 0.001$), with Saskatchewan the lowest (32.5 pages) and Nunavut the highest (100.8 pages). The 2011 population was correlated to plan length ($r = 0.241$, $df = 862$, $p < 0.001$), but not to age.

Authorship: Of 735 plans for which the authors' affiliations are known, 48.8% were written by consultants and 51.2% by public officials (Table 1). Plans written by consultants were longer (69.5 vs. 47.6 pages; $t = -6.284$, $df = 629$, $p < 0.001$) than those written by public officials. The age of plans did not vary by authorship. Provinces with a higher than expected authorship by consultants included Alberta, British Columbia, and Ontario, and provinces with a higher than expected authorship by public officials were Manitoba, Nova Scotia, North West Territories, Prince Edward Island, and Quebec ($X^2 = 72.5$, $df = 12$, $p < 0.001$). The average population for municipalities whose plans were written by consultants was 5,607 people, compared to the average population of 4,092 in communities whose plans were written by public officials ($t = -2.618$, $df = 737$, $p = 0.009$). When examined within the context of provincial size and economic capacity, such a difference makes sense – Alberta, British Columbia and Ontario are large provinces in both economic and population terms, and have, for example, provided grants to municipalities embarking upon sustainability planning initiatives.

Plan authorship has implications for balancing the provision of expertise to a project and embedding sustainability within a municipality's organizational structure (Leung, 2009; Miller et al., 2011) On the one hand, the large contribution of consultants to the preparation of

sustainability plans (48.8%) may reflect the desire for experience and expertise that many small communities may not have by virtue of their limited administrative and political capacity. On the other hand, the average population of communities using consultants was slightly larger (reflecting a larger tax base to pay consulting companies) than communities using public officials. In some cases, a consulting company was completing plans for multiple communities at the same time. Presumably, the experience of these consultants improved the efficiency of plan preparation, but also resulted in longer plans, which probably reflects an (albeit potentially superficial) understanding of the wide range of issues to be addressed in a sustainability plan. Specifically, consultants appear to have taken a more comprehensive approach to planning, but in doing so, may have over-written or neglected the specific needs or priorities of the community in question, preferring instead to maximize the “deliverable” and potential economies of scale across different clients. At the same time, it also follows that newer plans would incorporate new(er) pillars (such as governance), and that locally-written documents would have insight into the political and/or governance challenges sustainability initiatives might face (and thus prioritize governance).

Planning approaches: Indicative of the wide range of types of plans created to qualify for GTF-eligible status, we received over 70 different types. The most common types of plans were named ICSPs (40.5%), followed by official sustainability plans (18.4%) and sustainability plans (18.0%). The type of plan chosen for each province varied widely (Table 2). For example, ICSPs were preferred by Nova Scotia, Newfoundland and Labrador, Yukon, and North West Territories. Official community plans were preferred by Prince Edward Island and Ontario. Sustainability plans were preferred by Alberta and Quebec. The average plan length was highest for official community plans and lowest for strategic plans. The average plan age was highest for official community plans and lowest for action plans. The average municipal population was lowest for ICSPs and highest for strategic plans.

Community and plan characteristics, do, in fact, predict the form and content of plans (thus opening up much broader questions about the role, nature, and effects of related factors not assessed here, such as the participatory and engagement strategies and behaviours present during the planning process), as well as how the differences between types of plans (and underlying methods) may provide either a proximal or distal influence upon the content of plans themselves. For example, distance (as a core defining factor in rural policy) is seen to influence the structure (length) of sustainability plans. Additionally, our data demonstrate that different types of plans have significant variation in sustainability emphases, and that more integrated planning approaches may not necessarily result in more integrated, or equally weighted sustainability content. Ultimately, these data represent the diversity of planning approaches undertaken in Canada (an unsurprising result given the diversity of both communities and planning methods/incentives used), and they point to an interesting relationship between the method taken toward sustainability planning and the content of the plan. Such findings have potential implications for sustainability planning in the future – as rural communities continue to revise, examine, and develop adaptive instruments and strategies, knowing that the tools and outputs created will actually have an effect upon the content of the outputs itself may inform the evaluation, selection, and implementation of those very tools and outputs.

3.2 Plan content

Nationwide, the pillars of sustainability with the highest average emphasis were economic and environmental (with a score of 2.4 each), followed by social (2.3), governance (1.6), and cultural (1.3; Table 3). There was considerable variation among provinces (ANOVAs were significant for each pillar). Statistically, the social pillar was rated lowest by Ontario, but highest by Prince Edward Island, Nunavut, and North West Territories. The economic pillar was rated lowest by Manitoba, but highest by New Brunswick and Prince Edward Island. The cultural pillar was rated lowest by Manitoba, but highest by Newfoundland and Labrador. The environmental pillar was rated lowest by Nunavut, but highest by Prince Edward Island. The governance pillar was rated lowest by Ontario, but highest by Quebec, Saskatchewan, and Newfoundland and Labrador.

Sustainability emphases varied slightly with plan characteristics. Regarding authorship, plans written by consultants had higher average codes for the economic (2.6 vs. 2.2; $t = -6.508$, $df = 737$, $p < 0.001$), cultural (1.4 vs. 1.1; $t = -3.866$, $df = 737$, $p < 0.001$), and environmental pillars (2.4 vs. 2.3; $t = -2.217$, $df = 737$, $p < 0.027$) than plans written by public officials. The opposite was true for the governance pillar (1.5 vs. 1.6; $t = 2.439$, $df = 736$, $p < 0.015$). Plan age (Table 4) was negatively correlated with emphases on the social, economic, and governance pillars. Plan length was positively correlated with the social, economic, and environmental pillars. Population was positively correlated with only the environmental pillar. Regarding plan type, ICSPs and sustainability plans had higher average codes for the social pillar than “other” plans ($F = 20.131$, $df = 5$, $p < 0.001$). Official community plans had higher average codes for the economic pillar than “other” plans ($F = 18.541$, $df = 5$, $p < 0.001$). ICSPs had higher average codes for the cultural pillar than “other” plans ($F = 23.303$, $df = 5$, $p < 0.001$). Official community plans and “other” plans had higher average codes for the environmental pillar than action plans ($F = 40.612$, $df = 5$, $p < 0.001$). Strategic plans had higher average codes for the governance pillar than official community plans ($F = 5.225$, $df = 5$, $p < 0.001$) (see also Chess 2012).

