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Chapter title: Making the SDGs Relevant for Cities: Using the Community Capital Tool in British Columbia

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Abstract

In the past three decades, mounting scientific evidence on the planetary condition has been sending a clear message: the world needs to be on a more sustainable pathway, quickly. Yet effective action has been elusive, partly because the effort to address global challenges needs to start at the local level. The 2015 United Nations Sustainable Development Goals (SDGs) acknowledge the importance of localizing the global goals. The success of the SDGs is conditional on creating and implementing successful, monitorable, and transferable sustainability policies and practices in communities. In this chapter, we present our case studies with two municipalities in British Columbia, Canada, where we applied modified versions of the Community Capital Tool (CCT) and conducted a complex matching and mapping exercise to show the relationship between the SDGs, the CCT, and local goals in the municipalities. We also discuss the challenges and opportunities we identified with regard to achieving local sustainability goals and contributing to the SDGs. The B.C. municipal experience described here demonstrates that if Canadian cities incorporate tools such as the CCT into their regular practice, they can contribute to and become leaders in the achievement of Canada's Federal Sustainable Development Strategy, Canada's commitment to the SDGs.

Keywords

Sustainable Development Goals; sustainable communities; sustainability monitoring; Canada

1. Introduction

The scientific evidence on the Earth's deteriorating condition – and the urgency to respond with effective action – has been mounting for decades. The increased frequency of

extreme phenomena; the persistent poverty, increasing social and economic inequality, and inaccessibility to basic provisions; the decline of ecosystem services; and the unprecedented species extinction are some of the signs that the Earth may soon not be able to sustain the growth of human population and economic activity while maintaining systemic planetary well-being (Daly, 2005; Steffen et al., 2011).

From the 1987 UN World Commission on Environment and Development report "Our Common Future" (Brundtland), to the 1992 UN Conference on Environment and Development in Rio, then the 2002 Johannesburg World Summit on Sustainable Development, followed by the 2012 Rio+20 Earth Summit, then the 2015 Sustainable Development Goals (SDGs), the 2015 Paris Climate Accord, and most recently the 2017 New Urban Agenda, the message has been loud and clear: the world needs to be on a more sustainable pathway, quickly, if we are to have any hope of a sustainable future. Yet effective action, as well as political will, has been elusive. One reason for this is because these global challenges must be addressed at national and local levels.

In this chapter, we present our case studies with two municipalities in British Columbia, Canada, where we applied modified versions of the Community Capital Tool (or CCT, detailed below) and conducted a complex matching and mapping exercise to show the relationship between the SDGs, the CCT, and local goals in the municipalities. We also discuss the challenges and opportunities we identified with regard to achieving local sustainability goals and contributing to Canada's commitments towards the UN Global Goals.

2. Sustainable Development globally

The 1987 Brundtland Commission report noted the interconnectedness between human activity and environmental degradation: 26% of the world's population, living in developed countries, consumed 80-86% of non-renewable resources and 34-53% of food products (WCED, 1987). The increased frequency of extreme phenomena and the persistent social and ecological issues such as poverty and decline of ecosystem services have led a growing number of scholars to refer to the modern period as "the Anthropocene". This is defined as the era marked by the detrimental impact of human activity on the planet (Steffen et al., 2011). We no longer live in an "empty world" (empty of us and our waste), but rather in a "full" one (Daly, 2005), with significant implications and repercussions for current and future generations.

The necessity for limits to growth, initially expressed in the 1970s is now strongly supported by up-to-date research on planetary boundaries that have been exceeded, such as genetic diversity and climate change (Steffen et al., 2015; Hamstead & Quinn, 2005; Meadows,

Meadows, & Randers, 1992),. Current generations now have both the knowledge and the responsibility to lead humanity away from putting further pressure on the planet and toward a safer and more sustainable future (Rockström, 2009; Steffen et al., 2011).

In this spirit, in 2000, the UN Member States adopted the *Millennium Declaration* aspiring to eradicate extreme poverty and reduce inequalities, with a particular focus on developing countries; the Global North would mostly contribute to development aid and financing. The Millennium Development Goals (MDGs) were composed of 8 goals, 21 targets, and 60 indicators, and encouraged action by a broad range of stakeholders in an effort to address the multi-dimensional issue of extreme poverty by 2015.

Several of the goals were achieved in the 15-year period in the developing world, with notable decreases in extreme poverty, child and maternal mortality, and disease rates, and rising rates of primary school enrollment and of life expectancy (United Nations, 2015c). Severe problems however persisted in areas such as sub-Saharan Africa and South Asia, because of the extensive slums and limited access to fresh water, sanitation, and medicines. The MDGs were generally criticized as vague, disconnected from a whole-system view, difficult to measure (partly due to data insufficiency), and potentially causing further inequality in urban areas (Harcourt, 2005; Meth, 2013).

Building partly on the achievements of the MDGs but mainly acknowledging the continuing struggles in social, economic, and ecological systems around the world, the Sustainable Development Goals (SDGs) were unanimously and ceremoniously approved by the UN Member States in September 2015 (United Nations, 2015b). The UN 2030 Agenda for Sustainable Development, which includes the 17 Global Goals (SDGs) and 169 concrete targets, is a significant step forward and a turning point for global sustainability.

Despite the long consultation and negotiation process (more than three years), the initial promoters of an inclusive agenda (Colombia, Guatemala, Peru and United Arab Emirates) achieved their objective: that the SDGs address *sustainable* development, and not simply development (often confused with growth) like their predecessors, the MDGs (Dodds, Donoghue, & Leiva Roesch, 2017). The new goals offer a more integrated vision and plan for this millennium: they apply to both developed and developing nations; and they are grounded in a holistic, systemic view of sustainability (Woodbridge, 2015). The acknowledgement that the principal global challenges, this century (ecological integrity, social equity and cohesion, and economic prosperity), need to be addressed in a holistic way is also reflected in the 2015 UN Climate Change agreement (United Nations, 2015a) and in the UN New Urban Agenda (United Nations, 2017).

