

The Role of Universities Towards a Sustainable Future: Integrating the Sustainable Development Goals

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Abstract

We live in an era of unprecedented planetary and social challenges, including: the climate crisis, globalization of economic markets, social injustice, inequalities, poverty, food insecurity, biodiversity loss, migration, technological automation, and most recently, the COVID-19 pandemic. For decades scientists around the world have sounded the alarm on planetary boundaries, yet there is a profound discrepancy between knowledge and action. These challenges urgently need to be addressed with practical solutions if the world is to achieve the United Nation's *Transforming our world: the 2030 Agenda for Sustainable Development*.

Universities play a distinct role in society and a critical role in helping achieve the Sustainable Development Goals to rebuild a more resilient and equitable world. My specific research question is: *How have universities integrated the Sustainable Development Goals, and what lessons might be learned and applied therein?* This research was conducted through a qualitative, case study-based methodology, where findings were derived from a literature review, analysis of select universities and empirical evidence from SDG related information sessions. Findings include best practices of how universities have integrated the SDGs through a whole-institution approach. Key lessons learned are 1) SDGs are an integral blueprint towards a sustainable university; 2) the Campus as a Living Lab is a tool to accelerate the integration of the SDGs; 3) SDGs require an impact solution-oriented approach; and 4) it also requires a holistic approach integrating Indigenous Knowledge, other worldviews

and different ways of knowing. The findings and lessons learned are applied to York University as a case study.

Foreword

The MES program has allowed me to pursue continuous and lifelong learning, as well as complement my experience as a sustainability professional in higher education, enabling continuous improvement with the knowledge and skills acquired. My area of concentration is sustainability and organizational change. This focus stems from a passion for being a changemaker for environmental sustainability and social justice. My Plan of Study has evolved from the commencement of the program in 2017 when I was narrowly focused on sustainable transportation and I've realigned my plan to coincide with my current role as the Program Director, Sustainability at York University. This has given me a unique opportunity for experiential learning and to completely embody both the theoretical and practical applications of sustainability.

This Major Paper is the final element of my Plan of Study where I have explored in detail components of my area of concentration to have an in-depth exploration and understanding of integrating the Sustainable Development Goals within universities.

Acknowledgements

This work is dedicated to my son Owen Baker, my loving little boy full of wisdom and who has already taught me so much about life. He has inspired me to continue to challenge myself and pursue my environmental passion in creating a better world for him and all future generations.

I am deeply grateful to so many people who have helped me accomplish this dream and without their support, completing my graduate studies would never have occurred. I wish to express my sincere appreciation and gratitude to the following people: First and foremost, I am incredibly grateful to my (late) parents Alice and Omer Arsenault, for their unconditional love, support and for being great role models who instilled in me empathy, compassion and kindness. My hard-working parents sacrificed so much for my brother and I, and all their grandchildren, providing us with a nurturing home, a solid foundation and many opportunities in life. My brother Rick continues to provide me with the daily inspiration and motivation our parents instilled to be loving and humble human beings.

To my husband Dave Baker, my best friend and soulmate, for all his love and motivation through all of these years. Thank you for the unconditional love and for supporting me through the good days as well as the challenging times. These last few years have been tremendously difficult for me both personally and academically and I am truly thankful for the strength, commitment and determination on our journey of life together.

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I also want to acknowledge the late Tom Arnold— one of my first mentors at York University—who guided me to follow my passion and my dreams. He gave me the opportunity to grow professionally, which ultimately lead me down this path.

Lastly, I extend deep gratitude to all my family and friends who continue to inspire, challenge, and motivate me to keep going to create a sustainable world.

Abbreviations

AASHE – The Association for the Advancement of Sustainability in Higher Education

CIFAL – International Training Centre for Authorities and Leaders

COVID-19 – Coronavirus 2019

ESD – Education for Sustainable Development

ESG – Environmental, Social and Governance

GHG – Greenhouse Gas Emissions

GDP – Gross Domestic Product

IPCC – Intergovernmental Panel on Climate Change

LCA – Life Cycle Analysis

LGBTQ2S+ – Lesbian, gay, bisexual, transgender, queer, two-spirit, and other sexual and gender minorities

HEI – Higher Education Institutions

OCUSP – Ontario College & University Sustainability Professional

SDGs – Sustainable Development Goals

SDSN – Sustainable Development Solution Network

STARS – Sustainability Tracking Assessment & Rating System

THE – Times Higher Education

TRC – Truth and Reconciliation Commission

UNESCO – The United Nations Educational, Scientific and Cultural Organization

UNFCCC – United Nations Framework Convention on Climate Change

UNITAR – United Nations Institute for Training & Research

UNGC – United Nations Global Compact

UNSDGs – United Nations Sustainable Development Goals

VUR – Voluntary Universities Reviews

WHO – World Health Organization

WIA – Whole-Institution Approach

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EARTH SPIRIT

*Whenever life gets me down
When I feel disconsolate, disillusioned, disconnected
Wandering aimlessly and wondering wistfully
When something's amiss and I don't know what it is
I find it helps to call upon the spirit of the Earth
To invoke that which moves and breathes and infuses all life
To remind me of my vital place in the universe
Where I am inextricably linked, connected, enmeshed
Swaying in sync with the moon and tides
Stretching for the skies along with trees and birds
Singing in unconscious harmony with nature's chorus
And never truly alone, or cut off or superfluous
Never really without direction or bereft of love
For the great Earth Spirit enfolds me and entwines us
It binds our actions and amplifies our intentions
It is the spirit of possibility and positivity
The source of our energy and the web of our dreams
It bathes us in the wisdom of countless aeons
And heals us with the gentle rays of time
Therefore, in our hour of need and season of doubt
Let us be open to the promise of the Earth Spirit
To the hope that rises within us
To the faith that extends beyond us
To the love that gathers around us
Let us welcome the invisible power of the planet
And the indivisible power of the people
Let us be guardians and advocates of our Earth
Even as the Earth nurtures and cares for us
Let our Earth Spirit invocation be a commitment
To live and love in the highest and truest way we know
For the sake of ourselves
For the future of our children
And for the life of our only home, Earth.*

- Wayne Visser, 2019

1. Introduction

Universities have a substantive role to play in shaping a sustainable future, and in addition, universities play a critical role in helping society achieve the Sustainable Development Goals (SDGs), established by the United Nations. With many universities embracing SDGs as part of their mandate, we are at an early stage of understanding the impacts that these mandates are fulfilling. This major paper investigates the approaches taken by universities with regards to implementing SDGs, explores the lessons learned, and identifies areas to pursue further.

The world's population has more than tripled within the last century, with more than 7.8 billion people now living on the planet. This increase in population combined with rapid technological advancements means that for the first time in 4.6 billion years, one species alone is not only influencing environmental systems, the oceans, the atmosphere, etc., but is also fundamentally altering earth's climate (IPCC Report Summary for Policymakers, 2019). Nobel laureate and atmospheric chemist Paul Crutzen named the new epoch the *Anthropocene*: "The New Human Age". We are facing global environmental, social and economic challenges, and the world is rapidly approaching a tipping point that threatens to cross our planetary boundaries. While I was researching and writing this major paper, the world has been experiencing a vast number of planetary crises, including the COVID-19 pandemic, extreme poverty, biodiversity loss, and, most significantly, climate change. We continue to see evidence that climate change is worsening, not only because of sea-level rise, widespread drought, wildfires burning around the world, and extreme weather events like recent devastating and catastrophic flooding in Canada, Europe and Asia; but also due to record-

breaking temperatures across the globe. The impacts of climate change are also seen in Canada; for example, in July 2021, Lytton, British Columbia hit a record temperature, reaching 49.6C, which was the hottest temperature ever recorded in Canada. At the same in the Summer of 2021, according to NASA, imaging showed a peak ground temperature of 48C near Verkhoyansk, Russia (a small Siberian town with a reputation for having extremely cold temperatures). According to the World Meteorological Organization, the most dramatic changes are occurring in the Arctic, where temperatures are rising twice as fast as in the rest of the world. In August 2021, the Intergovernmental Panel on Climate Change (IPCC) released its latest assessment report on climate change. The report is widely considered to be the most comprehensive assessment since 2014, and it is sounding the alarm for a code red for humanity.

Inequities and injustices are equally as troubling, as Canadians are waking up to a deep, shameful history of colonization with the findings of hundreds of unmarked graves at residential schools within Canada. This comes on the heels of the recent Black Lives Matter movement, which has drawn international attention to racial and social injustices. There are many examples of social injustice; these are only a few. Further, inequities and injustices are a reality for people across the world living in poverty. Many marginalized communities are the most impacted from the effects of both climate change and the COVID-19 pandemic.

The world is faced with a wide range of global sustainability and social justice issues due to human civilization's unprecedented progress, and to address these interconnected issues, we need an aggressive transformation. Humans and nature, society and the biosphere, industry

and the planet, all need to co-exist in harmonious ways to maintain current and future generations in a secure, prosperous, and resilient environment (Horton and Horton, 2019).