3.3 Community characteristics

Most of the communities were from either MIZ 5 or 6, with very few communities from MIZ 2 and 8 (Table 5). The mean MIZ was 4.8, which corresponds to a census subdivision outside of a metropolitan area or census agglomeration area with only moderate metropolitan influence. The MIZ areas more likely to use consultants for authors were zones 4, 5, 7, and 8. The MIZ areas more likely to use public employees for authors were zones 1, 2, 3, and 6 ($X^2 = 25.014$, $df = 7$, $p = .001$). Regarding the types of plans, MIZ 5, 6, 7, and 8 produced ICSPs more than expected, MIZ 1, 2, 3, and 4 produced official community plans more than expected, and MIZ 1, 2, 3, 4, and 6 produced sustainability plans more than expected ($X^2 = 153.825$, $df = 35$, $p < .001$).

MIZ was not correlated with plan age, but was correlated with population and plan length. As expected with areas more directly tied to larger metropolitan spaces, MIZ 4, 5, 6, 7, and 8 had significantly lower populations than MIZ 1 and 2, which in turn were lower than MIZ 3 ($F = 44.435$, $df = 7$, $p < 0.001$). Furthermore, MIZ 4 and 7 had shorter plans (42 and 52 pages respectively) than MIZ 3 (86 pages; $F = 5.263$, $df = 7$, $p < 0.001$).

Using MIZ as a nominal variable, the social pillar was emphasized the least for MIZ 1 than other communities (Table 5). The environmental pillar was emphasized higher for MIZ 3 than for MIZ 7 communities. There were no differences among MIZ categories for the economic,

cultural, and governance pillars. Using MIZ as an ordinal variable, MIZ was correlated only with the social sustainability pillar ($r = .093$, $p = 0.008$), suggesting that more remote communities emphasized social sustainability than less remote communities.

4. Discussion

There are three key findings that emerge from this analysis: (1) The diversity and complexity of factors influencing sustainability plans produced illustrates the diversity of both provincial approach toward rural communities, and of the communities themselves (well documented elsewhere); (2) the emphases and integration of different pillars of sustainability (and indeed models and conceptions of sustainability) also vary significantly across both planning types, and communities. However, social sustainability has emerged as a strong “second place” pillar, with some variation across communities and regions. This is an important dynamic – while operationally often neglected in rural development (especially in Canada) in favour of either concrete employment/industry recruitment initiatives (ie, economic development) or (less common) environmental (often infrastructure) initiatives, the growing awareness of social (and related) inequities is perhaps a reflection of an increasingly integrated or “nested” conception of rural sustainability where socio-economic and other demographic variables are no longer seen as exogenous to (or dependent upon) activities in the economic and environmental pillars; and (4) (as noted above) not only who writes or creates plans, but also the geographic factors associated with different communities (particularly) also influence the prioritization of different pillars, with social sustainability playing an important role for not only more Northern or remote communities, but also for urban adjacent communities. That said, it is likely the underlying reasons for this importance differ.

Inter-provincial and inter-municipal variation: Each province engaged in a separate provincial-federal agreement, with various agencies being encouraged or contracted to promote or facilitate procedures and frameworks for preparing sustainability plans. These differences are also driven, in part, by provincial engagement in the sustainability planning process. For example, Newfoundland and Labrador government issued explicit guidelines about the form and nature of plans that would qualify for GTF, while Alberta issued similar yet more flexible guidelines (explaining the high numbers of ICSPs and MSPs in these provinces). Additionally, both Ontario and British Columbia emphasized Community Planning (OCPs), while New Brunswick (which did not require any form of municipal plan in order to qualify for GTF) had a small number of plans ($n=36$), distributed over many categories.

This variation is indicative of broader patterns of both federal politics in Canada, as well as how those patterns have contributed to consistently poor performance (when compared to other OECD states) in terms of environmental quality indicators (Boyd, 2003), social inequities, and economic development across provinces (Raphael, 2016). Under the Canadian Constitution Act (1982), environmental questions fall under provincial jurisdiction, while others (such as health) are shared and others (such as trade regulation and citizenship) have federal purview. In turn, much of the federal history of Canada (particularly as applied to the pillars of sustainability) are characterized by the “politics of blame avoidance”, delegation without authority (often to municipal governments), and practices of fiscal policy that often pit provincial governments against each other, as well as against the federal government (Bakvis et al., 2009; Obinger et al., 2005). While the federal structure of Canadian government is ostensibly intended to reflect the

regional diversity and needs of the provinces and territories, as these data demonstrate, the result can be highly fragmented, inconsistent, and in some cases, even tend toward a “lowest common denominator” outcome.

Such effects have been clear, not only in terms of environmental performance, but also of progress made more generally in terms of sustainable development. While the Canadian federal government established a Sustainable Development Strategy in 2010, to date there are significant deficiencies in terms of setting targets and developing operational strategies (Bedore, 2013). Similarly, Ellis (2013) also finds that both Canadian federalism, and the practices of environmental sustainability reporting, have created diverse but inconsistent approaches, and little in the way of inter-provincial or national harmonization in terms of how sustainability is operationalized, measured, and communicated to both the public and decision-makers.

The variation is apparent even within the wording of the agreements made for each province and how these agreements were interpreted and passed on to the municipalities could have affected the high variability in what was submitted and accepted for funding. An example of this variation is within the agreements between the federal government and the provinces of British Columbia and Quebec versus the agreements with the rest of the provinces. While most of the agreements explicitly state that an Integrated Community Sustainability Plan is expected to be submitted, the province of British Columbia and Quebec have plans that use the term “planning” rather than “plan”. This implies more flexibility with formatting of any plans used for the GTF in these provinces.