Achieving the 17 SDGs with their 169 targets and numerous associated indicators is a complex undertaking that must be addressed at numerous scales from global to local. In response, we have framed our research to focus on the full set of SDGs at the local scale as a way to address, monitor, and achieve the SDGs nationally and globally.

3. Developing and monitoring sustainable communities

Since the negotiations stage, people and organizations involved in the SDGs development process stressed the importance of localizing the global goals (Dodds et al., 2017). The success of the SDGs is conditional on creating and implementing successful, monitorable, and transferable sustainability policies and practices in communities. We posit that a predominantly bottom-up or "community-up" approach is crucial for the SDGs to gain wide traction, engage citizens and other stakeholders, and ultimately succeed in turning sustainability into the new modus operandi globally, within this century.

Developing sustainable communities

Our research is situated in the field of sustainable development in local communities, with particular focus on urban areas, which are projected to be home to at least 68% of the world's population by 2050 (UN DESA, 2018). For our research purposes, a community refers to "a group of people bound by geography and with a shared destiny, such as a municipality or a town", and is considered as a complex, adaptive, and interconnected system requiring interdisciplinary study (Uphoff, 2014; Roseland, 2012). An urban area is "a human settlement characterized – ecologically, economically, politically and culturally – by a significant infrastructural base; a high density of population, whether it be as denizens, working people, or transitory visitors; and what is perceived to be a large proportion of constructed surface area relative to the rest of the region"(James, 2015).

Cities occupy 3-4% of the world's land surface, use ~80% of resources, and discharge most global waste while being increasingly vulnerable to climate change and health challenges linked to high economic and environmental costs (Kanuri, Revi, Espey, & Kuhle, 2016; (Girardet, 2015). The latest global urbanization projections for 2050 and the accumulation of challenges in cities prove the urgency of developing local solutions to global (or "glocal") issues. Cities have enormous productivity potential in terms not only of economic and labor productivity (diverse and inclusive economy, fostering innovation), but also of social productivity (hubs of research, learning, and sharing) and ecological productivity (ecological function regeneration and efficient use of resources) (Roseland & Spiliotopoulou, 2017).

The full set of the SDGs is relevant to local communities even though the UN Global Agenda for 2030 includes a goal specifically for cities; goal 11 for inclusive, safe, resilient, and sustainable cities and human settlements (Kanie et al., 2014). Achieving long-term sustainability locally requires a focus on all goals, not just goal 11, in order for societal change through collaborative decision-making and community engagement to occur, as the principles of sustainable community development (SCD) so urge (Clarke, 2012; Hermans, Haarmann, & Dagevos, 2011). SCD is a holistic approach that integrates social, environmental, and economic considerations into the dynamic processes toward community sustainability, while providing for current and future generations (Berke & Conroy, 2000; Roseland, 2012).

SD and SCD have been influenced by a number of theories and have matured over the last few decades in academic, professional, and popular discourse. While SCD may be a fairly new paradigm for local development, it is rooted in such intellectual traditions of the previous two centuries as social ecology, bio-regionalism, native worldviews, ecological modernization, self-reliance, eco-localism, environmental justice, etc. (Roseland, 2000; Roseland & Spiliotopoulou, 2016). More recently, SCD has embraced strong sustainability principles which acknowledge the Earth's regenerative limits and the need for socio-ecological and economic resilience "across temporal and spatial scales" (Meerow, Newell, & Stults, 2016; (Daly, 2005; Rockström et al., 2009).

Under the strong sustainability model, social and ecological considerations are increasingly being included in community analysis and policy-making through collaborative and systemic processes. Several parallels can thus be drawn between this comprehensive paradigm for local development and the UN 2030 Agenda for Sustainable Development. These include the long-term and whole-systems perspective, the recognition of the dynamic nature of socio-ecological systems, and the potential to reveal opportunities for synergies and indirect positive impact among the various dimensions and goals for sustainability.

Monitoring sustainable communities

In pursuit of the balanced and integrated approach that SCD and the SDGs advocate, communities are challenged by the difficulties of addressing multiple objectives and monitoring their progress while setting priorities at a higher-level of decision-making. They face the complexity of sustainability goal-setting and the challenge of navigating the variety of local agendas grounded in diverse theoretical backgrounds or stakeholder interests (Roseland & Spiliotopoulou, 2017). They also need to meaningfully engage citizens in a broad range of decision-making processes and collect data efficiently and consistently to allow for effective

progress monitoring and assessment (Caprotti et al., 2017; Moreno Pires, Magee, & Holden, 2017).

One way to address these challenges is by adopting sustainability planning and assessment frameworks and tools that inform and mobilize citizens and their governments. The assessment of plans through sustainability frameworks is considered an effective tool that follows implementation in order to gauge success and measure performance in ecological, social, and economic terms (Roseland, 2012). Despite the abundance of tools and agendas, not all of them promote a whole-systems approach or assist in concrete implementation and effective monitoring (Joss et al., 2015). Successful SCD monitoring and assessment entails tackling issues such as stakeholder engagement, place-specific context, political credibility, and adoption of a shared and practical vision.

The research foundation of the pilot projects we present here is the Community Capital Framework (CCF). Its purpose is to support decision-making not only as a planning toolkit but also as a performance and progress assessment instrument. The CCF has been designed with a systems thinking perspective: each form of community capital is a sub-system of the larger whole community system. Since the early 2000s, we have used the CCF in various communities (big, small, rural, urban, developed, developing) around the world with success (e.g. in North America, Latin America, and Eastern Europe).