To achieve a better and more sustainable future for all, the Sustainable Development Goals (SDGs) were developed in 2015 by the United Nations, replacing the Millennium Development Goals. The SDGs address global challenges, including poverty, inequity, climate change and environmental degradation. The illustration below provides an overview of all seventeen of the Sustainable Development Goals.

Figure 1: The Sustainable Development Goals (SDGs)



Note. From the United Nations Department of Global Communications, 2015

(<https://www.un.org/sustainabledevelopment/news/communications-material/>)

In September 2015, 193 Member States of the United Nations adopted the 2030 Agenda for Sustainable Development as a call to action and blueprint for ecological planetary health, eradication of poverty, and to ensure prosperity and peace for everyone by 2030. The framework is a voluntary set of objectives with 17 goals and 169 targets (United Nations, 2015). To attain the Sustainable Development Goals, also known as the ‘Global Goals’, all countries need to take action in five areas of critical importance: People, Planet, Prosperity, Peace and Partnership. Each country must target these areas in a way that benefits all people globally; and this framework outlines the global transformation objectives to be carried out over the next decade. It is the commitment that “no one will be left behind” (United Nations, 2015) that is central to achieving these SDGs, and it requires the use of metrics to measure progress (United Nations, 2015). In July 2021, at the High-level Political Forum on Sustainable Development, Canada reaffirmed its commitment to the 2030 Agenda and its 17 Sustainable Development Goals and published the 2021 *Canada’s 2030 Agenda National Strategy Moving Forward Together*. This aligns with the five key elements that led to the 17 SDGs, which constitute the 5 Ps Framework: People, Planet, Partnership, Peace, Prosperity, as illustrated in the graph below.

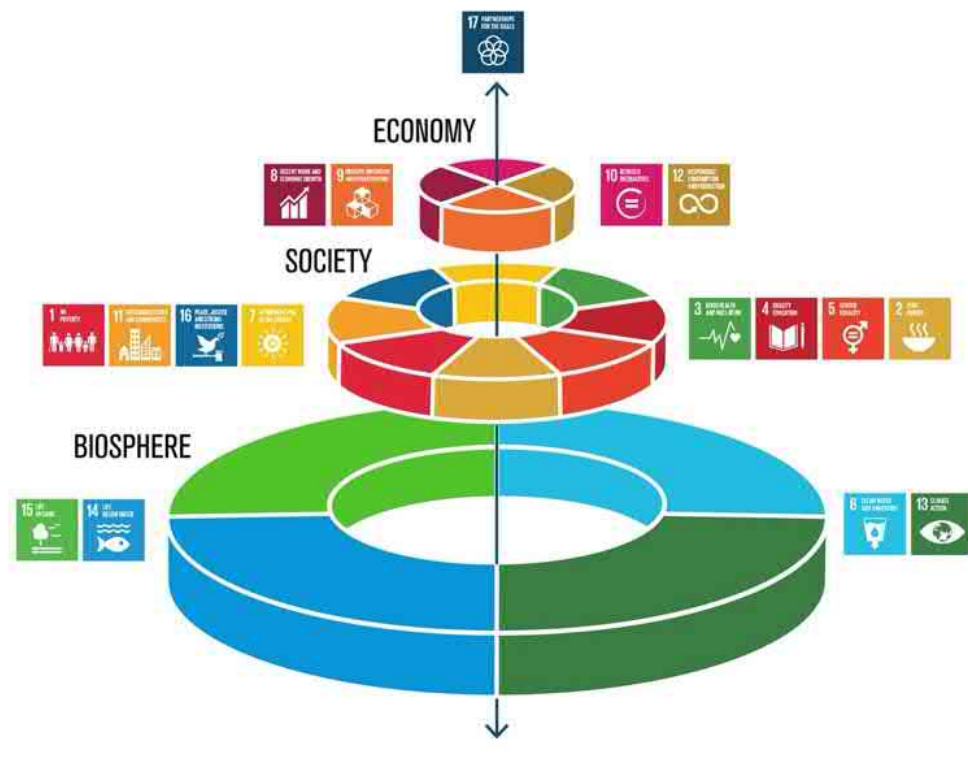
Figure 2: The five key elements (5 Ps) that led to the development of the SDGs



Note. From the Sustainability Dashboard, 2015,
(<https://sdg.gdrc.org/post/128479353317/the-five-key-elements-5-ps-that-led-to-the>)

The Sustainable Development Goals are composed of economic, social, and ecological components. Additionally, Carl Folke and his team developed a 'wedding cake' model to give a different perspective on the SDGs, as noted in figure 3 below. The model aims to interconnect social, economic, and ecological development rather than treating them separately in isolation. The goal is to make the economy serve society so that it evolves within the safe operating space of the planet.

Figure 3: "The Wedding Cake"



Note. From the Stockholm Resilience Centre, 2016 (<https://www.stockholmresilience.org/research/research-news/2016-06-14-how-food-connects-all-the-sdgs.html>) Creative Commons license (CCBY 4.0) Credit: Azote for Stockholm Resilience Centre, Stockholm University.

This model makes it is easier to view the interconnectivity of goals using this approach compared with a traditional sectoral approach to development that separates social, economic, and ecological development. The model complements the *nine planetary boundaries* concept developed by the Stockholm Resilience Centre (2015) under the leadership of Johan Rockström. This theory proposes that crossing quantitative planetary boundaries will result in irreversible large-scale ecological changes (Stockholm Resilience Centre, n.d). Furthermore, this model also complements *The Doughnut Model*, presented by Kate Raworth (2017), which defines a "safe zone" between environmental boundaries and social equity that we should strive to achieve. It is here that the "Era of the Planetary

Household" (Raworth, 2017, p.55) is introduced by explaining how we can organize collectively within these inner and outer boundaries.

As the SDGs are interconnected, no one goal can be achieved without addressing the others; failure to address any one goal can negatively impact another. Because of this, collaboration and interdisciplinary thinking are critical. For the SDGs to be realized, urgent action needs to be taken by all nations and through global partnerships involving developed and developing countries to address global issues like poverty, inequality, climate change, sustainable consumption, the need for innovation, and the importance of peace and justice (United Nations, 2015). Amidst its commitment to the United Nations, Canada has called on every segment of society—including higher education—to become involved in supporting the SDGs, requesting leadership, engagement, and accountability.

Despite the global commitment to the SDGs, there are significant data gaps when it comes to assessing impact and progress, and although some advancements have been made, we are not on track to meet the goals set for the 2030 Agenda. Additionally, in 2020, the SDG Index Score decreased for the first time. This decline was primarily caused by increased poverty rates and unemployment as a result of the COVID-19 pandemic. As the SDGs are so important, there are numerous tracking data points in the SDSN Sustainable Development Report (2021) that indicate that Canada has advanced in meeting Goal 4: Quality Education. However, significant challenges remain for Goal 12: Responsible Consumption & Production; Goal 13: Climate Action; Goal 15: Life on Land; and Goal: 17 Partnerships for the Goals.

In light of these complex issues and how they affect people, input from education will play a major role in the development of real solutions, and for this reason, it is imperative that we reimagine education systems (knowledge, teaching and learning). A key objective of higher education is to advance knowledge and to positively impact society. Therefore, universities play a critical role in advancing sustainability and the SDGs by integrating them within the university's operations, research and curriculum. Furthermore, by developing an interdisciplinary system perspective, universities provide students with experiential learning, demonstrating best practices and providing solutions to these complex challenges.

1.1. Statement of Research Topic

The planet and humankind are facing a wide range of global sustainability issues due to civilization's unprecedented progress, and the severity of these issues has created the urgent need for transformation. To support current and future generations, people and the Earth need to co-exist in harmonious ways that focus on people, the planet, prosperity, peace, and partnerships. As noted, to promote a better world that supports this philosophy, the 2030 Agenda for Sustainable Development with the Sustainable Development Goals (SDGs) were adopted by the United Nations in 2015. The intent is to collectively work towards a sustainable future addressing global challenges, including poverty, inequality, climate change, environmental degradation, peace, and justice.

Universities play a crucial role in helping to shape a sustainable future through the SDGs. The higher education sector is cited for its role in sustainability for the first time in the UN

2030 Agenda is seen as playing an essential role in training future generations of leaders, developing essential research agendas, and shaping the future. As a result, universities wield significant power to be able to promote and advance SDGs and sustainability initiatives more broadly. Therefore, we need to assess and enhance the role of universities to adapt to these new realities. While there are several perspectives on the purpose of universities, this research will focus on universities being utilized to advance knowledge for the purpose of improving all aspects of society, primarily by integrating sustainability and SDGs into research, curricula, community service, and operations. Further, by developing an interdisciplinary-system perspective and using the campus as a testbed for innovation through the “Campuses as Living Labs” concept, students can be provided with experiential learning, an understanding of best practices, as well as a toolkit of practical solutions to these complex challenges moving forward.