Pillars of sustainability: It is difficult to interpret the variation in sustainability emphases among provinces and territories, but part of the explanation likely lies in the sustainability priorities of each jurisdiction and the priorities of any agency taking the facilitation lead in each jurisdiction. For example, there is significant diversity in the models, tools, and conceptions of sustainability used to inform sustainability planning in Canada (Hull, 2011). In Alberta alone, not only were there two toolkits available (one from the Alberta Urban Municipalities Association, the other from the Alberta Association of Municipal Districts and Counties), but multiple approaches and methods were adopted by the consultants, communities, and nongovernmental organizations engaged in the sustainability planning process. Chess (2012) found similar patterns in British Columbia. As a result, while the United Nations has recently expanded its conception of sustainable development to include institutions/governance, conceptions of sustainability varied across the country from a classic three-pillar model (social, economic, and environmental sustainability) to four and five pillar models.

Despite the explicit recognition of the integrative nature of sustainability planning, each of five pillars of sustainability received varying emphases in the sustainability plans. The three most emphasized pillars were economic, environmental, and social. This pattern of emphasis may be due to many communities and individuals addressing these pillars under a commonly used three-pillar framework (as per Brundtland, 1987) before addressing the additional two governance and cultural pillars. As might perhaps be expected given the historical trajectory of sustainable development since that Report (1987), both economic and environmental pillars received the highest weighting, indicating that (for the communities included in this dataset at least) both pillars are recognized as critical or important for the future of these communities. Naturally, this may also be somewhat of an artefact from the significant emphasis that has been placed upon balancing economic growth and environmental performance over recent decades (Boyd, 2003; Lee and Perl, 2003), For historically resource-dependent provinces (such as Atlantic Canada

(forestry and fisheries) and Alberta (oil and gas), finding a balance between the needs and costs of economic development and growth have presented significant and recurring policy and social challenges.

The potential influence of economic and developmental history is also likely reflected in our data. It is notable that Albertan communities (many with a history of economic fluctuation linked to large-scale agriculture and oil/gas extraction) tend to prioritize economic sustainability over environmental, while the smaller (and fisheries/forestry dependent) provinces in the Maritimes (with the exception of New Brunswick) tend to have more diversified priorities (with communities in Prince Edward Island, for example, placing environmental sustainability ahead of economic, and Nova Scotian communities ranking economic and environmental sustainability equally). This may be the result of failed industries in these provinces – both Nova Scotia and Newfoundland/Labrador suffered significant economic losses with the closure of multiple fisheries over the past 20 years, and Prince Edward Island is historically heavily dependent on agriculture (potatoes) and fisheries as well. Rural communities in these provinces have direct experience with not only economic downturns, but the termination of anchor economic sectors, and in Newfoundland and Labrador, have even experienced a legislated re-settling of citizens from small and remote fishing communities between 1954 and 1975. These experiences not only foreshadow what may lie in the future for other rural places, but may have attenuated the public or community's awareness of how environmental degradation can directly impact economic growth and social cohesion

Another notable result is the importance of social sustainability as a strong “second place” pillar of sustainability for rural communities. While again varied between provinces, this ranking also demonstrates a fairly pronounced tendency for communities to emphasize the more conventional 3-pillar models of sustainability, and to place relatively little (or zero) emphasis upon governance or cultural sustainability. This may be explained by both the tools used to support sustainability planning in the province (such as the Association of Municipalities of Ontario Sustainability Planning Toolkit, which does not mention or account for governance/governance sustainability), or the distinction between privately contracted plans (about 78% of the plans for Ontario used in this study were completed by private consulting firms) and community-based (i.e., public) planning exercises.

Authorship and Location: In a state as geographically and economically large and diverse as Canada, the communities in this study are somewhat removed from urban areas, with an average MIZ score of 4.8. As was the case when sustainability content is compared between provinces, there is both a broad range of emphasis between different MIZ communities. However, as our results and discussion show, there are also some notable correlations present that point to the complexity and variability of sustainability planning, as well as the importance of considering how both exogenous and endogenous (and thus potentially subject to intervention or modification) factors can influence the models, content and priorities of sustainability plans.

Plans written by consultants had higher codes for most of the sustainability pillars than plans written by public officials. This is not surprising, given that these consultants presumably had some experience and frameworks to use to fully address these pillars in consultations and writing. The variation in sustainability emphases by plan type may also be reflected in the templates used (and issues to be addressed) for each type of plan.

Other factors may also account for these differences, both within and across provinces. Of particular concern, based in part upon the increased vulnerability of remote, Aboriginal and northern communities to economic, environmental, and cultural disruption, is how such factors

may influence or correlate with the content of sustainability plans. Specifically, the MIZ (Metropolitan Influence Zone) has been demonstrated to be a significant factor in both the capacity (Hallstrom et al., 2012a) and human/social capital (Flora and Flora, 2013) of rural communities, and accordingly a potential factor in the resilience and adaptability of such communities.

These results point to a number of possibilities: (1) social sustainability is a priority for both urban adjacent (MIZ 1) and remote (MIZ 6-8) communities, but potentially for different reasons. Urban adjacent communities see (by definition of MIZ 1) a significant amount of labour and economic movement between communities, thus effectively blending the social fabric and identity of the more rural space with the larger urban space (such communities are increasingly common as large urban areas expand their footprint, and previously “distant” communities become de fact suburbs of the bigger city). For truly remote rural communities, social sustainability may be defined less of co-optation, but rather the loss of younger people and families to urban spaces in pursuit of education, employment, services, and cultural activities. Unfortunately, geographic location and economic integration are largely exogenous to the planning process (ie, one cannot plan to be closer to a city), but do provide both a requirement, and an opportunity, for sustainability plans to consider the opportunity structures created by a lower MIZ in terms of economic, social, governance, and even ecological functionality.