Built upon the CCF, the Community Capital Tool (CCT) is an SCD monitoring and assessment tool and the product of collaboration between the Centre for Sustainable Development at Simon Fraser University in Canada, with Telos, the Brabant Center for Sustainable Development, Tilburg University, Netherlands (Roseland, 2012). In this context, the term “Community Capital” includes natural, physical, economic, human, social, and cultural forms of capital (see also figure 1 below) (Roseland, 2012):

1. *Natural Capital:* Living within ecological limits, conserving and enhancing natural resources, using them sustainably, using cleaner production methods, and minimizing waste.
2. *Physical Capital:* Community assets such as public facilities, water and sanitation provision, efficient transport, diverse housing, adequate infrastructure, and telecommunications.
3. *Economic Capital:* Circulating money within a community, producing locally, trading fairly, and developing community financial institutions.

4. *Human Capital:* Focus on health (including food, shelter, and safety), education, family and community cohesion, and enhanced training and improved workplace dynamics.
5. *Social Capital:* Effective and representative local governance, participatory planning, access to information, capacity-building, safety, and collaboration and partnerships.
6. *Cultural Capital:* Attention to traditions and values, heritage and place, the arts, diversity, and local history.

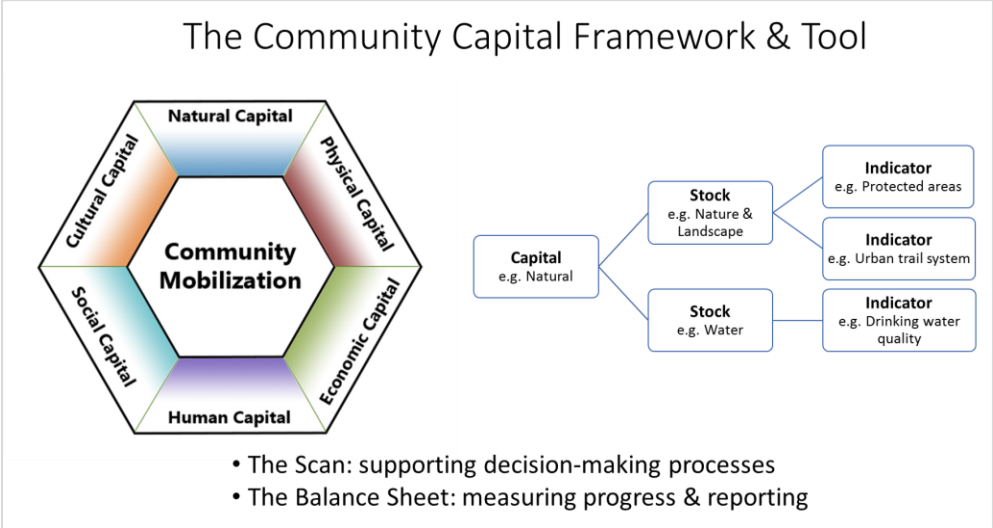

Figure 1. Community Capital: A Framework and Tool for Sustainable Community Development. Adapted from: Roseland, 2012.

The Tool's six capitals are broken down into a set of smaller stocks (or categories) used to measure capital capacity and sustainability progress. These stocks are universal and were chosen based on their ability to accurately represent the health of each capital. Within each stock is a set of requirements that are adaptable to the local context, needs, and priorities of the community or the context of the specific initiative being measured. Lastly, the status of each requirement is 'indicated' by one or more specific, measurable indicators. The CCT then shows the final results as graphics that report on the health of each capital account and each of their constituent stocks.

Community leaders, planners and citizens can use this information to compare the current sustainability status of their community with past results and potentially with other comparable communities. The CCT was designed based on strong sustainability principles that advocate for the preservation of adequate amounts of all natural assets while avoiding terminal damage to critical natural assets and consciously seeking to address key social issues. It

focuses on community-specific issues in a way that recognizes each community's regional and global impact on the environment and on society at large. The CCT is intended to incorporate the democratic input of citizens in terms of values and priorities, and provides planners and decision-makers with a tool that helps them ensure that these values and priorities are reflected in policy decisions (Roseland, 2012).

In the case studies presented here, we also consulted several other sustainability assessment frameworks. These frameworks contributed to our improved understanding of this field and played an important role in shaping the CCT for the two municipalities we worked with (see more details in the next section). These sustainability frameworks are (in no particular order): the UN Sustainable Development Goals, STAR Communities (recently merged with LEED for Cities), One Planet Living (or Eco Communities), ISO 37120, Community Foundations of Canada Vital Signs, Green City Index, Living Community Challenge, the EU Reference Framework for Sustainable Cities, LEED-ND and LEED for Cities, EcoDistricts, the International Eco-City framework and standards, and the City Resilience Index.

With regard to the SDGs in particular, we were able to demonstrate through our case studies that the CCT is very much aligned with the SDG framework. As we will explain in detail below, the CCT is structured in a similar way to the SDGs – they both have three levels of forward-looking decision-making (goals, targets, and indicators) – and their indicators overlap by more than 50%.

4. Research methodology and context

In this research, we engaged a mixed-methods, information-oriented approach within case study research, integrating quantitative and qualitative data collection and analysis techniques and tools (van Kerkhoff, 2014; Yin, 2014). For reasons of funding[1] and focus, we decided to work with two communities in the Lower Mainland of British Columbia: the City of Maple Ridge and the District of North Vancouver. Whereas some communities may see the SDGs as either irrelevant to or in conflict with local priorities, we partnered with two cities that approached us[2] and demonstrated interest in participating in our research in order to enhance their sustainability planning and performance assessment processes, while exploring common ground with the SDGs.

[1] Please refer to the end of this chapter for a disclosure statement regarding the funding for this project.
[2] We were approached by and collaborated with the Community Planning Department in The District of North Vancouver and the Sustainability and Corporate Planning Department in the City of Maple Ridge.

The main objective of this research was to help the two municipalities (figure 2) achieve their stated visions by providing them with a sustainability assessment framework that would be relevant to their needs and values, while connecting them to a broader context. The customized integrated framework would support City Council, staff, citizens, and other community stakeholders in effectively identifying community needs, allocating funds, implementing policies and programs, and measuring results, from a long term perspective.

