

## From Missions to Indicators: An Analysis of University Contributions to the SDGs within Institutional Strategic Plans

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### Abstract

*This paper aims to enhance understanding of how universities contribute to sustainable development by examining which components of their strategic plans (SPs) contain segments identified as contributing to the Sustainable Development Goals (SDGs), following the framework developed by Di Nauta et al. (2020). It was found that SDG contributions appear predominantly in the missions, visions, strategies and objectives of the plans, and were less present in the values, means, indicators and targets. SDGs that touch on the themes related to university's triple mission of teaching, research and external engagement were predominant over those that do not. These results support the findings of a lack of transformative engagement for SD in the SPs of Canadian HEIs, as identified by previous studies.*

**Keywords:** Higher education governance; sustainable development; strategic planning

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### 1. Research Problem and Objective

Canada has dedicated itself to sustainable development (SD), particularly to the Sustainable Development Goals (SDGs), through the creation of its SDG Unit and a national strategy to contribute to the goals' achievement (Government of Canada, 2021). Ketlhoilwe et al. (2020) highlight that where national plans to achieve the SDGs exist, like in Canada, universities can contribute by identifying their impact on the SDGs and on the national strategic plan (SP) to reinforce support for intersectoral collaboration. Despite an uptick in adoption of the SDGs by Canadian universities, not all universities are measuring or reporting on their contributions to the SDGs and a national portrait of university contributions to the goals does not exist.

Universities can contribute to the SDGs through the core activities linked to their triple mission: teaching and learning, research, and contribution to society through external engagement. This contribution depends in part on an engagement at the highest level of university governance and

the use of governance tools, such as plans, policies, and procedures, to integrate SD into the university's core activities. These documents offer an overall snapshot of the state of the university and its desired future state at a given point in time, designed as accountability and communication tools towards stakeholders both internal and external to the university. For authors interested in sustainability in higher education, these documents are seen as a reflection of the level of commitment and actions undertaken by the universities in their transition to SD (Bieler & McKenzie, 2017; Lozano et al., 2015). As Leal Filho et al. (2021) point out, "[i]t is believed that through a concerted institutional agenda, universities may not only make the SDGs central to their strategic institutional frameworks but also mobilize civil society and hence contribute to great visibility of the SDGs among their broad audiences and networks" (p. 27).

An 8-year "Canadian landscape analysis" found that Canadian universities engage shallowly with sustainability, and unevenly across their core activities (Bieler & McKenzie, 2017; Vaughter et al., 2016). Jorge et al. (2015) call for more research on sustainability uptake in strategic planning in higher education to better understand how universities engage with sustainability in their national and institutional contexts. Byrne, Savard & Larouche (in press) analyzed the SPs of 108 Canadian universities and identified segments associated with each SDG across all university core activities, to varying frequencies. However, this portrait does not allow a better understanding of the depth of the engagement of the universities studied. This paper aims to enhance understanding of how universities contribute to the SDGs by examining which components of their SPs contain segments identified as contributing to the SDGs. The strategic planning components are described in more detail in the conceptual framework section. There are two questions driving the analysis: (1) Where do SDG contributions appear throughout the SPs? and (2) What are individual SDG contributions' distribution across the SP components?

## **2. Conceptual framework**

### **2.1. Strategic planning in higher education**

Strategic planning is "a formal and rational process through which universities (re-) define their mission (what and for whom they stand for), elaborate their vision (what ambitions they have), their values (how they operate), define roles and allocate resources, design implementation, indicate how achievements will be assessed, as well as mechanisms for adaptation" (Fumasoli, 2018, p. 2587). SPs usually include: 1. A description of the mission, the values and a vision; 2. Strategic orientations; 3. The objectives and interventions selected; 4. the targeted results; and 5. The performance indicators used to measure the achievement of the targeted results (Larouche et al., in press). To facilitate understanding, terms often used interchangeably between university plans were regrouped into "strategies" and "objectives". Strategies (strategies, axes, priorities and orientations) are broad themes that the university has identified as strategically important to

address. These can range from single words used to structure the plan (ex: “People”) to broad calls to action (ex: “Embody good governance”). Objectives (goals and objectives) are initiatives to be undertaken by the universities to respond to the strategies identified. Objectives are supported by means, which are concrete actions, indicators, which are measures to evaluate the actions put in place, and targets related to the action and its indicators.

## 2.2. The Sustainable Development Goals

The SDGs constitute a global framework for sustainable development: 17 goals, 169 targets, and 231 indicators that address elements influencing people, planet, prosperity, peace, and partnership. In the higher education context, these goals and targets can be complemented with the pillar framework of *Universities' key contributions to the SDGs* of SDSN-Australia/Pacific's *How universities contribute to the SDGs*, reinforced by Di Nauta et al. (2020). (Figure 1).