5. Conclusions

Ultimately, it is possible to draw a few general conclusions based on this study. As might be expected, community characteristics affect plan characteristics and sustainability emphases of those plans. Additionally, we see some broader patterns of how rural community sustainability is framed and prioritized in Canada. Although ideally created as an integrative plan that covers multiple policy domains and sectors, there is no question that on the basis of both provincial and individual community attributes, not all sustainability plans give equal attention to the different pillars of sustainability. As might be expected from the newer, and relatively ambiguous elements of sustainability and sustainable development, cultural and governance-based sustainability tend to be lower priorities for rural communities. At the same time, social sustainability is often surprisingly important for many rural communities, and emphasized by many different forms of planning. While environmental and economic sustainability are highly ranked in general (reflecting the original and perhaps primary tension within the concept of sustainable development more broadly), there is significant variation between provinces, and perhaps not surprisingly, the plans from northern and remote communities in the North West Territories and Nunavut (with very small sample sizes) tend to favor social sustainability. Such communities are typically small, remote, have significant Indigenous populations (which tend to also be younger), and may face specific linguistic, social and cultural pressures that differ from more southern rural spaces.

Perhaps the most interesting result from this study is that there is a statistically significant set of relationships between broad categories of different plans (and presumably the ways in which they were created) that could potentially extend beyond the tools, toolkits, or processes used. In other words, there are factors that can be subject to either/both intervention and/or bias that have structured the content and form of sustainability plans in rural Canada. Overall, there is no clear provincial “winner” in terms of sustainability planning. In fact, our results speak to a consistency with both the Canadian approach to rural development and environmental performance more

broadly. While it is unlikely that having a form of sustainability plan is a liability for a rural community (particularly as it may promote or build community engagement), the broader implications of such planning for the long-term viability of rural communities remains questionable. The population, size, or economic strength of a province is not a clear predictor of either engagement with sustainability planning or with any specific priority for sustainability. Similarly, no one province stands out as a leader in terms of emphasizing multiple pillars of sustainability. That said, a few provinces rank in the top three for more than one pillar (but never more than two). Thus, Alberta, British Columbia, Newfoundland and Labrador, Nova Scotia, the North West Territories, and Prince Edward Island have a somewhat more integrated set of priorities for sustainability (and this may reflect the tools and mandates driven by the different provincial governments). Notably, only two provinces emphasize the same pillars “equally” – both British Columbia and Nova Scotia (provinces dependent on forestry, shipping, and fisheries) rank highly for economic and environmental sustainability when compared to other provinces.

Although these results are broadly descriptive, there are some potential implications. In terms of rural community planning, our results speak to the importance of acknowledging the potential path dependencies of not only undertaking the creation of different types of plans, but the templates, models, and even staffing or contracting of those plans can have effects (whether desired or otherwise) upon the content, priorities, and format of those plans. For the developmental trajectories of rural communities more broadly, the results speak to the diversity of rural communities across Canada, but also present opportunities for caution, both in terms of the different provincial priorities that might emerge, and the reality that economic sustainability may not always trump or pre-empt other sustainability priorities. In turn, linking infrastructure spending to sustainability may not provide the appropriate or sufficient resources needed to empower or progress social, cultural, or governance pillars of sustainability. In fact, a more skeptical perspective might view such a linkage as an intervention designed to address only economic and environmental sustainability as a ‘band aid’ solution.

From a research standpoint, although our methodology and framing of the research questions are consistent with other studies of planning content, there are a number of areas for future exploration. In addition to more analyses of the existing data (both in terms of our content analysis and census sub-division data, questions around citizen engagement (Dipa, 2014), implementation, evaluation, and indicators for rural sustainability can all be derived. Similarly, the effects of utilizing different planning models and toolkits, and the implications for other planning fields (such as land use, but also more socially-directed fields such as aging, housing, public health, health care and social equity) can also be explored in greater detail, both in terms of planning, and the relationship of planning to implementation.

Finally, while our results are specific to Canada, there may be implications for rural communities elsewhere. In general terms, both the research questions and methods (while labour intensive) can be applied to sustainability and related planning initiatives in many contexts, and as an applied field, such comparative work may yield greater insights into the operational biases or preferences at play. Similarly, research that situates such results within different institutional structures (eg. federal vs unitary systems), different incentive or policy strategies (such as the Gas Tax Fund in Canada vs the Agricultural Fund for Rural Development in the European Union vs. the rural development programs of the United States’ Department of Agriculture) may yield insight into the opportunities for innovation, resilience and adaptive capacity in rural areas.

Finally, while the results are important and relevant to sustainability planning as a broader rural undertaking, there are some limitations to be recognized. First, we worked with a unit of analysis (i.e., a municipality) that is typically characterized by diverse communities, planning approaches, and plans; Flora and Flora, 2013). That diversity within the municipalities can only be examined with additional, extensive study. Second, even though we trained staff and conducted validation tests throughout the coding process, it is possible that some concerns with inter-coder reliability remained. Third, the willingness of communities to share data varied considerably (e.g., some communities were reluctant to share plans, others requested payment for plans, and others submitted incomplete or inaccurate plans). Fourth, the province of Quebec was underrepresented in this study, despite our best efforts to request sustainability plans in French. Similarly, Newfoundland and Labrador was overrepresented because that province was able to supply all of its sustainability plans through a central agency. Fifth, despite the potential benefits of adding more Statistics Canada data, there were difficulties in integrating datasets across time periods and inconsistent municipality boundaries. Finally, we acknowledge that our cut-off of 50,000 citizens is rather arbitrary, but is a common threshold used in Canada.

Finally, while our results are specific to Canada, there may be implications for rural communities elsewhere. In general terms, both the research questions and methods (while labour intensive) can be applied to sustainability and related planning initiatives in many contexts, and as an applied field, such comparative work may yield greater insights into the operational biases or preferences at play. Similarly, research that situates such results within different institutional structures (eg. federal vs unitary systems), different incentive or policy strategies (such as the Gas Tax Fund in Canada vs the Agricultural Fund for Rural Development in the European Union vs. The rural development programs of the United States' Department of Agriculture) may yield insight into the opportunities for innovation, resilience and adaptive capacity in rural areas.