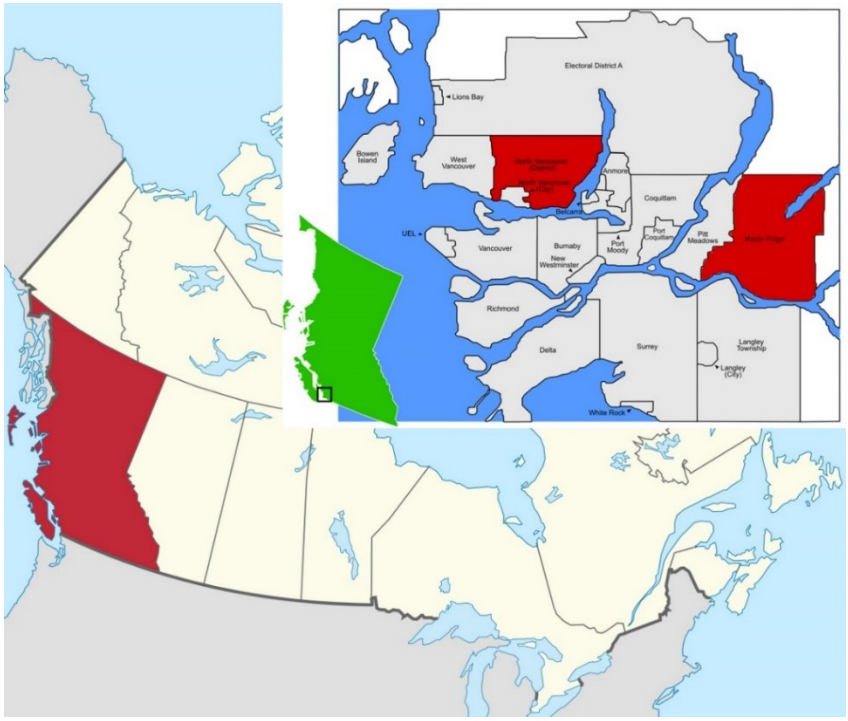

Figure 2, showing the province of British Columbia and, in the inset, our two case study municipalities. Images by TUBS / CC BY-SA 2.5, and by TastyCakes / CC BY 3.0.

Case studies context - The District of North Vancouver (DNV)

As one of three municipalities on the North Shore of Metro Vancouver, the District of North Vancouver (DNV) shares key infrastructure (roads and utilities) and in some cases partners in the delivery of services (recreation and emergency services). Its natural assets define the local lifestyle and values, and the industrial waterfront, a strategic national asset, provides significant business opportunities and local jobs. A growing community with two First Nations reserves, the District considers collaborative planning essential to the achievement of its long-term goals.

The DNV Official Community Plan (OCP)[3], titled "Identity 2030", presents the DNV's vision for an "inclusive and supportive community that celebrates its rich heritage and lives in harmony with nature" and that has a "network of well designed and livable centres" and "resilient and diverse" local businesses (District of North Vancouver, 2011). Our project with the District was carried out in 2018 and aimed to help achieve this vision by adding to the monitoring and reporting work of the Community Planning Department and the Official Community Plan Implementation Monitoring Committee 2017-2018. Our other objective, inspired by how cities like San Jose and Baltimore localized the SDGs, was to compare the District's goals and indicators to the SDGs and their targets and indicators and to make recommendations on how to address gaps identified.

Case studies context - The City of Maple Ridge (CMR)

Located 45 kilometers east of Vancouver, Maple Ridge is a family-oriented community and one of the fastest growing cities in Metro Vancouver. It has a vibrant local economy and the most affordable industrial land and real estate in the region. It is committed to becoming a sustainable community by considering the environmental, social, and economic impacts of its actions for present and future generations. The City of Maple Ridge (CMR) Official Community Plan lays out the city's long-term vision for a "vibrant and prosperous [community, with] a strong local economy, stable and special neighbourhoods, thoughtful development, a diversity of agriculture, and respect for the built and natural environment" (City of Maple Ridge, 2014).

As with our other case study, the main objective of the Maple Ridge project carried out in 2017 was to help the City achieve this vision by assessing current sustainability and providing the City and its citizens with a customized sustainability assessment framework. Although the City of Maple Ridge did not at the time explicitly express interest in aligning their goals with the SDGs or taking advantage of the SDG framework in a specific way, we nevertheless used the SDG framework in the project reported in this chapter.

Research methodology

Within a mixed-methods approach, we started working on the case studies by examining the related literature and particularly exploring the current arena of sustainability frameworks, tools, and best practices. We reviewed a significant number of sustainability monitoring and assessment frameworks worldwide as well as initiatives and best practices for planning and

[3] Under British Columbia's Local Government Act, municipalities and regional districts are encouraged to develop an Official Community Plan (OCP) that provides a long-term vision for the community. An OCP is "a statement of objectives and policies that guide decisions on municipal and regional district planning and land use management." (Province of British Columbia, n.d.)

assessment in other communities in Canada and beyond. As mentioned above, the SDGs and other frameworks and tools helped inform the adjustment of the Community Capital Tool for the two case studies.

We then studied the socio-economic, environmental, political, and cultural context in the City of Maple Ridge (CMR) and the District of North Vancouver (DNV), and collected some quantitative data to evaluate the capacity of each city to source reliable and timely sustainability data and to establish an initial picture of their current sustainability situation. This quantitative data was retrieved from various archival sources and was measured against specific set goals and targets found in policy and other community plans and documents. Sources included Statistics Canada, BC Stats (provincial statistics authority), BC Assessment (provincial authority for property assessment), BC Hydro (provincial electricity utility), local health authorities, and CMR or DNV databases.

In parallel, we conducted a complex SDG-CCT-Local Goals matching and mapping exercise, modeled on the work done in San Jose, New York, and Baltimore within the USA Sustainable Cities Initiative (USA-SCI), under the guidance of the Sustainable Development Solutions Network (SDSN) (Nixon, 2016; Prakash et al., 2017). As shown in figure 3, the mapping extended along three levels of decision-making within three frameworks: we compared the goals, targets and indicators of the SDGs, the CCT, and the two case studies[4].