A crucial question in this time of uncertainty is how universities are integrating the Sustainable Development Goals, and how these efforts can be accelerated. We must look for new, actionable solutions that will not be hindered by antiquated habits and cultural resistance; solutions that enable universities to facilitate radical change and regeneration to achieve the SDGs during the decade of action moving towards 2030. Simply put, sustainability and sustainable development principles need to be at the centre of institutions' strategies, and organizations need to embed them into their cultures. When implemented successfully, universities will also influence the society in these matters, largely through leading by example (e.g., promoting SDGs, key subjects such as poverty, reducing inequalities, achieving a circular economy, and decarbonization). This can be promoted by using different communication and engagement methods with students, staff and faculty.

But the SDGs are complicated. They are interconnected, and represent a broad range of economic, social and environmental dimensions of our global challenges. They require significant awareness, engagement, organizational transformation, and a shift in both mindset and behaviour at all levels of the institution. Yet critical institutional challenges—such as incorporating sustainability principles into existing operational frameworks, navigating a highly political climate, and optimizing the interest of key stakeholders—must be addressed. With this in mind, despite the urgency, many universities are still unsure how to incorporate the SDGs since they are still new and evolving.

1.2. Specific Research Question

My specific research question is:

How have universities integrated the Sustainable Development Goals and what lessons might be learned and applied therein?

Universities have taken steps to embed and integrate sustainability through research, curriculum, and within operations; yet resolving the most critical problems will require more work, more adaptation of value-based approaches and philosophies, and greater promotion of innovation, experiential learning, and responsibility towards future generations. To integrate the SDGs within universities, a whole-institution approach is required, which includes governance and administration, research, teaching, operations, and collaboration with local communities. The SDGs and universities both have significant complexities, and the purpose

of this study is to identify and understand best practices, lessons learned, and challenges to integrating the SDGs in universities.

Research findings stemming from this project can be used by institutions to critically reflect on how they have integrated the SDGs and how to continuously improve their paths to success. This research could also assist York University, which released a five-year Academic Plan (UAP) from 2020 to 2025 to create positive change for its campuses, students, and communities. The plan has six priorities for action and presents a university-wide challenge of contributing to the 17 Sustainable Development Goals. York can greatly benefit from establishing best practices and lessons learned that are relevant to its efforts in achieving these goals.

This paper will include a literature review of SDGs in universities, the methodology for this research, key findings, lessons learned, and a case study of York University.

2. Literature Review

The literature review focuses on (1) the role of universities within society, (2) the role of sustainability in universities, and (3) the role of the SDGs in universities. The purpose and impact of universities on broader society have evolved. The focus of this literature review examines the correlation between recent growing social inequalities, environmental degradation, and the relationship between sustainability and the Sustainable Development Goals and their implementation within universities.

2.1. The role of universities in society

The purpose of universities and their role in society remains a philosophical debate that has both policy and practical implications. Universities have rapidly expanded since World War II, and their purpose and impact have also transformed in numerous ways. Fundamentally, universities produce and share knowledge in both a personal and a societal context. Further, the knowledge society has an economic impact, both through the generation of knowledge and by increasing labour markets (Brennan, 2013). Additionally, universities have become inextricably linked to the notion of progress at both a societal and an individual level (Jongbloed, 2008). Universities make significant "social, cultural and economic impact, but what is unclear, is how it makes this impact, on whom it makes its impact, when it makes its impact, and the different forms which impact takes from increasingly diverse higher education systems" (Brennan, 2013).

Kromydas (2017) argues that there are two theoretical stances on the purpose of higher education that should be reimagined to converge more strongly. The first view is that the

purpose of a university is to support individuals in acquiring knowledge to gain a career and increase their income. This is a fairly mainstream and widely accepted view. The second purpose is the intrinsic notion to consider the "ontological and epistemological" consideration for our social realities (Kromydas, 2017, para. 3). While the second stated purpose is not as unquestionably associated with the role of universities, due to the rapidly increasing social inequalities and planetary deterioration, there is a call for education to be re-evaluated to ensure that it is not just a means to an end but rather a catalyst for social and cultural transformation (Kromydas, 2017).

Additionally, to render proof of their relevance, universities need to be in constant dialogue with their many communities and stakeholders (Jongbloed et al., 2008). Societal expectations on the part of universities have been expanded to include the pursuit of solutions to societal challenges, and to facilitate this, there has been a growing trend in universities to work with communities by making teaching and research more publicly accountable and relevant to society. Universities play a crucial role in advancing the agendas of social justice, human rights, and civil society (Lamont, 2014). Further, universities create conditions to foster cultural diversity with minorities and equity-seeking groups by creating institutional conditions that, while not always perfect, work to enable greater social inclusion and provide students with resources to increase their social resilience (Lamont, 2014). Lamont (2014) further argues that there is a direct link between higher education and social resilience, and this needs to be amplified to tackle the multitude of current and future world issues.

Haski-Leventhal (2020) presents an insightful argument regarding the role that universities play in society; therefore, a substantial portion of this section is based on her argument.

Haski-Leventhal argues that the focus of universities has been too narrow – primarily to educate and conduct research – which has led to a perception that universities are "ivory towers and detached elitist institutions" (p.7). Further, many universities are too focused on rankings, profit, and graduate income instead of real societal impact (Haski-Leventhal).

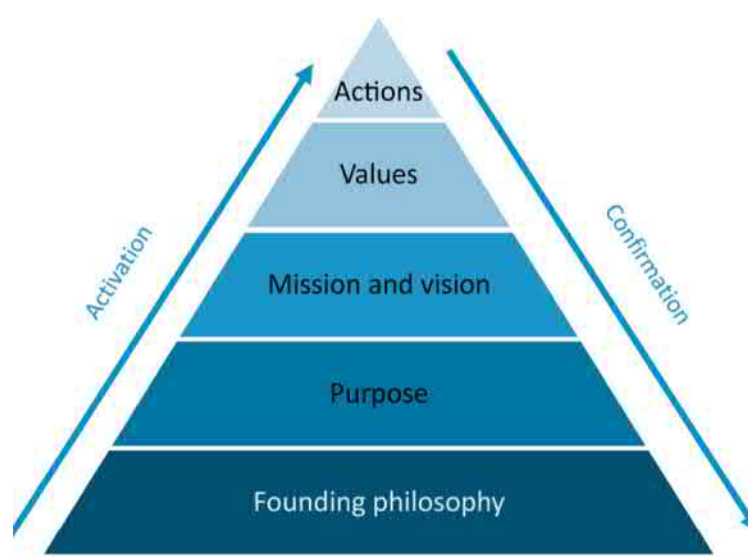
What we need are universities that are impactful and purposeful and that strive to reconnect with the community. What we need are purpose-driven universities... to use their power, resources, people, incredible intellect and event their physical campuses to create a positive impact in the world. (Haski-Leventhal, 2020, p.7)

Haski-Leventhal (2020) points out that while many universities are still too preoccupied with ranking and being "the best in the world," there is a growing number of universities that are instead of striving to be "the best for the world" (p.14). One example that she provides is Stanford University, which is focused on research on social innovation and making an impact to fight poverty. Another example that she identifies is the University of Auckland, which is dedicating itself to the Sustainable Development Goals to help the world achieve the 2030 Agenda. With a strong sense of purpose, "these and others are not only working to change the world, but they are also changing the essence of higher education" (Haski-Leventhal, 2020, p.8). This analysis supports the argument that universities need to rethink university rankings and reward systems. Haski-Leventhal (2020) notes that universities have shifted from their original purpose. "University and universe (defined as 'combined into one, whole') were founded in a bid to create universitas magistrarum et scholarium—a holistic array of knowledge to enhance the world. To 'educate' implies the opening of minds and how it leads forth" (Helfand 2011, as quoted in Haski-Leventhal 2020, p.7). Additionally, Haski-Leventhal (2020) holds the position that universities should utilize Simon Sinek's (2009) philosophy of

“starting with why” and notes that successful companies and leaders start with “why”, which is then followed by “how” and “what”. A substantial “why” can help differentiate a university, and it can help engage and inspire people to act to achieve a shared cause. Universities must define their purpose in unique terms, such as public welfare and compassion (Haski-Leventhal, 2020).

It is also becoming more imperative for universities to define their purpose in unique terms such as public welfare and compassion (Haski-Leventhal, 2020). People become more purpose-driven through action statements, and this is illustrated by Haski-Leventhal’s (2020) description of the five levels of organizational identity, which demonstrates that purpose activates the mission, values, and actions, and the actions confirm the mission and the purpose.

Figure 4: Five Levels of Organizational Identity



Note. From *The Purpose-Driven University*, by D. Haski-Leventhal, 2020, p. 16 Emerald (<https://doi.org/10.1108/978-1-83867-283-620201002>), Copyright 2020 by Emerald Publishing Limited.

Despite these new realities, Brennan (2014) illustrates that there are challenges for universities in having an impact. First, the boundaries and social complex between universities and society are unclear and difficult to define. Additionally, universities are marked by an economic environment that relies on global market competition in which governments aren't the key players anymore (Brennan, 2004).

In summary, purpose-driven universities can make a tremendous impact in advancing the agendas of both environmental and social justice, which contribute to solving complex global issues.

2.2. The Role of Sustainability in Universities

“Civilization is in a race between education and catastrophe. Let us learn the truth and spread it as far and wide as our circumstances allow. For the truth is the greatest weapon we have.”