Acknowledgements

Funding for this project was provided by the Social Sciences and Humanities Research Council, the University of Alberta Killam Trust, the Alberta Rural Development Network, and the Alberta Centre for Sustainable Rural Communities. We give special thanks to our hard-working research assistants, including Aubrie Duncan, Amy Avdeeff, Erika Heiberg, Naomi Finseth, Marcus Becker, Stacey Haugen, Landon Redelback, Kachuri Rook and Michael Huang. Thanks also to Patrick Ndlovu and Kwanele Ngwenya for helping to synthesize and analyze the multiple datasets created by this project.

References

- Baer, W.C., 1997. General plan evaluation criteria: an approach to making better plans. *Journal of the American Planning Association* 63 (3), pp. 329–344.
- Bagheri, A. and Hojorth, P., 2007. Planning for sustainable development: a paradigm shift towards a process-based approach. *Sustainable Development* 15 (2), pp. 83–96.
- Bakvis, H., Baier, G. and Brown, D., 2009. *Contested Federalism? Certainty and ambiguity in the Canadian Federation*. Oxford University Press, Don Mills.
- Basset, E. and Shandas, V., 2010. Innovation and climate action planning: perspectives from municipal plans. *Journal of The American Planning Association* 76 (4), pp. 435–450.
- Beatley, T. and Manning, K., 1997. *The Ecology of Plan: Planning for Environment, Economy and Community*. Island Press, Washington, DC.
- Beckley, T., Martz, D., Nadeau, S., Wall, E. and Reimer, B., 2008. Multiple capacities, multiple outcomes: delving deeper into the meaning of community capacity. *Journal of Rural and Community Development* 3 (3), pp. 56–75.
- Bedore, J.C., 2013. *An evaluation of Canada's environmental sustainability planning system and the Federal Sustainable Development Act* (M.R.M. Graduating extended essay research project, Simon Fraser University).
- Berke, P., Backhurst, M., Day, M., Ericksen, N., Laurian, L., Crawford, J. and Dixon, J., 2006. What makes plan implementation successful? An evaluation of local plans and implementation practices in New Zealand. *Environment and Planning B: Planning and Design* 33 (4), pp. 581–600.

Berke, P.R. and Manta-Conroy, M., 2000. Are we planning for sustainable development? Evaluation of 30 comprehensive plans. *Journal of the American Planning Association* 66 (1), pp. 21–33.

Bieler, A. and McKenzie, M., 2017. Strategic planning for sustainability in Canadian higher education. *Sustainability* 9 (2), pp. 161.

Bosshard, A., 2000. A methodology and terminology of sustainability assessment and its perspectives for rural planning. *Agriculture, Ecosystems & Environment* 77 (1-2), pp. 29–41.

Bowen, G., 2009. Document analysis as a qualitative research method. *Qualitative Research Journal* 9 (2), pp. 27–40.

Boyd, D.R., 2003. *Unnatural Law: Rethinking Canadian Environmental Law and Policy*. UBC press, Vancouver.

Brundtland, G.H., 1987. *Our Common Future*. Oxford University Press, New York.

Bunch, M., Parkes, M., Zubrycki, K., Venema, H., Hallstrom, L., Neudorffer, C., Berbés-Blázquez, M. and Morrison, K., 2014. Watershed management and public health: an exploration of the intersection of two fields as reported in the literature from 2000 to 2010. *Environmental Management* 54 (2), pp. 240–254.

Calder, M.J. and Beckie, M.A., 2013. Community engagement and transformation: case studies in municipal sustainability planning from Alberta, Canada. *Community Development* 44 (2), pp. 147–160.

Chaplin, T.S., 2012. From growth controls, to comprehensive planning, to smart growth: planning's emerging fourth wave. *Journal of the American Planning Association* 78 (1), pp. 5–15.

- Chess, J., 2012. Integrated Community Sustainability Planning – Implications for Rural British Columbia. Fraser Basin Council, Vancouver.
- Copus, A., Courtney, P., Dax, T., Meredith, D., Noguera, J., Talbot, H. and Shucksmith, M., 2011. EDORA: European Development Opportunities in Rural Areas. ESPON & UHI Millennium Institute, Luxembourg.
- Day, D., 1997. Citizen participation in the planning process: an essentially contested concept? *Journal of Planning Literature* 11 (3), pp. 421–434.
- Day, J. C., Gunton, T. I. and Frame, T. M., 2003. Toward environmental sustainability in British Columbia: the role of collaborative planning. *Environments- A Journal of Interdisciplinary Studies* 31 (2), pp. 21–38.
- Dhar, T.K. and Khirfan, L., 2017. Climate change adaptation in the urban planning and design research: missing links and research agenda. *Journal of Environmental Planning and Management* 60 (4), pp. 602–627.
- Dipa, N.J., 2014. Assessing the level of citizen participation in Integrated Community Sustainability Planning and Implementation in Alberta. Paper presented at the Annual Meeting of the IRSPM Conference, Ottawa, ON.
- Douglas, D.J.A. (Ed.), 2010. *Rural Planning and Development in Canada*. Nelson Education, Toronto.
- DuPuis, E.M. and Vandergeest, P. (Eds.), 1996. *Creating the Countryside: The Politics of Rural and Environmental Discourse*. Temple University Press, Philadelphia.
- Ellis, E., 2013. An evaluation of environmental sustainability reporting in Canada. (M.R.M. Graduating extended essay research project, Simon Fraser University).

Flora, C.B. and Flora, J.L., 2013. *Rural Communities: Legacy and Change*. Westview Press, New York.

Gasparatos, A., El-Haram, M. and Horner, M., 2008. A critical review of reductionist approaches for assessing the progress towards sustainability. *Environmental Impact Assessment Review* (4-5), pp. 286.

Gismondi, M., Connelly, S., Beckie, M., Markey, S. and Roseland, M., 2016. *Scaling Up: The Convergence of Social Economy and Sustainability*. AU Press, Edmonton.