For the SDG mapping task, we followed the first two steps of the process described by Ruckstuhl, Espey, & Rae (2018) and the steps in Mesa, Edquist, & Espey (2019), although we conducted this work before these documents were made available. Step 1 was policy and target mapping and step 2 was identifying appropriate metrics and data sources. Our overall objective was to assess existing policy goals and targets, identify gaps and needs, and offer customized policy and metrics recommendations that would help align local and global goals. It is this part of the research project that is presented in this chapter in detail.

We first studied the official community plans and other major policy and strategy documents to locate local goals and targets and identify core values and principles. To complete this first step, we compared local goals and targets with the SDGs and their targets and with the CCT capitals and stocks. We excluded SDG 17 on Global Partnerships as not applicable at the local level and context. We then compiled lists of existing sustainability and other performance indicators in the two cities and compared them with the CCT and the SDG indicators.

[4] An SFU Master of Resource Management Planning student, Daniel Ross, was also involved in this part of the DNV project (Ross, 2018).

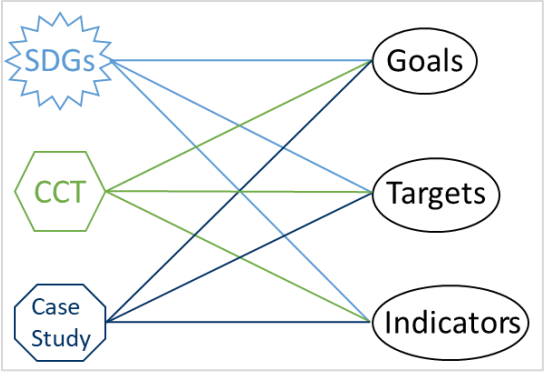

Figure 3. The extensive mapping of the two cities' goals, targets and indicators with the SDGs and the CCT. The shape of the SDG and the CCT frameworks reflects the number of goals (or capitals) included in each, excluding SDG 17 on global partnerships.

In addition, we collected qualitative data through interviews, meetings, and workshops with key stakeholders in both municipalities. We engaged elected officials (Councillors), appointed officials (city senior management and expert staff), and community members through the North Shore Community Foundation and the Maple Ridge Community Foundation[5].

A series of meetings with key staff provided us with valuable perspectives on various aspects of localizing sustainability indicators; we met with departments such as Community Planning, Parks, Public Works, Economic Development, Information Technology, Engineering, and Emergency Services (Fire and Police). Through these meetings, the subject-matter experts largely contributed to our understanding of indicator contextual meaningfulness, policy jurisdiction, data availability, data sources, existing targets, municipal capacity, etc.

In the DNV, we also engaged with the 2017-2018 Official Community Plan Implementation Monitoring Committee (OCP IMC) which is composed of community members and whose purpose is to provide comments on OCP implementation (consistency of vision, goals, and actions), monitoring (ensuring meaningful and appropriate indicators), and communication with the public.

In total, we conducted 14 interviews in the DNV and 16 in the City of Maple Ridge, we consulted more than 20 subject-matter expert staff in each municipality, and we engaged more than 40 community members in workshops with the two community foundations and the OCP IMC. Thanks to this inclusive participatory process, we had the opportunity to explore and identify perceptions of community stakeholders on needs and gaps, and document their

[5] Community foundations manage private endowments to provide local projects with funding for initiatives that benefit the community

preferences and ideas regarding the linkages between global and local sustainable development, assessment tools, and visions for the future; we also received their direct feedback for our work on sustainability frameworks. Figure 4 illustrates the methodological model of the participatory process used in in both case studies.

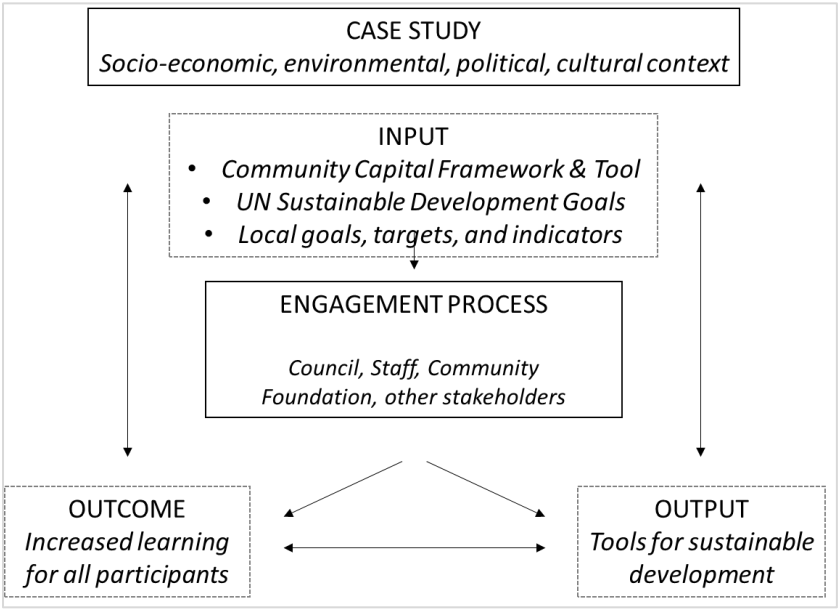

Figure 4. Contextual and methodological model of participatory process, adapted from Hermans, Haarmann, & Dagevos, 2011.

5. Research findings

In our case studies in the Greater Vancouver area, we applied sustainability assessment methods and tools to support the DNV and the City of Maple Ridge increase their sustainability potential and identify synergies with the SDGs. This section presents, firstly, the research findings from the mapping of local goals, targets, and indicators with the SDG framework and the Community Capital Framework and Tool, and, secondly, our findings from analysing the interviews with focus on connections between global and local agendas.