*Figure 1. Universities' Key Contributions to the SDG. Source: Adapted from SDSN-Australia/Pacific (2017) & Di Nauta et al. (2020)*

This model breaks down universities' key contributions to the SDGs according to their core activities: 1. Education (termed teaching and learning in figure 1); 2. research; 3. operations and governance; and 4. external leadership (termed external engagement in figure 1). Each pillar is accompanied by sub-themes, named "SDG Areas of Interest" added by Di Nauta et al. in 2020. We use this enriched version of the Key Contributions framework in the present study to identify contributions to the SDGs in SPs.

### **3. Methodology**

#### **3.1. Data collection**

As part of a larger ongoing research project, governance documents of Canadian universities were collected between June 2019 and October 2022. For the present article, 97 universities with publicly available SPs were included, representing all Canadian provinces and the Yukon territory (75 % of Canadian universities). The universities were of varying sizes and types (research vs technical, public vs. private). In cases where the university had several SPs, the most recent plan was retained for this analysis. The planning cycles for these plans span from 2013 to 2045.

#### **3.2. Analysis**

Using the Qualitative analytic tool QDA Miner (Provalis Research Tools), the research team coded for SP components (mission, vision, values, axes, orientations, strategies, priorities, objectives, goals, means, indicators and targets), following the terminology used by the university within their plan. The contributions to the SDGs were identified with the aid of the Universities' Key Contributions to the SDGs framework and coded accordingly. Each segment, addressing a single topic or idea, was not limited to a single SDG, with most segments being associated to multiple SDGs due to the interconnected nature of the goals. The presence of general terms such as "sustainability" and "social, economic and environmental" were coded as "GEN.". A validation of the SDG codes for 30% of the corpus revealed an inter-coder reliability of 92.76% with Scott's pi being moderate ( $\pi = 0.51$ ) (Scott, 1995).

### **4. Results**

To respond to the first research question, we will look at the distribution of the segments identified as contributions to the SDGs across the SP components (Table 2).

Case occurrences of SP components show that most plans contain a mission (74 %), vision (78 %), values (66 %), strategies (91 %) and objectives (68 %). Less than half of the universities support these components with means (36 %), indicators (26 %), and targets (6 %). The percentage of overlap between the SDG segments and the SP components decreases chronologically as we proceed through the classic SP structure from 'mission' to 'targets', except for values (48 %) which is an outlier in this case. This suggests that broad statements of contributions to the SDGs are more prevalent than those detailing specific, measurable actions.

**Table 2. Distribution of SP components in the sample and overlap with SDG segments**

<b>Component</b>	<b>Case occurrence (%)</b>	<b>Frequency of SP components</b>	<b>SDG segment overlap*</b>	<b>Percentage overlap SDG segment and SP components</b>
Mission	74.23	94	91	96.81
Vision	78.35	112	95	84.82
Values	65.98	429	207	48.25
Strategies	90.72	1374	832	60.55
Objectives	68.04	1806	1066	59.03
Means	36.08	1541	901	58.47
Indicators	25.77	778	300	38.56
Targets	6.19	112	13	11.61

\*N<sub>SDG Segments</sub> = 3596

To address the second research question, we examined the frequency of SDGs in relation to each SP component (Table 3). All SDGs appeared in co-occurrence with SP components at least once in the sample, with all SDGs co-occurring with the SP components 'objectives' and 'means.' Some SDGs (4, 8, 9, 10, 16, 17) were prevalent, constituting over 10 % of occurrences for several SP components. In contrast, other SDGs (1, 2, 6, 7, 14, and 15) co-occurred with less than 1 % of all SP component segments identified and, in most cases, not at all. The remaining SDGs (3, 11, 12, 13) co-occurred with nearly all SP components except 'targets' and, in the case of SDGs 12 and 13, 'indicators.' However, these co-occurrences were moderate compared to the prevalent SDGs mentioned above, making up less than 8% of each SP component's occurrences.

## 5. Discussion

In this article, we explored where segments identified as contributions to SDG appear throughout SPs. The analyses show that segments of text identified as contributions to the SDGs in Canadian university SPs co-occur more frequently with SP components that are broad, overarching statements or goals, such as missions, visions, strategies and objectives, as opposed to the action-oriented means, indicators and targets. This suggests that the identified contributions to the SDGs are more prevalent in broad statements than those detailing specific, measurable actions. This type of engagement with sustainability fits into the “accommodative responses” category of Bieler & McKenzie’s analysis, which was the dominant response amongst Canadian universities studied (Bieler & McKenzie, 2017). They describe this response to SD in SPs as “umbrella statements concerning general commitment to sustainability and [a lack of] details on how this commitment would translate in terms of strategic directions, goals, or specific policy actions” (p.11).