Guyadeen, D. and Seasons, M., 2016. Plan evaluation: challenges and direction for future research. *Planning Practice and Research* 31 (2), pp. 215–228.

Hallstrom, L., Finseth, N., Macklin, P., Parkins, J., Mundel, K., Watson, P., Rudd, M., Baugh, D., Gervais, J. and Keay, D., 2014. Alberta's priority rural policy research questions. *Journal of Rural and Community Development* 9 (4), pp. 144–162.

Hallstrom, L.K., Beckie, M. (Ed.), Hvenegaard, G. (Ed.) and Mundel, K. (Ed.), 2016. *Taking the Next Steps: Planning, Participation and Policy for Sustainable Rural Canadian Communities*. University of Alberta Press, Edmonton.

Hallstrom, L.K., Mundel, K., Gados, A. and Barker, S., 2012a. Assessing rural capacity for sustainability and resilience in Canada. In progress.

Hallstrom, L.K., White, B. and Donlan, H., 2012b. From research to policy and back again. *Journal of Rural and Community Development* 7 (3), pp. 1–3.

Hanna, K.S., 2005. Planning for sustainability: experiences in two contrasting communities. *Journal of the American Planning Association* 71 (1), pp. 27–40.

Healey, P., 2006. *Collaborative Planning: Shaping Places in Fragmented Societies*. UBC Press, Vancouver.

- Hull, A., 2011. *Evaluation for Participation and Sustainability in Planning*. Routledge, New York.
- Jones, D.K., Evenson, K.R., Rodriguez, D.A. and Aytur, S.A., 2010. Addressing pedestrian safety: a content analysis of pedestrian master plans in North Carolina. *Traffic Injury Prevention* 11 (1), pp. 57–65.
- Kenny, M. and Meadowcroft, J., 1999. *Planning Sustainability* (electronic resource). Routledge, New York.
- Koontz, T.M., 2006. Collaboration for sustainability? A framework for analyzing government impacts in collaborative-environmental management. *Sustainability: Science, Practice and Policy* 2 (1), pp. 15–24.
- Kulig, J., Edge, D. and Joyce, B., 2008. Understanding community resiliency in rural communities through multi-method research. *Journal of Rural and Community Development* 3 (3), pp. 77–94.
- Laurian, L. and Shaw, M.M. 2009. Evaluation of public participation: the practices of certified planners. *Journal of Planning Education and Research* 28 (3), pp. 293–309.
- Laurian, L., Day, M., Berke, P., Ericksen, N., Backhurst, M., Crawford, J. and Dixson, J., 2004. Evaluating plan implementation: a conformance-based methodology. *Journal of the American Planning Association* 70 (4), pp. 471–480.
- Lee, E. and Perl, A., 2003. *The Integrity Gap: Canada's environmental policy and institutions*. UBC Press, Vancouver.
- Leung, P., 2009. *Best Practices Scan of Sustainability Decision-Making and Planning for the Municipal Sector*. The Natural Step of Canada, Ottawa.

- Lindstone, L., 2014. A content analysis of sustainability policies and plans from Starss-Rated Canadian higher education institutions. (MES thesis, Dalhousie University).
- MacKendrick, N.A. and Parkins, J.R., 2004. Frameworks for Assessing Community sustainability: A Synthesis of Current Research in British Columbia. Natural Resources Canada, Edmonton.
- Marbek Resource Consultants, 2008. Sustainable Community Planning in Canada: Status and Best Practices. Co-operative Research and Policy Services, Montreal.
- Markey, S., Connelly, S. and Roseland, M., 2010. Back of the envelope: pragmatic planning for sustainable rural community development. *Planning, Practice & Research* 25 (1), pp. 1–23.
- Masuda, J.R., Zupancic, T., Poland, B. and Cole, D.C., 2008. Environmental health and vulnerable populations in Canada: mapping an integrated equity-focused research agenda. *Canadian Geographer* 52 (4), pp. 427–450.
- McDonald, G.T., 1996. Planning as sustainable development. *Journal of Planning Education & Research* 15 (3), pp. 225–236.
- Miller, K., Bertels, S., Graves, S. and Purkis, J., 2011. Embedding Sustainability into the Culture of Municipal Government. Network for Business Sustainability, London.
- Næss, P., 2001. Urban planning and sustainable development. *European Planning Studies* 9 (4), pp. 503–524.
- Norton, R.K., 2005. Striking the balance between environmental and economy in coastal North Carolina. *Journal of Environmental Planning and Management* 48 (2), pp. 177–207.
- Obinger, H., Leibfried, S. and Castles, F.G. (Eds.), 2005. *Federalism and the Welfare State: New World and European Experiences*. Cambridge University Press, Cambridge.

Overstreet, K., 2016. Changing climate, static society? A survey of equity, justice and vulnerability in U.S. municipal climate plans. (MA Thesis, University of Kansas).

Prime Minister's Office [PMO], (2005). Integrated Community Sustainability Planning - A Background Paper. Planning for Sustainable Canadian Communities Roundtable, Ottawa.

Purkis, J., Seal, B. and Lindberg, C., 2012. Bridging the Gap in Community Sustainability Planning Implementation: Research Summary. The Natural Step, Ottawa.

Raphael, D. (Ed.), 2016. Social Determinants of Health: Canadian Perspectives. Canadian Scholars Press, Toronto.

Reimer, W., 2006. The rural context of community development in Canada. *Journal of Rural and Community Development* 1 (2): pp. 155–175.

Roseland, M., 2000. Sustainable community development: integrating environmental, economic, and social objectives. *Progress in Planning* 54 (2), pp. 73–132.

Roseland, M., 2012. *Towards Sustainable Communities: Solutions for Citizens and their Governments*. New Society Publishers, Gabriola Island.

Sayer, J.A. and Campbell, B.M., 2004. *The Science of Sustainable Development: Local Livelihoods and the Global Environment*. The Press Syndicate of the University of Cambridge, Cambridge.

Stuart, J., 2013. Planning for urban biodiversity. (MP Thesis, Queen's University).