Goals, targets, and indicators mapping

Following the examples of New York, San Jose, and Baltimore, we performed a complex mapping and alignment exercise in the DNV and in the CMR (Nixon, 2016; Prakash et al., 2017). We compared the higher-level goals of both cities with the SDGs, their targets (or "stocks" in the case of the CCT) with the SDG targets, and their – at the time current – indicators with the SDG and the CCT indicators.

With regard to the DNV, through this work we observed that the 8 major goals or objectives in the DNV's Official Community Plan were aligned with 7 SDGs fully or quite

extensively, as well as with all 6 capitals of the CCT. Emphasis in the DNV is mostly placed on issues of economic growth and well-being, protection of the natural environment, affordability, food security, and education infrastructure investment. As shown in table 1, SDGs 3, 8, 9, 10, 11, 14, and 15 were fully covered by the DNV's goals; SDGs 1, 2, 4, 6, and 13 were partly covered; and for some SDGs (5, 7, 12, and 16) there was no explicit mention in the DNV OCP goals. SDG 17 was considered not applicable. Given the OCP's objective to guide the DNV toward a "Sustainable Future" by 2030, the wide alignment between local and global goals seems to indicate that sustainability principles and aspirations are important to the DNV and its citizens.

In CMR, our findings were somewhat similar to those in DNV. The Maple Ridge OCP includes a long-term vision statement and 45 principles that were approved following extensive citizen and stakeholder consultation. The OCP and other major policy documents mostly emphasize SDGs 2, 8, 11, and 15, while being partly aligned with SDGs 3, 4, 6, 13, and 16 (table 1). The CMR mapping analysis demonstrated a specific focus on food security, education infrastructure investment, and making the city resilient in preparation for climate change impacts. Unlike the DNV goal alignment though, it is clear that the higher-level goals in Maple Ridge are not aligned with SDGs that promote innovation and industrial – or generally economic – infrastructure and action for inequalities reduction. It makes sense however that the CMR has not placed importance on goals or targets related to SDG 14 (Life below water), since Maple Ridge is not by the ocean and therefore ocean and marine life protection are not within the city's priorities.

SDG	DNV Goal alignment	CMR Goal alignment
1: No Poverty	Indirect match / Partly aligned (affordability & well-being)	No match / Not aligned
2: Zero Hunger	Indirect match / Partly aligned (food security)	Direct match / Fully aligned
3: Good Health and Well-being	Direct match / Fully aligned	Indirect match / Partly aligned (social services)
4: Quality Education	Indirect match / Partly aligned (education infrastructure)	Indirect match / Partly aligned (education infrastructure)
5: Gender Equality	No match / Not aligned	No match / Not aligned
6: Clean Water and Sanitation	Indirect match / Partly aligned (stormwater management)	Indirect match / Partly aligned (sensitive area protection)
7: Affordable and Clean Energy	No match / Not aligned	No match / Not aligned

8: Decent Work and Economic Growth	Direct match / Fully aligned	Direct match / Fully aligned
9: Industry, Innovation and Infrastructure	Direct match / Fully aligned	No match / Not aligned
10: Reduced Inequality	Direct match / Fully aligned	No match / Not aligned
11: Sustainable Cities and Communities	Direct match / Fully aligned	Direct match / Fully aligned
12: Responsible Consumption and Production	No match / Not aligned	No match / Not aligned
13: Climate Action	Indirect match / Partly aligned (GHGs & renewable energy)	Indirect match / Partly aligned (various related objectives)
14: Life Below Water	Direct match / Fully aligned	No match / Not aligned
15: Life on Land	Direct match / Fully aligned	Direct match / Fully aligned
16: Peace and Justice Strong Institutions	No match / Not aligned	Indirect match / Partly aligned (inclusiveness)
17: Partnerships to achieve the Goals	Not applicable	Not applicable

Table 1. Level of alignment between the SDGs and the higher-level goals of the District of North Vancouver and those of the City of Maple Ridge. Red color shows no alignment, orange shows indirect or partial alignment, and green shows direct or full alignment.

At the target level, we found out that although the DNV's higher-level policy documents contained a lot of recommendations and broad statements for the future, very few seemed to correspond to actionable, measurable targets. We identified 20 targets in the DNV OCP and other major policy documents, such as the Transportation Plan, the Parks and Open Spaces Strategic Plan, the Rental and Affordable Housing Strategy, the Climate Change Adaptation Strategy, and the Integrated Stormwater Management Strategy. These 20 targets corresponded to 18 (out of 169) SDG targets that are related to SDGs 1, 2, 3, 6, 8, 9, 10, and 11. In CMR, the picture is similar: we identified 10 targets in the OCP, the Parks, Recreation and Culture Plan, and the Environmental Management Strategy. These 10 targets correspond to only 5 SDG targets which are part of SDGs 6, 11, and 12.

Despite the partial alignment at the goals level, the result from the indicators mapping was different, as shown in figure 5. DNV's 26 indicators monitor progress of OCP goal implementation and range from urban growth management and park/open spaces to economic development, transportation, and climate action (District of North Vancouver, 2011). These 26

indicators covered only 11.9% of the SDG indicators. We excluded 115 SDG indicators that were deemed not applicable in the District context since the SDG framework is mainly oriented towards countries. However, even after excluding those 115 SDG indicators, DNV indicators still covered only 25% of the remaining SDG indicators that were applicable. In contrast, the CCT indicators pool overlaps with the SDG indicators by more than 53%.

The City of Maple Ridge indicators mapping, on the other hand, is consistent with DNV results. CMR measures progress and performance across 69 indicators[6] ranging from energy efficiency and transportation safety and accessibility to municipal finances and emergency services efficiency (City of Maple Ridge, n.d.). There is a 15.5% overlap between CMR and SDG indicators if we take all 219 SDG indicators into consideration, but the overlap percentage increases to 32.7% if we do not include the 115 SDG indicators that we considered not relevant or applicable in the CMR context (figure 5).