— H. G. Wells, n.d.

It is clear from the literature that universities are making an effort to embed sustainability, but to transform society, much more action is required, including rethinking pedagogy to include value-based learning while promoting innovation, experiential learning and our responsibility to future generations.

Sustainability is viewed as a long-term goal of maintaining ecological balance by avoiding the depletion of natural resources, whereas sustainable development is defined by Gro Harlem Brundtland (1987) as follows: “sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

(p.37). This definition embodies three main pillars: economic, environmental and social.

Applying this principle in an organizational context, sustainability is conceptualized from a systems perspective to remain in balance with the use and disposal of natural resources to protect the regenerative health of the planet and equitably distribute the wealth generated in order to meet the needs of future generations (Brundtland, 1987).

In a historical context, efforts have been made to emphasize the growing need for education and awareness towards sustainability in higher education. The first official statement was the Talloires Declaration in 1990, with over 500 higher education presidents in over 50 countries committing their institutions to sustainability in order to create a sustainable world (Association of University Leaders for a Sustainable Future, 2021). Numerous subsequent events have marked the role of universities in the sustainable development paradigm, such as the emergence of Agenda 21 in 1992, a comprehensive plan of action for sustainable development. Another important milestone occurred in 2015 when UNESCO initiated *The United Nations Decade of Sustainable Development* (2005-2014) to integrate principles, values and practices of education for sustainable development (ESD) into all aspects of education and learning. The emphasis was that education should integrate a vision and mission of personal and social change through conservation, social justice, sustainable development, and democracy. “ESD also involves developing the kinds of civic virtues and skills that can empower all citizens and, through them, our social institutions, to play leading roles in the transitions to a sustainable future” (Gough, 2006).

In 2020 another major milestone was the announcement of the beginning of the ‘Decade of Action and Delivery for the SDGs’ (IAU, 2020). This was followed by the release of a 2021

report, “Reimagining our Futures Together: A New Social Contract for Education,” with the aim of rethinking educating to shape the future. Feedback from a global survey formulated this report: “the initiative is catalyzing a global debate on how knowledge, education and learning need to be reimagined in a world of increasing complexity, uncertainty and precarity” (UNESCO, Futures of Education, 2021, “About the Initiative” section).

Cortese (2013) has held a similar position, that in order to achieve sustainable development, future leaders must also be educated about the *importance* of sustainability. Universities have a significant role to play in future leaders embracing the mitigation of environmental impacts through their educational activities and institutional operating practices. As such, universities need to adopt a top-down and bottom-up approach (Barth, 2013). Campuses have large economic, environmental, and geographical footprints, and by addressing the emerging environmental challenges facing university campuses (including climate change), they will foster a culture of societal change through leading by example. For this reason, many universities are starting to encompass an operating model that aligns with the Paris Agreement and the Inter-governmental Panel on Climate Change (IPCC) to reduce GHG emissions.

Despite the successes of embedding sustainable principles within higher education, David Orr challenges the industrialized educational model and our collective virtues and definition of success in *Earth in Mind* (2004). Orr argues that our education system isn't teaching students to be sustainable and good stewards of their ecological or civic communities. More troubling, he argues, is that the education system exacerbates our negative environmental impacts and unsustainable lifestyle and promotes self-centeredness. Compounded by the relentless drive

for attaining more material consumption, Orr holds the position that we are becoming more ignorant of the essential values in life, hence contributing to an ecological crisis. Orr points out that higher education institutions are held in high regard for the wrong reasons. They are producing individuals that have historically been enhancing human dominance over nature, causing ecological and societal collapse. He also suggests that our education system has removed nature from our consciousness in favour of paths to economic success, material growth and short-sighted consumerism. It is "the problem *of* education, not problems *in* education" (p.5).

"Tinkering at the edge of the status quo characterizes most educational reforms as a kind of nickel solution to a dollar-sized problem" (Orr, 2011, p. xix). Orr urges an extensive paradigm shift with systemic changes in the educational system with placing more emphasis on wisdom and rational thought. Education must teach students that personal prospects are intertwined with planetary health and the well-being of society. Orr's argument is consistent with the notion identified in *The Economics of Biodiversity: The Dasgupta Review* (Dasgupta, 2021), which submits that our institutions have played a key role in creating environmental degradation, and argues that the path forward is to bring economics and ecology together:

Our global collective failure to achieve sustainability has its roots in our institutions. Many of the institutions we have built have proved to be wholly unfit to curb our excesses; worse, they have helped to widen the gap between what we are led to believe is possible and Nature's bounded capacity to respond to our demands. Effective institutions are the foundations on which to rebuild our engagement with Nature and manage our assets. Changes in three other systems will prove to be

especially important: the protection of public goods, the financial system and education (Dasgupta, 2021, page 494).

Furthermore, Thomashow (2020) points out that although environmental education does its best to raise awareness about these topics, there is much more work to be done and much less time in which to do it. It is imperative that we recognize and address this ecological global emergency. By connecting the issues of our time—migration, race, inequity, climate justice, and democracy— with our understanding of the biosphere, we can broaden the scope of our educational efforts. “Our educational work is how to deepen that understanding, use it to inspire widespread action, further clarify the connections, and weave the individual narratives of agency and action into a collective global narrative of constructive change” (Thomashow, 2020, p.4).

The sustainability challenges we now face require that dominant pedagogies and forms of learning in higher education be reconsidered so that students and faculty can face accelerating change, increasing complexity, contested claims to knowledge, and inevitable uncertainty (Lotz-Sistka et al., 2015). A higher education pedagogy that appears more responsive to the key challenges can be influenced by four emerging streams of transformative, transgressive learning research and praxis in sustainability science; included are (1) reflexive social learning and capabilities theory; (2) critical phenomenology; (3) socio-cultural and cultural historical activity theory; and (4) new social movement, postcolonial and decolonisation theory (Lotz-Sistka et al., 2015). Lotz-Sistka et al. (2015) challenge the current tendency in sustainability science and education to focus on resilience and adaptive capacity-building and propose that a more robust transgressive learning and disruptive capacity-

building approach are needed to break with the maladaptive resilience of unsustainable systems.

In a world of increasing complexity and uncertainty, there is a global debate over rethinking education systems, reimagining knowledge and learning to shape the future, and addressing complex global challenges with the guiding principles of social justice and stewardship (UNESCO, 2020). The long-term goal of university communities is to advance science to serve society, with an ultimate goal to improve all aspects of society (Holdren, 2008). Universities also have a significant role within communities engaging with stakeholders and building capacity (Shiel et al., 2016). Systemic changes have been occurring within universities by including sustainability within education, research, operations and community engagement. However, sustainability has not always been prioritized, as many universities are often slow-moving and bureaucratic, concentrating on educational reforms towards efficiency, accountability, privatization, and management (Wals, 2014).

Sustainability has gradually become important to the education sector since the 1970's; however, it is clear from the literature that much more effort is required. Thankfully, in the last few decades, many institutions have attempted to become more sustainable, particularly through campus operations in waste reduction and energy efficiency, and recently universities are also advancing sustainability more holistically through the integration of the Sustainable Development Goals.

2.3. The role of the Sustainable Development Goals in Universities

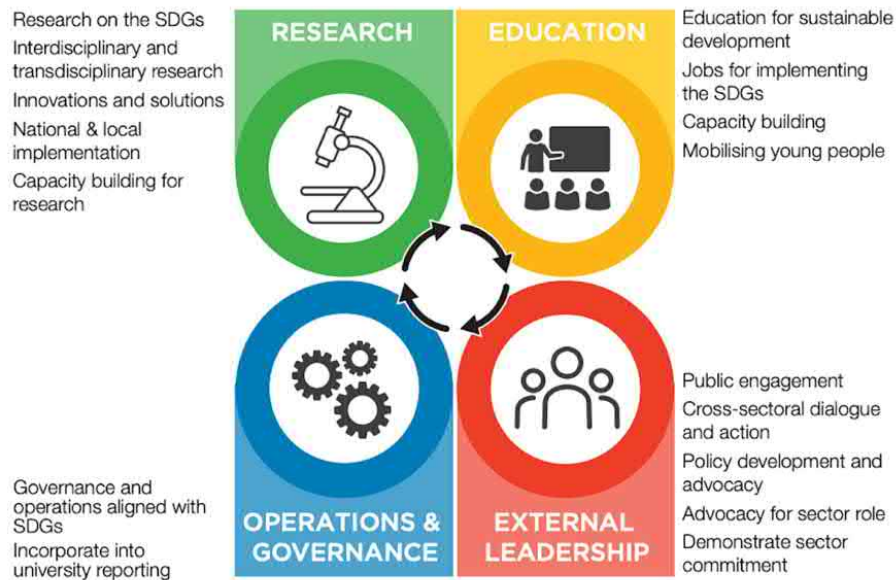
“Education is the most powerful weapon which you can use to change the world.”

— Nelson Mandela, speech, Madison Park High School, Boston, (1990)

As universities shape society, it is imperative that they play a crucial role in achieving the established SDGs, as places of education and knowledge sharing and as places of research and innovation. The following section outlines a review of the literature that identifies universities playing this crucial role in helping societies achieve the SDGs through their leadership, research, teaching, and campus operations.