**Table 3. Cooccurrence of SDG segments in relation to SP components**

SDG*		Mis	Vis	Val	Strat	Obj	Mea	Indic	Targ
	N	94	112	429	1374	1806	1541	778	112
GEN.	n	14	20	27	81	90	53	20	-
	%	14.89	17.86	6.29	5.90	4.98	3.44	3.57	-
SDG 1: No poverty	n	-	-	-	-	4	3	-	-
	%	-	-	-	-	0.22	0.19	-	-
SDG 2: Zero Hunger	n	-	-	-	-	1	5	-	-
	%	-	-	-	-	0.06	0.32	-	-
SDG 3: Health & wellbeing	n	2	6	7	88	91	104	11	-
	%	2.13	5.36	1.63	6.40	5.04	6.75	1.41	-
SDG 4: Quality education	n	66	45	71	317	434	384	111	2
	%	70.21	40.18	16.55	23.07	24.03	24.92	14.27	1.79
SDG 5: Gender equality	n	2		4	38	37	34	26	-
	%	2.13		0.93	2.77	2.05	2.21	3.34	-
SDG 6: Water & sanitation	n	-	-	-	4	1	1	-	-
	%	-	-	-	0.29	0.06	0.06	-	-
SDG 7: Clean energy	n	-	-	-	2	10	7	1	-
	%	-	-	-	0.15	0.55	0.45	0.13	-
SDG 8: Work & growth	n	14	17	10	152	200	228	72	3
	%	14.89	15.18	2.33	11.06	11.07	14.08	9.25	2.68
SDG 9: Industry & innov.	n	14	31	28	220	266	211	51	5
	%	14.89	27.68	6.53	16.01	14.73	13.69	6.56	4.46
SDG 10: Equality	n	34	24	73	247	276	267	108	3
	%	36.17	21.43	17.02	17.98	15.28	17.33	13.88	2.68
SDG 11: Sustainable cities	n	4	5	18	97	73	113	14	-
	%	4.26	4.46	4.20	7.06	4.04	7.33	1.80	-
SDG 12: Consumption	n	1	-	2	8	12	10	-	-
	%	1.06	-	0.47	0.58	0.66	0.65	-	-
SDG 13: Climate action	n	1	2	1	6	16	20	2	-
	%	1.06	1.79	0.23	0.44	0.89	1.30	0.26	-
SDG 14: Life below water	n	-	-	1	4	1	3	2	-
	%	-	-	0.23	0.29	0.06	0.19	0.26	-
SDG 15: Life on land	n	-	-	2	6	4	3	2	-
	%	-	-	0.47	0.44	0.22	0.19	0.26	-
SDG 16: Peace & justice	n	9	19	77	162	246	200	49	4
	%	9.57	16.96	17.95	11.79	13.62	12.98	6.30	3.57
SDG 17: Partnerships	n	6	14	17	127	193	200	41	4
	%	6.38	12.50	3.96	9.24	10.69	12.98	5.27	3.57

\*SDG labels have been modified to accommodate table size

With regard to the contributions to specific SDGs in co-occurrence with SP components, all SDGs were identified in relation to the SP components ‘objectives’ and ‘means’. The most

dominant SDGs, those easily associated with the university's triple mission (SDGs 4, 9, 17) and responsible and equitable institutional operations (8, 10 16), were present throughout the plans in co-occurrence with all SP components. It was hypothesized by the authors that the least common SDGs (1, 2, 6, 7, 14, 15) would be more present in action-oriented SP components, due to the precision of their themes. For example, that actions regarding clean water & sanitation would not appear within the overarching strategies of plans but instead within the concrete actions, indicators and targets. This, however, is not the case and only the dominant SDGs mentioned above co-occur with 'indicators'. This supports Leal Filho et al. (2021) finding that, of the 32 universities surveyed internationally in the study, only 13 % of the SDGs were identified as a priority focus. Among the lowest-priority SDGs were SDGs 1 (Poverty), 2 (Hunger), 12 (Consumption and Production), 14 (Life Below Water) and 15 (Life on Land) (Leal Filho et al., 2021).

## **6. Conclusion**

This article presents a novel approach to studying university engagement with sustainable development through co-occurrences of contributions to the SDGs with SP components. Despite that the presence of SD in the missions, visions, values, overarching strategies and objectives can be seen as an important step in aligning the university's governance and future with SD, these broad statements must be backed up by concrete action. As several authors have iterated, what is in a plan does not necessarily reflect the true level of action taking place on campus and within the university community (Bieler & McKenzie, 2017, Di Nauta et al., 2020).

Further reflection is required regarding what the strong absence of certain SDGs means in the university context. Is it acceptable that Canadian universities are not including strategies and actions to contribute to goals like SDG 1: No hunger and SDG 2: Zero poverty, or should they be doing more? Future studies could look at the perceived prioritization of the SDGs according to university planners, decision-makers and stakeholders in Canada. Beyond this, future studies could consider other, hopefully complementary, governance documents, such as sustainability policies and action plans, to see if this is where the low-frequency SDGs are addressed.

One limitation of this study includes moderate inter-coder reliability. Due to the interconnected nature of the SDGs, and the nature of coding implicit contributions to them, not just explicit mentions of SD, achieving a strong inter-coder reliability is difficult. The authors do not believe that this should discount the results, but instead that they should be interpreted with caution.

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