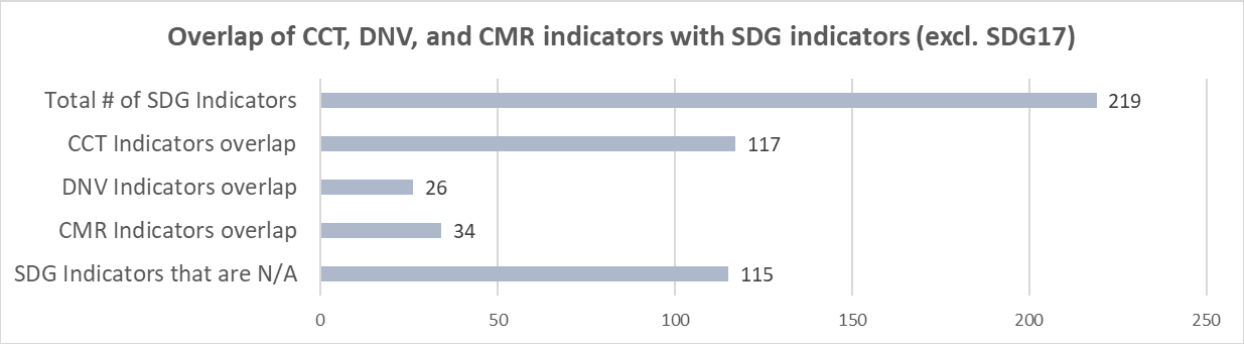

Figure 5 demonstrates the extent to which existing indicators in DNV, CMR, and CCT overlap with and address SDG indicators (excluding SDG 17 on global partnerships and showing the 115 SDGs that were considered as “not applicable”).

Interview findings

The interviews analysis through the SDG lens involved two sets of data: (1) mixed quantitative and qualitative data in response to a question on SDG awareness and familiarity, and (2) entirely qualitative data in response to the open-ended question on perceptions of impact of the SDGs on local decision-making and other perceptions regarding glocal-local connections.

. The majority of those interviewed were either not aware of the existence of the SDGs (50% of interviewees) or could vaguely recall having heard of them (30% of interviewees) (figure 6).

[6] The City of Maple Ridge calls its indicators “scorecards”.

Most responses were a simple “yes” or “no” but some contained additional comments. Particularly the interviewees recalling the SDGs “vaguely” or “slightly” commented that they could not cite the SDGs or that they did not have “in-depth awareness” and they were not really familiar with the details of the UN Agenda for Sustainable Development.

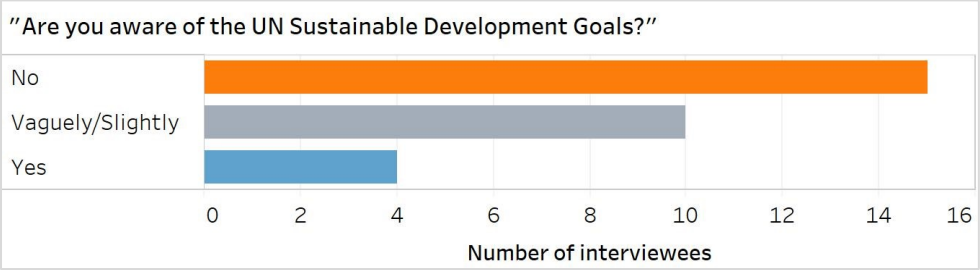

Figure 6. Number of interviewees responding “yes”, “no”, or “vaguely / slightly” when asked about their own awareness of the UN SDGs.

Responses to the second question on perceptions of SDG impact on local decision-making and on other linkages between the global and local levels yielded an extensive amount of qualitative data. A common view amongst interviewees was that any global goals or international commitments would probably not have a high influence on local politics and processes. While talking about this viewpoint, some interviewees attributed it to the perception that global agendas are disconnected from the local context and local beliefs, and thus cannot be taken into consideration in local policy-making.

Overall, three broad themes – or rather problems – emerged from the analysis of the 30 interviews as far as the potential for SDG impact is concerned: the difficulty of ensuring widespread awareness and education on non-local matters; the issues caused by a complex public administration system involving multiple and interdependent levels of government; and the lack of accountability due to the usually non-binding nature of international agreements.

Regarding awareness and education about the global goals and their impact, we identified a number of issues. Firstly, a few participants seemed to confuse the SDGs with other intergovernmental treaties or declarations, for instance with the Paris climate agreement or other United Nations reports or protocols. Also, some participants who admitted not being familiar with the SDGs argued that international goals and agreements are in conflict with local goals and priorities. One interviewee mentioned that asking local governments who face serious problems (hunger, poverty, lack of clean water) to think or act globally can be perceived as distraction. That said, several participants felt that it was strange that they did not know of the

SDGs although they had at some point been involved in sustainability projects or in international processes.

The second recurrent theme in the interviews was the position that the complexity of local decision-making processes is a crucial factor for the local governments not embracing the SDGs. Most interviewees talked about the challenges that accompany this complexity and the limited jurisdiction of local governments in Canada or, particularly in B.C., the lack of local jurisdiction in some matters. These participants mainly referred to the constant struggle of local governments to secure funding from higher-level jurisdictions and the limited mandate local governments are given from provincial or federal legislation especially when it comes to important issues such as education, transportation, energy, and – to some extent – housing. Two interviewees concluded their argument on the difficulties of the multiple levels of government by describing local governments as "creatures of the province"[7].

A third SDG-related theme that surfaced throughout the interviews concerned the (usually low) level of accountability or obligation that is attached to the SDGs – or any other international agreements for that matter. The majority of interviewees expressed the belief that local governments are removed or distanced from the obligation the federal government has to achieve the SDGs and report on them by 2030. Some pointed out that local governments feel that they are more accountable to their citizens than to any national or international organizations.