At the UN High-Level Political Forum on Sustainable Development in 2019, the United Nations indicated that achieving the 2030 Agenda is not possible without the contribution of universities through research, teaching, and community engagement. The Association of Commonwealth Universities as well as The International Association of Universities (IAU) advocate for universities to take a proactive role in advancing the process towards achieving a more sustainable future for the well-being of the planet and humanity. To address the interconnected environmental, social, and economic challenges, universities need to embed sustainability through a whole-institution approach to operational practices, curriculum, research, and by developing inter-institutional collaboration. Figure 5 below illustrates the university's contributions to the SDGs through Research, Education, Operations & Governance, and External Leadership.

Figure 5: An Overview of University Contributions to the SDGs



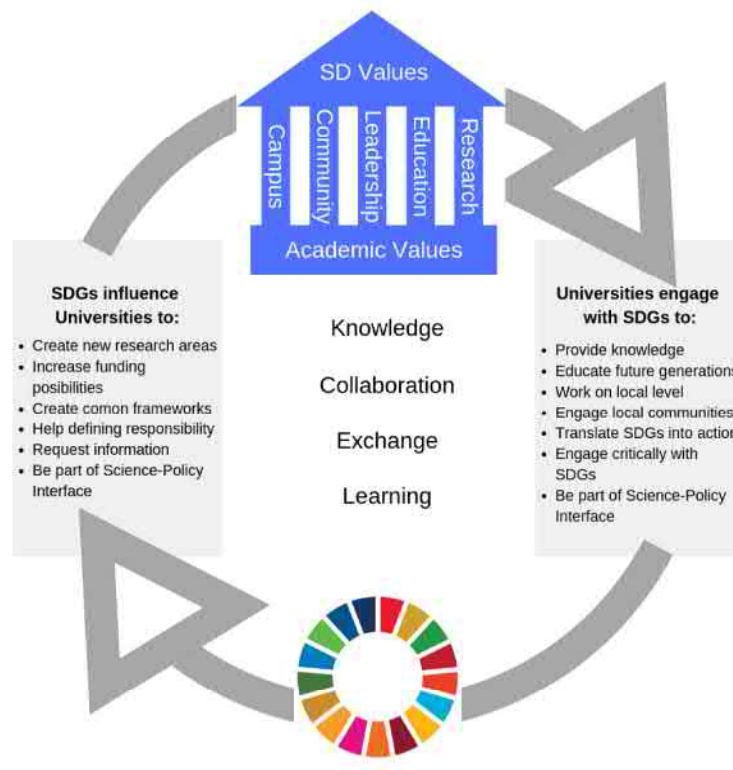
Note. From Getting Started with the SDGs in Universities, by SDSN Australia/Pacific, 2017), p.10 (https://ap-unsdsn.org/wp-content/uploads/University-SDG-Guide_web.pdf)

Universities are regarded as key actors and play an integral role in advancing the Sustainable Development Goals by integrating within operations, research, curriculum, and further by mobilizing knowledge and innovation through an interdisciplinary systems thinking, providing students with experiential learning, and demonstrating best practice examples (Körffgen, 2018). The key to university engagement with SDGs is to align the academic mission with the broadest definition of sustainable development (Le Roux and Pretorius, 2016). Higher education has the potential to contribute meaningfully to the 2030 Agenda (Sach, 2018), and as universities become more integrated with the society they serve, sustainable development can be accelerated (Cortese, 2003).

The SDGs provide students with a well-rounded understanding of both local and global challenges. Furthermore, students will become better citizens and stronger problem-solvers if they are engaged with authentic inquiry and provided with transformative, experiential and place-based approaches (Hensley, 2017). Globally, only 6.7% of the population attends higher education institution, but that number will become the 80% shapers of the future (Mader et al., 2013).

University collaborations and alliances for sustainable development are vital to addressing the SDGs' challenges and opportunities. To achieve this, academia must take a central role in creating environments that encourage dialogue and critical thinking. Academic institutions have a history of bringing diverse stakeholders together; most importantly, the SDGs necessitate such multisectoral and cross-disciplinary conversations. In recent years, many universities have established transdisciplinary centers and research teams to push forward the Sustainable Development Goals. Besides addressing the most pressing global challenges, universities are anchor institutions which can provide a plan that engages the community at large, this helping to bridge the gap between global priorities and local actions. The following graph illustrates the benefits of SDGs influence in universities and how universities can engage with the SDGs. This is critical to understanding the value that universities bring to the SDGs and how the SDGs can help to shape their purpose.

Figure 6: The Case for University Engagement in the SDGs



Note. From Getting Started with the SDGs in Universities, by SDSN Australia/Pacific, 2017), p.7 (https://ap-unsdsn.org/wp-content/uploads/University-SDG-Guide_web.pdf)

2.3.1. Education for Sustainable Development

All of the SDGs are interconnected, and education is connected to all of the goals. SDG 4: Quality Education, aims to ensure that every child has access to quality education under equitable conditions; promotes the opportunity to learn throughout life (United Nations, 2015). SDG 4 (Quality Education) speaks particularly of higher education, as the SDGs are interconnected, and education is essential to all sustainable development. The goal also

specifically calls for accessible, equitable, and quality education for all (United Nations, 2015).

Further, Target 4.7 states,

by 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development (United Nations, 2015).

SDG Goal 16 emphasizes the importance of promoting peaceful and inclusive societies, providing access to justice for all and building efficient, transparent and inclusive institutions at all levels. SDGs 4 and 16 are considered "enablers", as they are both essential for the other Goals to be achieved.

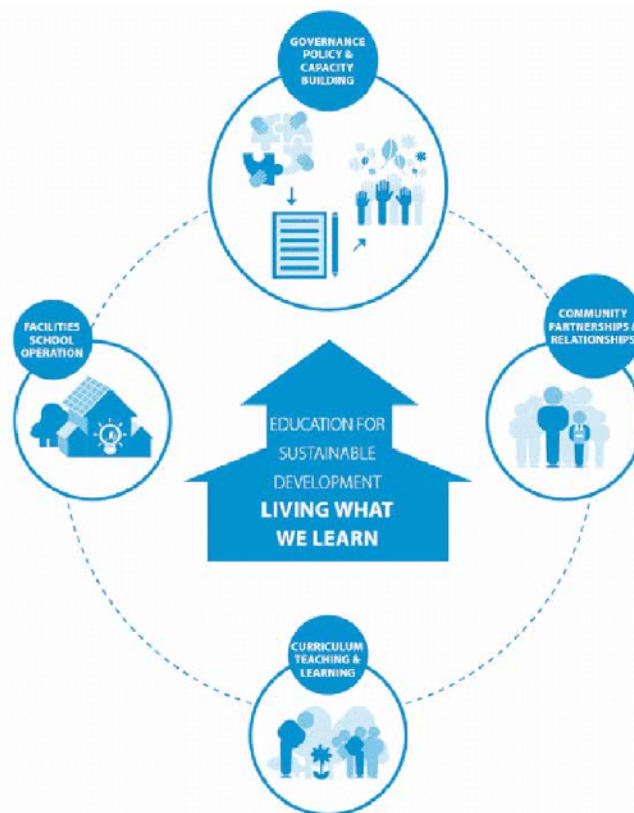
To achieve these goals, universities can embed sustainability utilizing tools such as the whole-institution approach, as illustrated below; however, UNESCO acknowledges that more research and data are required to measure the effectiveness of such tools (Hopkins, 2019). Rieckmann (2014) identifies in *Issues and Trends in Education for Sustainable Development*, a UNESCO report, the following key elements for whole-institution approaches:

1. An institution-wide process is organized to enable all stakeholders - leadership, teachers, learners, administration - to jointly develop a vision and plan to implement ESD in the whole institution.
2. Technical and, where possible and appropriate, financial support is provided to the institution to support its reorientation. This can include the provision of

relevant good practices examples, training for leadership and administration, the development of guidelines, as well as associated research.

3. Existing relevant inter-institutional networks are mobilized and enhanced to facilitate mutual support such as peer-to-peer learning on a whole-institution approach and increase the visibility of the approach to promote it as a model for adaptation (Rieckmann, 2014, p.48).

Figure 7: The Whole-Institution Approach Source: UNESCO, 2014



Note. From Education for Sustainable Development Goals. Learning Objectives, by. Rieckmann, M et al., 2017 (https://www.researchgate.net/publication/314871233_Education_for_Sustainable_Development_Goals_Learning_Objectives)

The SDGs also enhance the role of higher education institutions in providing advanced academic and life-long learning programs that will help graduates meet the challenges of the 21st century by addressing the ways in which technological advances reshape how we live

and operate today's economies (Ramos, 2020). A brighter future for humanity requires more innovation, research and interdisciplinary teaching in higher education.