Train, A.R., 2015. Short line railroads and municipal land use planning, policy and regulation. (M.R.P. Thesis, University of Massachusetts).

Van Assche, K., Deacon, L., Gruezmacher, M., Summers, R.J., Lavoie, S., Jones, K.E., Granzow, M., Hallstrom, L. and Parkins, J., 2016. *Boom and Bust: A Guide, Managing Ups and Downs in Communities*. University of Alberta, Edmonton.

van Fraassen, K.G., 2012. Evaluating citizen participation in sustainability planning: the story of Alberta. (MEd. Thesis, University of Calgary).

Vaughter, P., Wright, T. and Herbert, Y., 2015. 50 shades of green: an examination of sustainability policy on Canadian campuses. *The Canadian Journal of Higher Education* 45 (4), pp. 81–100.

von Korff, Y., Daniell, K.A., Moellenkamp, S., Bots, P. and Bijlsma, R.M., 2012. Implementing participatory water management: recent advances in theory, practice, and evaluation. *Ecology and Society* 17 (1), pp. 30.

Wheeler, S.M., 2013. *Planning for Sustainability: Creating Livable, Equitable and Ecological Communities*. Routledge, London.

Yigitcanlar, T. and Kamruzzaman, M.D., 2015. Planning, development and management of sustainable cities: a commentary from the Guest Editors. *Sustainability* 7 (11), pp. 14677–14688.

Table 1. Age, length, and authorship characteristics of sustainability plans by province.

Province	Age (years)	Length (pages)	Authorship by Consultants (%)
BC	4.8 ^{a,b}	85.9 ^{b,c}	56.9
AB	4.6 ^{a,b}	41.7 ^{a,b}	58.0
SK	4.2 ^{a,b}	32.5 ^a	23.9
MB	4.1 ^a	62.4 ^{a,b,c}	20.0
ON	5.9 ^{a,b}	85.9 ^{b,c}	78.2
QB	4.5 ^{a,b}	42.7 ^{a,b}	53.8
NB	4.7 ^{a,b}	62.0 ^{a,b,c}	50.0
NS	4.4 ^{a,b}	68.1 ^{a,b,c}	25.0
PEI	5.8 ^{a,b}	49.2 ^{a,b}	35.3
NL	4.1 ^a	54.0 ^{a,b,c}	51.1
YK	6.6 ^b	42.6 ^{a,b}	52.4
NWT	4.0 ^a	72.4 ^{a,b,c}	36.4
NU	3.8 ^a	100.8 ^c	75.0
Canada	4.6	58.8	48.8
n	807	861	739

^{a,b,c}Numbers with any of the same superscripts in the same column are not statistically different from each other.

Table 2. Percentage of ICSPs by plan type and by province.

Province	n	Integrated Community Sustainability Plan	Official Community Plan	Sustainability Plan	Strategic Plan	Action Plan	Other
BC	125	10.9	52.1	21.8	2.9	5.9	6.7
AB	166	31.5	0.6	58.2	4.2	0.0	5.5
SK	77	0	28.6	3.9	6.5	29.9	31.2
MB	68	0	1.4	5.8	7.2	4.3	81.2
ON	95	7.6	68.5	8.7	10.9	0	4.3
QB	17	0	0	52.9	17.6	11.8	17.6
NB	27	25.9	0	18.5	7.4	0	48.1
NS	40	87.5	0	0	0	0	12.5
PEI	19	35.3	58.8	5.9	0	0	0
NL	203	96.5	0	1.0	1.0	0	1.5
YK	22	100.0	0	0	0	0	0
NWT	11	90.9	0	9.1	0	0	0
NU	4	50.0	0	0	0	0	50.0
Canada	874	40.5	18.4	18.0	4.3	4.1	14.7
Length		55.4 ^{b,c}	86.1 ^d	63.4 ^c	27.1 ^a	36.2 ^{a,b}	43.6 ^{a,b,c}
Age		4.3 ^{a,b}	5.8 ^c	4.4 ^{a,b}	4.8 ^{b,c}	3.4 ^a	4.6 ^b
Population (2011)		3201 ^a	7253 ^{b,c}	6599 ^{b,c}	8791 ^c	2480 ^a	4500 ^{a,b}

^{a,b,c,d}Numbers with any of the same superscripts in the same row are not statistically different from each other.

Length: $F = 17.975$, $df = 5$, $p < 0.001$

Age: $F = 11.086$, $df = 5$, $p < 0.001$

Population: $F = 10.773$, $df = 5$, $p < 0.001$

Table 3. Sustainability emphasis of ICSPs by pillar and by province.

Province	n	Social Pillar	Economic Pillar	Cultural Pillar	Environmental Pillar	Governance Pillar
		\bar{x}	\bar{x}	\bar{x}	\bar{x}	\bar{x}
BC	125	2.4 ^{a,b,c}	2.6 ^{a,b}	1.3 ^{a,b,c}	2.6 ^{b,c,d}	1.2 ^{a,b,c}
AB	166	2.4 ^{b,c}	2.5 ^{a,b}	1.4 ^{a,b,c}	2.1 ^{a,b,c}	1.9 ^{b,c}
SK	77	2.1 ^{a,b,c}	2.1 ^{a,b}	0.8 ^{a,b,c}	1.9 ^{a,b}	2.0 ^c
MB	68	1.9 ^{a,b}	1.9 ^a	0.6 ^a	2.8 ^{c,d}	1.4 ^{a,b,c}
ON	95	1.6 ^a	2.3 ^{a,b}	1.4 ^{a,b,c}	2.6 ^{b,c,d}	0.9 ^a
QB	17	2.4 ^{a,b,c}	2.1 ^{a,b}	1.2 ^{a,b,c}	2.2 ^{a,b,c,d}	2.1 ^c
NB	27	2.4 ^{a,b,c}	2.7 ^b	0.8 ^{a,b,c}	2.6 ^{b,c,d}	1.3 ^{a,b,c}
NS	40	2.5 ^{b,c}	2.6 ^{a,b}	1.1 ^{a,b,c}	2.8 ^{c,d}	1.2 ^{a,b,c}
PEI	19	2.7 ^c	2.8 ^b	0.7 ^{a,b}	2.9 ^c	1.5 ^{a,b,c}
NL	203	2.4 ^{a,b,c}	2.5 ^{a,b}	1.6 ^c	2.3 ^{a,b,c,d}	2.0 ^c
YK	22	2.6 ^{b,c}	2.6 ^{a,b}	1.4 ^{a,b,c}	2.6 ^{b,c,d}	1.5 ^{a,b,c}
NWT	11	2.8 ^c	2.5 ^{a,b}	0.7 ^{a,b}	2.4 ^{a,b,c,d}	1.6 ^{a,b,c}
NU	4	2.8 ^c	2.3 ^{a,b}	1.5 ^{b,c}	1.8 ^a	1.0 ^{a,b}
Canada	874	2.3	2.4	1.3	2.4	1.6