At least a quarter of the participants considered the SDGs, the Paris climate agreement, and other international agreements as purely "aspirational". Some argued that setting global or local goals can be beneficial but it is inadequate when implementation is accompanied by little or no accountability. Lack of accountability in this case means that municipalities have no legal obligation, they may receive no mandate or funding to achieve the goals, and therefore they do not face any real consequences if goals are not met.

On a more positive note it is worth highlighting that about one third of participants were explicitly in favor of embracing national or global goals and ensuring their increased impact on local decision-making. They suggested that local governments should try to align more with global goals which can provide some framework and foster connection to a wider – national and even global – context. In a few interviews it was stated that the SDGs can present an opportunity for local governments to receive funding and other resources to achieve their local community goals. Similarly, it was argued that high-level goals such as the SDGs can help

[7] This is indeed the case in B.C. Unlike in the US for example, local governments in Canada are in fact and in law "creatures of the province" they are located in.

inform local decision-making and action, mainly by pointing to best practices and opportunities for learning.

Overall, our research findings indicate that there is low awareness around the UN Agenda for Sustainable Development and that recognition of the significance of the SDGs at the local level is progressing at a slow pace. The SDGs and other international agreements, despite being non-binding, present some opportunities that are being slowly acknowledged in Canadian communities, often by municipal staff at first and then by elected officials who in general may not be that immersed in international developments. As one interviewee concisely put it, municipalities are not likely to be "driven" by the SDGs or compelled to achieve them, but perhaps may use them if they need support to achieve their local goals.

6. Generalizations

For this study we performed a complex SDG-Local Goals mapping exercise, similar to those undertaken in New York, San Jose, and Baltimore, and compared the goals, targets, and indicators of the SDGs, the municipalities, and our own Community Capital Tool. We also documented policy gaps and stakeholder perceptions, and asked whether global agendas influence local decision-making.

Mapping the CMR and DNV OCPs and other master plans with the SDGs and the CCT was not an easy task because of the multiplicity of official documents in the two municipalities: official community plans, various sectoral plans, business plans, community sustainability plans, climate action plans, etc. Some high-level policy documents overlapped, whereas in some cases the OCP predated newer plans and this resulted in goal and target tracking difficulties and occasional inconsistencies (Ross, 2018). This mapping task however revealed significant gaps in policies and objectives in both case studies, such as low consideration of wider national or global context, fragmented prioritization in policy-making and implementation, and little attention to whole-systems integrated thinking.

The interview data offered similarly important insights, particularly into the perceptions of local elected and appointed officials about global-level goals and international commitments. What seems as a simultaneously interconnected and distanced relationship between the multiple levels of government in B.C. provides a telling argument for the lack of interest or comprehension of the UN global agenda. The analysis also revealed a misconception that “localizing the SDGs” absolutely requires full awareness, or even in-depth understanding, of global issues and problems in other parts of the world.

A viewpoint expressed by some interviewees is that the SDGs could be an opportunity for local governments to receive funding and other resources from higher levels of government and could offer an engaging way of approaching the potential of the SDGs. The SDGs could help initiate change at the local level even if they are perceived as an intermediate means to achieve a community's overarching goal, i.e. high quality of life and well-being for its citizens.

These findings are a strong indication of the imperative to inform and educate local governments and their citizens about the SDGs so that the latter hold the former accountable for local, national, and global commitments. Thanks to their versatile structure, the SDGs can equip communities with a broad and holistic framework for all levels of decision-making, from identifying core values, setting goals, and forming partnerships to inclusive implementation and assessment (Mesa et al., 2019).

7. Recommendations

In accordance with the above findings, our recommendations to both municipalities revolved around a customized comprehensive framework with a set of forward-looking and holistic-thinking indicators based on the SDGs and our research with the CCT. As mentioned above, the CCT conceptualizes communities as place-oriented, scalable, dynamic systems, and is rooted in a framework that considers effects on six mutually-reinforcing forms of capital: natural, physical, economic, human, social, and cultural. The Tool includes two complementary instruments: (1) the Community Capital Scan, a dialogue- and decision-support tool, and (2) the Community Capital Balance Sheet, a more rigorous quantitative assessment tool. Both are grounded in a whole-systems, integrated thinking and are structured in a very similar way to the SDGs.

The integration of the adapted version of the CCT in the two B.C. cities' decision-making processes can significantly help them achieve their sustainability goals while becoming ambassadors for SDG implementation in Canada and beyond. The Tool is a good fit to help localize the SDGs in all stages of the decision-making and monitoring process using a contextually-relevant approach: firstly by expanding awareness about the global goals and increasing stakeholder participation, transparency, and perception of accountability; then by facilitating long-term goals setting and development of detailed, short-term implementation actions; and finally by supporting a locally-focused but globally-looking process of monitoring progress, reporting, and evaluating.

To mobilize action toward implementing and monitoring the SDGs locally, the CCT can help local officials and citizens align their goals with each other and with the full set of the SDGs

while achieving effective synergies and efficiencies between goals and actions. The CCT can offer the policy roadmap and the data and visualization platform required to plan for sustainability, monitor progress, and operationalize the SDGs in the holistic and systemic spirit the SDGs themselves promote.

The B.C. municipal experience described here demonstrates that if Canadian cities incorporate tools such as the CCT into their regular practice, they can contribute to and become leaders in the achievement of Canada's Federal Sustainable Development Strategy which reflects Canada's commitment to the SDGs (Roseland & Spiliotopoulou, 2018). We have every reason to expect that tools and approaches such as the CCT could work as well in other countries. Given the scale of the global sustainability challenges before us, developing these scalable and integrated local solutions may indeed provide a much-needed reason for hope.

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[8] Mitacs is a national, not-for-profit organization that builds partnerships to support research and training for industrial and social innovation in Canada. Mitacs Accelerate supports the development of research projects that benefit both graduate students or post-docs and partner organizations. For more information: https://www.mitacs.ca/en/programs/accelerate.

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