Cities attract more people and provide transformational economic opportunities, and they are hubs of innovation and economic activity. According to the World Economic Forum Report (2017), higher education institutions should be at the forefront in working with their local communities to harness rapid and disruptive technologies of the Fourth Industrial Revolution so that these become sustainable. This, along with keeping up with the global economy and environment, means that universities must adapt, evolve, and undergo continual improvement. A further requirement for universities to remain highly relevant to society is that they should provide courses that simultaneously cultivate technical mastery and ethical responsibility toward human and planetary well-being (Penprase, 2018). Universities should promote more resilient, competent, enterprising, and innovative students and graduates by providing them with a motivating learning environment. Societal progress in achieving sustainability depends on our ability to transfer knowledge to action to effect real change by moving knowledge and research from the laboratory to the societal needs of people and organizations (Harvey et al., 2020).

To educate for sustainable development is to empower and motivate students by developing their sustainability competencies, thereby becoming active and critical sustainable citizens to help shape a more sustainable future. In UNESCO's 2018 publication *Issues and trends in Education for Sustainable Development*, key pedagogical approaches were identified as 1) a learner-centered approach; 2) action-oriented learning; and 3) transformative learning (Rieckmann, 2018). Many universities are finding effective ways to develop these

competencies through experiential learning. The role of universities as engines of transformational sustainability towards meeting the SDGs can be achieved through various concepts. One example is the 'Living Labs' (Purcell et al., 2019). Campuses as "Living Labs", according to Purcell et al. (2019), position sustainability as an intentional and aspirational strategy, taking sustainable development and the SDG framework as a means to that end. A Campus as a Living Lab can be described as "A Campus as a Living Lab is the integrated organizational, technological and socio-economic approach in which a university uses its assets and facilitates to investigate, test or demonstrate innovative technologies or services by, with and for their community." (Verhoef et al., 2019, as cited in Verhoef & Bossert, 2019, p. 40). The Campus as a Living Lab facilitates the collaboration of the on-campus professional sustainability team, the facilities staff, faculty, students, and other stakeholders in the University to tackle real-world sustainability problems within the university (Purcell et al., 2019). Fostering SDG Hubs and creating opportunities for experiential learning within higher education institutions serves as a sign that we are at the right time to reinforce scientific and theoretical understanding of how SDGs can be achieved through higher education (Chankseliani & McCowan, 2020).

The key to the success of the Campus as a Living Lab is leadership and acting with a shared purpose. Collaborations between and within universities could facilitate the attainment of the SDGs, enhancing higher education's ability to contribute to communities around the world in the areas of economic, environmental, cultural, and intellectual well-being (Purcell et al, 2019). "Leadership is needed to harness the social forces to inspire people to take action around a shared vision of the future. The change needs to be anchored in culture, as cultural change comes at the end of a transformation and not the beginning" (Purcell et al., 2019).

2.3.2. Challenges for the SDGs

There are numerous challenges with the SDGs. First, there is Chankseliani and McCowan's (2021) notion that the idea of sustainable development rests upon a set of political, moral, and epistemic assumptions that are not universally shared. This is especially true of the "enlightenment notion of progress and the existence of global capitalism...On the other side of the political spectrum, there are those who deny anthropogenic climate change, and scepticism of the role the role of international agreements" (Chankseliani and McCowan, 2021, para 6). While many of the objectives of the SDG framework reinforce each other, there are unavoidable trade-offs and tensions.

There are also questions as to whether a university, as a knowledge-focused institution, is capable of immediate and direct impacts on the world around it (Chankseliani & McCowan, 2021). Furthermore, academic freedom and institutional autonomy impede the full realisation of the potential of higher education (Chankseliani et al., 2021). Juxtaposing the national with the global development missions of universities raises the question of whether higher education can be decoupled from its immediate human capital and modernisation needs, and to focus on the global, on cultivating intellectual curiosity through education and research, and on implying a more holistic vision for higher education (Chankseliani et al., 2021).

Scharmer (2019) notes that it is not the traditional output of university knowledge that is the barrier to catalyzing social change.

The difficulties in implementing the Paris Agreement and the SDGs worldwide are not caused by a knowledge gap. The problem is lack of political will and knowing-doing gap: a disconnect between our collective consciousness and our collective action. This gap leads us to collectively create results that nobody wants: massive environmental destruction, societies breaking apart, and social media-induced mass separation from our deeper sources of self. (Scharmer, 2019, para 5)

Scharmer's argument is profoundly important to move towards a paradigm of societal transformation. To address profound global challenges, we need new transformational platforms and capacities that foster the "evolution of consciousness... and... upgrade our mental and social operating systems from ego-system awareness to eco-system awareness" (Scharmer, 2019, para 6). Scharmer (2019) is critical of current universities, in that there is a lack of 'vertical literacy' required to inspire transformative change. Scharmer (2019) argues that to achieve profound societal transformations; education systems need to incorporate this vertical literacy, which includes:

- Seeing yourself – i.e., self-awareness – both individually and collectively
 - Accessing your curiosity, compassion, and courage
 - Deepening the space for listening and conversation
 - Reshaping the type of organizing from centralized to ecosystem
 - Cultivating governance mechanisms that operate from seeing the whole
 - Holding the space for profound transformation: letting go and letting come
- (Scharmer, 2019, para 10)

According to Scharmer and Kaufer (2013), the future of higher education relies on turning an outdated curriculum into a much more individual and personalized path that meets the wants and needs of individuals who join such a community of change-makers and learners. Furthermore, providing practice fields are opportunities for learners and leaders to prototype new behaviours and new mindsets. In the future, higher education will very much need to be about the moral quality of graduates. This requires an introduction to social entrepreneurship in the curriculum instead of just focusing on a theoretical framework (Scott, 2020).

The SDGs also pose challenges for universities in their integration at a local level within curricula, research, operations and the community. Kawakubo and Murakami (2020) cite previous research indicating that roughly half of the SDG targets can be assessed nationally—where data can be obtained more easily—than at the local level; thus, targets have proven to be a challenge to utilize in a local context. This suggests that the need to come up with comprehensive data is one of the biggest obstacles to the achievement of the SDGs (Kawakubo & Murakami 2020). With this in mind, higher education institutions perceive that they need specific approaches, methods, and tools to facilitate the Sustainable Development Goals' systematic application in research and teaching (Filho et al., 2021); however, at present, there is very little literature on the suitable means to accomplish this.

The SDGs have also been criticized as being a neoliberal economic agenda in developing countries. There are two main arguments that critique the Sustainable Development Goals: 1) sustainable development is defined as “oxymoronic because it erroneously fosters the illusion of combining endless economic growth on a finite planet, social justice and

environmental protection” and 2) that “SDGs perpetuate an anthropocentric conception of development and sustainability antithetical to effective responses to the rupture of Earth system in the Anthropocene” (Adelman, 2018, “Abstract”). It is suggested that the SDG framework is unlikely to strengthen ecological sustainability and will only intensify impoverishment and inequity (Adelman 2018; Eisenmenger et al., 2020).

Kopnina (2020) presents arguments that support these challenges to emphasize that education for sustainable development and the SDGs demonstrates worrying tendencies and contradictions. Kopnina argues that it carries an “economy-centred anthropocentric bias” of sustainable development based on the broader objective of sustainable development, prioritizing economic measures concerning poverty alleviation and health improvements, but lacking in reducing population growth or consumption. As key strategies to address unsustainability, Kopnina proposes education that targets both non-anthropocentric ethics and pragmatically societal degrowth.

Eismenger et al. (2020) conclude that despite the criticism and failures, the SDGs still provide significant purpose through the framework’s vision, research and practices. Transformation towards sustainability requires advancements that go beyond the proposed SDGs; the development must merge a probability of prosperity for all with ecological integrity, without focusing on the growth-oriented metric of progress (Eisenmenger et al. 2020, as cited in Fioramonti et al. 2019).

Further key challenges are presented with SDG Goal 5: Gender Equality and SDG Goal 10: Reduced Inequalities. Despite the premise of ‘leaving no one behind’, there is a significant

gap in SDGs to reduce inequalities as non-binary people who identify in terms of their sexual orientation and gender identity. Mills (2015) argues that for inclusive development to address social exclusion, development actors must consciously design and implement policies that ensure:

- (i) that all people irrespective of their sexuality and gender identity are actively protected against social, economic and political forms of discrimination; and
- (ii) that health, education, and social protection resources that contribute towards individual wellbeing and overall socioeconomic development are made available to all those in need, leaving no one behind. (Mills, 2015, p.6)

To overcome many of these challenges, our education system needs to be humanized – to incorporate ethics and compassion to help people understand the relationship between humans, machines, and the planet (Razak, 2021). The growing complexity of environmental and cultural challenges is influencing the agenda in higher education. How education is delivered influences the way people learn, and this can influence their impact on the world. Burns (2015) proposes sustainability pedagogy as a template for designing a transformational sustainability learning experience that incorporates a thematic approach, works to challenge dominant norms, employs a relationship-based approach, and is grounded in a particular place. This pedagogical design is based on the wisdom of ecological systems, which serve our best interest in developing sustainable and regenerative systems (Burns, 2015). Burns (2003) suggests Indigenous knowledge should be incorporated into the curriculum to explore how the whole self might be intentionally incorporated into the design process for transformative learning.