^{a,b,c,d}Numbers with any of the same superscripts in the same column are not statistically different from each other.

Social: $F = 9.240$, $df = 12$, $p < 0.001$

Economic: $F = 5.870$, $df = 12$, $p < 0.001$

Cultural: $F = 11.129$, $df = 12$, $p < 0.001$

Environmental: $F = 10.403$, $df = 12$, $p < 0.001$

Governance: $F = 13.946$, $df = 12$, $p < 0.001$

Table 4. Sustainability emphasis of ICSPs by plan age and length.

Variable	n	Social Pillar	Economic Pillar	Cultural Pillar	Environmental Pillar	Governance Pillar
Plan age	808	-.10**	-.08*	-.02	-.04	-.12**
Plan length	862	.10**	.18**	.19**	.26**	-.01
Population	862	-.05	.03	-.01	.08*	.04

Pearson's two-tailed correlation: *significant at the 0.05 level; **significant at the 0.01 level.

Table 5. Sustainability emphasis of ICSPs by pillar and by Metropolitan Influence Zone (MIZ).

MIZ	N (%)	Social Pillar	Economic Pillar	Cultural Pillar	Environmental Pillar	Governance Pillar
		\bar{x}	\bar{x}	\bar{x}	\bar{x}	\bar{x}
1	98 (12%)	2.0 ^a	2.4	1.1	2.4 ^{a,b}	1.6
2	10 (1%)	2.7 ^{a,b}	2.4	1.3	2.3 ^{a,b}	1.4
3	86 (10%)	2.3 ^{a,b,c}	2.5	1.3	2.6 ^b	1.4
4	85 (10%)	2.3 ^{a,b,c}	2.4	1.3	2.3 ^{a,b}	1.7
5	223 (27%)	2.2 ^{a,b,c}	2.4	1.3	2.4 ^{a,b}	1.6
6	204 (25%)	2.4 ^{a,b,c}	2.5	1.3	2.4 ^{a,b}	1.6
7	89 (11%)	2.2 ^{a,b}	2.1	1.3	2.0 ^a	1.6
8	31 (4%)	2.7 ^{b,c}	2.5	1.2	2.4 ^{a,b}	1.5
Canada	826	2.3	2.4	1.3	2.4	1.6

^{a,b,c}Numbers with any of the same superscripts in the same column are not statistically different from each other.

Social: $F = 3.750$, $df = 7$, $p = 0.001$

Economic: $F = 3.0185$, $df = 7$, $p = 0.004$ (but post hoc tests showed no differences)

Cultural: $F = .544$, $df = 7$, $p = 0.853$

Environmental: $F = 2.777$, $df = 7$, $p = 0.007$ (but post hoc tests showed no differences)

Governance: $F = .841$, $df = 7$, $p = 0.553$

Table 6: Descriptive Statistics

Variable	N	Mean	Std.Dev	Min	Max
Age of Plan	808	4.6101	2.45712	1.00	34.00
Length	862	58.77	50.683	1	422
Type of Plan (coded)	862	3.50	2.771	1	9
Population	862	4962.31	7818.073	0	48196
Social Pillar	858	2.28	.846	0	3
Cultural Pillar	862	1.25	.906	0	3
Environmental Pillar	862	2.38	.848	0	3
Governance Pillar	861	1.59	1.005	0	3
Metropolitan Influence Zone (coded)					
Population, -100% data					
Land area in square kilometers,	860	2179.17	27511.406	0	465516
Total number of census families in private households -20% sample date	849	1495.88	2959.437	10	48275
Total number of persons aged 65 years and over -20% sample data	847	715.33	1577.391	0	29165
Owned	832	1586.66	3132.183	0	51760
Rented	832	469.01	1092.724	0	15225
English	847	4164.90	8482.733	0	136020
French	847	457.57	2622.699	0	36845
Non-migrants	832	357.81	935.534	0	17395
Canadian citizens under age 18	832	1145.44	2161.165	0	31125
Canadian citizens age 18 and over	832	3875.22	7643.271	0	123275
Employed	832	2604.50	5207.411	10	82005

ⁱ While somewhat arbitrary, this limit excludes spaces commonly identified as urban or metropolitan, while ensuring that small and extremely small communities are not marginalized. Given the absence of a formal definition of rural in Canada, and the reality that there are multiple definitions of “rural” in Canada, this definition provides not only a broad cross-section of municipalities across the country, but also the importance of new regionalism for many communities (where some communities have grown to become key service providers for a surrounding belt of much smaller communities). (Statistics Canada, for example, defines rural as a population of less than 10,000, but also defines cities as municipalities with populations of more than 10,000 (this is commonly reflected in provincial legislation as well). At the same, provincial policy may also functionally define rural by exception (thus, for example, rural programming in Alberta often applies to all 307 communities in the province with the exception of the larger cities of Edmonton (Population = 932,546), Calgary (Population = 1,239,220) and Red Deer (Population = 100, 418). By contrast, provinces in Atlantic Canada are commonly considered rural as provinces themselves, while each province also differs in how they define and engage with municipalities (Sancton 2008)