There is also the need to acknowledge the role of higher education in colonial educational systems, as well as a responsibility to fulfill the *Truth and Reconciliation Commission (TRC) of Canada's Report: Calls to Action* (2012). "Indigenous learning and traditional ecological knowledge are as endangered as some species and habitats, ecopedagogy, ecocentric education, and education for wonder, in part inspired by these traditional forms of relating to the environment" (Kopnina, 2020, p.288). The two most relevant action items in this discussion are #62 and #64 of the TRC Report. These actions call on funding for post-secondary institutions to educate teachers on how to integrate Indigenous knowledge and teaching methods into classrooms, along with building student capacity for intercultural understanding, empathy, and mutual respect.

In the Summary of the Final Report of the TRC (2015b), Elder Reg Crowshoe explained that reconciliation requires dialogue, but the conversation must go beyond Canada's traditional approaches.

Reconciliation between Aboriginal and non-Aboriginal Canadians, from an Aboriginal perspective, also requires reconciliation with the natural world. If human beings resolve problems between themselves but continue to destroy the natural world, then reconciliation remains incomplete. This is a perspective that we as Commissioners have repeatedly heard: that reconciliation will never occur unless we are also reconciled with the earth. Mi'kmaq and other Indigenous laws stress that humans must journey through life in conversation and negotiation with all creation. (Summary of the Final Report of the Truth and Reconciliation Commission of Canada, 2015b, p.18)

By indigenizing our academic institutions and undoing of appropriation in our history, we promote the well-being of our communities. Decolonization can only occur when we identify ways to decolonize our practices and systems and discover and understand the ongoing impact of colonialism.

To address complex sustainability challenges, sustainability education needs to play a significant role in developing leaders who can foster a paradigm shift. Burns et al. (2015) emphasize the pedagogical practices that foster sustainability leaders, including: “observation and self-awareness, reflection, the exploration of ecological and diverse perspectives, and learning experientially and in the community” (Burns et al., 2015). Further, the SDGs can also be categorized into the following six transformation pillars: “(1) education, gender and inequality; (2) health, well-being and demography; (3) energy decarbonization and sustainable industry; (4) sustainable food, land, water and oceans; (5) sustainable cities and communities; and (6) digital revolution for sustainable development” (Sachs et al. 2019, p.805). This approach creates a framework that integrates all seventeen SDGs but reduces their collective complexity.

In summary, the literature illustrates that the SDGs are missing key elements such as Indigenization and social equity, particularly for people who identify themselves as non-binary. For this reason, these are issues whose solutions either cannot be agreed upon or are not global in nature and must be transcribed and interpreted. Indigeneity may not be specifically mentioned but is part of the bigger inferred principle within the goals of no poverty, good health, well-being and education. Nevertheless, challenges and criticism of the SDGs present an opportunity to reflect and identify means for continuous improvement. Higher education as

a place for critical reflection can help shape the agenda for moving beyond the 2030 Agenda. International university networks have been trying to play a critical role in moving toward sustainable development that goes beyond teaching sustainability and being involved in policymaking rather than simply implementation, but the full potential of universities using all opportunities such as living labs for sustainability through the whole-institution approach has not yet been realized (Kohl et al., 2021).

2.3.3. Institutional Rankings

There are numerous institutional rankings schemes that focus on sustainability and sustainable development in higher education. Rankings for sustainability in higher education are not new. One of the most popular global rankings is the UI GreenMetric World University Ranking which has been operational since 2010. In North America, the most widely used ranking for sustainability in higher education is the [Sustainability Tracking, Assessment and Rating System](#) (STARS), which is administered through the [Association of the Advancement of Sustainability in Higher Education](#) (AASHE) and has been in operation since 2008.

However, in recent years, there has been a shift towards including the Sustainable Development Goals, in institutional rankings, and STARS was realigned in 2020 to integrate the SDGs. QS is another popular global ranking, which in 2021 began to include aspects of the SDGs.

In 2019, the [Times Higher Education](#) (THE) began “Impact Ranking,” which provides a significant measure of universities’ contributions to the Sustainable Development Goals and can encourage action towards sustainability and sustainable development. THE’s Impact

Ranking is a helpful tool for universities to better understand pressing questions regarding sustainable development and to make it easier for them to collect and analyze data to monitor progress. While these actions can build capacity for action and decision-making regarding sustainable development and accelerate progress towards the goals, it is difficult to determine whether the new ranking evaluates universities' contributions to the SDGs in a meaningful way. The rankings of university contributions to the Sustainable Development Goals are meant to produce meaningful and helpful insights, even though rankings can present unintended incentives for institutions to create policies and decisions. The focus has been shifted away from the inputs such as university expenditures on SDGs and the outputs such as university research publications on the SDGs towards the outcomes targeting impact (or outcomes) such as contributions to sustainability of the community. By shifting the focus, ratings may be more relevant and representative, although it may make the comparison more subjective (Rosen, 2020).

University impact rankings may stimulate a discussion on how universities can best contribute to addressing numerous topics in sustainable development, including environmental, economic and social issues. As such, governments around the world are growing increasingly interested in these rankings. The SDGs may become a benchmark for dedicated funding for education and research pertaining to the SDGs, and for stronger public and government support for sustainable development and the SDGs (Rosen, 2020). Researchers and other stakeholders are examining impact rankings, and they may be refined in the future to better assess how universities are related to sustainable development. Tighter scrutiny would ensure that the ranking is not detrimental to higher education and that it is at the same time

more relevant to the academic community, more beneficial to society broadly, and more valuable to the government (Rosen, 2020).

Higher education administrators and academic thought leaders increasingly use rankings, and rankers are becoming significant players in the higher education landscape. Ranking systems have strengths and weaknesses, and almost every ranking system has some critics. There have been concerns raised with regards to a lack of understanding of ranking strategies and business plans. (Lim, MA 2021). Lim (2021) argues that university rankers are increasingly involved in the business of selling a form of control over the uncertainties inherent in higher education. Further, that DataPoints, a dashboard for the Times Higher Education Impact Ranking metrics, and consultancy reports produced by THE allow universities to have a sense of ownership and control over their strategies, and these organizations collect and produce the metrics that are part of this growing metric infrastructure, which embeds them more firmly into university governance processes.

Lim (2021) has illustrated how organizations develop university ranking business lines and products, with The Times Higher Education (THE) and other rankings being some of the most widely cited. Lim (2021) examines the growth of the entire rankings sector, focusing on developments around the THE ranking, which he argues has undergone the greatest change in terms of 'industrialization.' Further, Times Higher Education, by investing in the ability to gather and analyze quantitative data for different ranking tables, has developed an ability to re-design its datasets as well as external datasets and conduct its own analyses as a business product. THE demonstrates the growing industrialization of rankings (Lim, 2021).

2.4. Summary

This section investigated research done in this field of the role of higher education in society, the role of sustainability in higher education, and the role of SDGs in higher education.

Researchers have highlighted how universities play a central role in shaping society and creating a more just and sustainable future. Further, many institutions around the world are already integrating the SDGs into their curriculum, research, operations, and community programs. Using the Campus as a Living Lab has been a leading approach on how institutions are providing experiential learning opportunities to students and tackling real challenges within the campus or local community. On the other hand, it is clear from the literature that not enough is being done to integrate the principles of Sustainability and SDGs within the curriculum. The literature illustrates that the SDGs are missing key elements such as Indigenization and social equity, particularly for people who identify themselves as non-binary. Moving beyond the 2030 Agenda, there need to be more efforts around Indigenous rights and knowledge, as well as other worldviews, to help solve these global issues. Conversely, while rankings such as The Times Higher Education Impact Ranking may have their critics, they can provide profound insights into how institutions are making an impact and contributing to the Sustainable Development Goals. Ultimately, despite their flaws, the SDGs act as a global blueprint and language for creating a better world.

3. Methodology

I engaged in a qualitative, case study-based methodology to pursue my central research question: ***How have universities integrated the Sustainable Development Goals, and what lessons might be learned and applied therein?***

Specifically, (1) I surveyed and analyzed existing scholarly and gray literature that highlights SDGs in universities; (2) I defined categorical definition areas; (3) I then selected 20 key universities, conducted and analyzed an in-depth assessment of SDG implementation and impacts; (4) I will offer insights gained through participant observations and assessed SDG-associated training and information sessions; and (5) I then applied this in-depth assessment to a case study of SDGs at York University. Further details regarding my research design and methodology are offered below.

3.1. Literature Review

I focused the literature review on the following key themes, including (1) the role of universities within society, (2) the role of sustainability in universities, and (3) the role of SDGs in universities. I developed a concrete strategy to define parameters utilizing electronic databases such as the Omni Catalogue accessed through York University's Library, and Google Scholar. Some of the search terms I used are 'higher education and society', 'higher education sustainability', 'higher education SDGs', 'higher education sustainable development goals', and 'universities SDGs'. I applied a multi-modal selection of peer-reviewed articles, books, abstracts, reports, webinars, and websites with relevant information extracted to provide me with an understanding of the subjects related to my research question. I selected

articles to comprehend the literature in this field and understand the scientific knowledge produced thus far. For each of these articles, reports, and publications, I identified any relevant information which could be utilized to understand current trends, identify industry best practices, identify lessons learned, and identify any challenges within the integration SDGs in universities.

Key scholarly texts I identified include: Adelman, Sam. (2018), United Kingdom; Azeiteiro, U. (2021), Portugal; Chankseliani, M. (2021), United Kingdom; Finnveden, G. et al. (2021), Luxembourg; Fleacă, E. et al. (2018), Romania; Kawakubo, S. et al. (2020), Japan; Leal, F. et al. (2021), Germany; Lim, M. (2021), Australia; Michelsen, G (2020), Germany; Ramos, R., (2019), Spain; Rant, M. (2020), Slovenia; Renzo, M. et al. (2019), Australia; Rosen, M. (2019), Canada; Sonetti, G et al. (2019), Italy; Stott, L. et al. (2020), Spain; Shiel, C. et al. (2020), United Kingdom; Sachs, J. et al. (2019), USA; Sáez de Cámara, E. et al. (2021), Spain; van't Land, H. et al. (2021), France; and Verhoef, L.A. et al. (2019), Netherlands. The following reports were also identified to collect empirical data:

- SDSN: Accelerating Education for the SDGs in Universities (2020)
- Universities Canada Report: Canadian Universities advancing the Sustainable Development Goals (2021)

3.2. Definition of areas

My second step was to define a means for categorizing universities' functions into sections to utilize and apply within the research. I chose to adopt the definitions utilized in the Times Higher Education Methodology (2021) as it follows the whole-institution approach; the categories are as follows:

Governance & Administration: The processes through which higher education institutions are governed, administered, and organized to achieve the SDGs and how these are measured.

Awareness & Engagement: The promotion of campus-wide awareness about the SDGs, as well as participation, action, and impact, including student engagement, commitments, and partnerships.

Research & Innovation: Research related to SDGs – policymaking, problem-solving, technical and social innovation.

Curriculum: Knowledge for the future and 21st Century – teaching and integrating the SDGs at all levels; and ensuring that graduates have career-ready skills to solve pressing world challenges.

Operations: Universities operations and stewardship (including facilities, lands, physical asset management, finances and human resources).

Community Engagement: Universities relationship with its local, regional, national, and international communities.

3.3. Selection of Institutions

My third step was to select specific universities to review how they have integrated the SDGs. Through this review, I was able to identify specific evidence-based practices in support of integrating the SDGs within universities. This analysis complements my findings in the literature review and helps to facilitate the interpretation of trends and patterns, as well as providing a more solid analysis of how the SDGs are integrated within universities.

I used the Times Higher Education (THE) Impact Ranking to select a sample set of universities. I chose this ranking because it is the only global performance indicator that specifically measures universities based on the Sustainable Development Goals. THE Impact Rankings compare institutions in four main categories — research, stewardship, outreach, and teaching. This year, in the 2021 THE Impact Ranking, 1,117 universities from 94 countries and regions participated in the third edition (Times Higher Education, 2021). It should be noted that THE does have limitations, as it does not provide a clear reflection of all the global leaders, given that not all universities participate in rankings, including some elite universities. Further, THE does not adequately measure student engagement within institutions. Another challenge with THE Impact Ranking is that a significant amount of information submitted is qualitative evidence, which can be subjective and can be difficult for the reviewer to assess, particularly, if they are not familiar with the local context of the university.

To narrow the scope and provide a broad range of both global and local perspectives, I selected twenty Universities as an effective sample size to research how they have integrated

the Sustainable Development Goals within their institutions. I selected the ten institutions worldwide that ranked the highest in the Times Higher Education Impact Ranking as they have been identified as the university leaders in contributing to the SDGs from those who have participated in the assessment. To also include more of a Canadian context, I also selected the top ten best-ranked universities in Canada. These institutions are identified in the table below.

	Overall Ranking (THE)	University	Location	Ranking in Canada
1	1	University of Manchester	United Kingdom	
2	2	University of Sydney	Australia	
3	3	RMIT University	Australia	
4	4	La Trobe University	Australia	
5	5	Queen's University	Canada	1
6	=6	Aalborg University	Denmark	
7	=6	University of Wollongong	Australia	
8	8	University College Cork	Ireland	
9	=9	Arizona State University	United States	
10	=9	University of Auckland	New Zealand	
11	13	University of British Columbia	Canada	2
12	14	McMaster University	Canada	3
13	34	University of Toronto	Canada	4
14	39	University of Montreal	Canada	5
15	43	University of Calgary	Canada	6
16	46	Simon Fraser University	Canada	7
17	52	Western University	Canada	8
18	62	Concordia University	Canada	9
19	64	University of Alberta	Canada	10
20	67	York University	Canada	11

For each of these institutions, I identified and gathered evidence of best practices of how these universities have integrated the SDGs through the lens of all dimensions of the whole-institutions approach. I identified any noteworthy features, along with any challenges, and

documented them by utilizing a matrix table for each of the 20 institutions, employing each category of the whole-institution approach. I looked for what each of these institutions have done to integrate the SDGs. I looked specifically for any methodologies that measured impact and identified assessment tools, processes, engagement practices/tools, reporting methods, plus any other information or lessons learned. I obtained this information through websites, publications, and the Times Higher Education Impact Ranking. Appendix A presents examples of best practices regarding how the SDGs were integrated within governance & administration, awareness & engagement, research, curriculum, operations, and community engagement.

3.4. Observations and Assessment of SDG-Associated Training and Information Sessions

My next step was to gather information through observations at SDG-associated training, information sessions, and meetings. This qualitative method provided me with a holistic and practical understanding of how universities are integrating the SDGs. As a result of the COVID-19 pandemic restrictions, all engagement sessions were virtual. These sessions provided a qualitative approach to gain an in-depth understanding of the best practices, opportunities and challenges. I looked for what people are doing, what tools and processes are being used, how they are measuring impact, and how they are using engagement tools, in addition to what lessons have been learned and what challenges are identified. During these sessions, I observed and recorded actions, behaviours, support visuals, and any other relevant data to support this research. The different sessions, as noted in Appendix B,

offered holistic and practical lessons learned and complemented the analysis of the selected Higher Education Institutions and how they have integrated the SDGs.

3.5. York University Case Study

In my final step, through the lens of Manning's (2017) *Organizational Theories in Higher Education*, I utilized York University as an illustrative case study to highlight the ways in which universities can integrate the SDGs into higher education. York University was chosen because it has already made progressive steps to integrate the SDGs. I collected information to identify what York University has already done to integrate the SDGs. I then analyzed this case, using the definition area categories as previously outlined, to identify where York University has already succeeded in implementing best practices. The findings also pose an opportunity to identify gaps and areas for continuous improvement in the incorporation the SDGs.

4. Findings

This chapter details how universities have integrated the Sustainable Development Goals. In recent years, universities around the world have begun integrating the SDGs through a whole-institution approach, which includes both university academic mandates and campus operations.

By identifying and analyzing the overall ranking universities and the top Canadian universities in the THE Impact Ranking, numerous insightful and inspirational ideas were identified—many of which are already being put into action and can be scaled at other institutions. The key findings illustrate how the SDGs offer opportunities to advance a university’s mission and strengthen collaboration between each institutional dimension. The key findings are presented in thematic categories identified in the previous section: governance & administration, awareness & engagement, research, curriculum, operations, and community engagement.

4.1. Governance & Administration

Universities are starting to integrate the SDGs through their governance and administrative processes. To do so, significant administrative processes and resources for tracking, measuring, and reporting are required. The SDGs are complicated, with 169 targets and 231 unique indicators that are tailored to national targets. As a result, measuring progress in meeting the SDGs in a local university context can be challenging. What complicates matters

further is that there is no single global standard on university SDG reporting—other than THE Impact Ranking—and universities face the challenge of determining what data is relevant to include and how to gather it. Many universities around the world are participating in the THE Impact Ranking which is providing universities with a benchmarking tool to compare itself to other institutions and as a means of identifying areas for improvement. One tool that does seek to embed the SDGs is the [Sustainability Tracking, Assessment and Rating System](#) (STARS), administered by the [Association for the Advancement of Sustainability in Higher Education](#) (AASHE) which has recently aligned with the Sustainable Development Goals. While STARS is by far the most common sustainability rating system in higher education throughout Canada and the United States, it is not yet recognized as a universal standard for tracking and reporting SDG implementation in universities.

Many universities are beginning to develop their own methodology to create a baseline measurement for tracking progress. They are compiling data and information to publish their efforts related to SDGs—often in the form of SDG Reports, Sustainability Reports, or Voluntary University Reports (many universities are also producing more than one type of report). [The University of Manchester](#) (England) and the [University of Auckland](#) (New Zealand) provide examples of SDG reporting. These new reports require system-wide efforts for internal communication, awareness and engagement to support the implementation and tracking of the SDGs. The reports show how university researchers, educators, operations, and engagement initiatives are contributing to the advancement of the SDGs. Some universities are mapping, tracking and inventorying institutional activities such as courses, research, and extracurricular activities such as clubs. To support these tracking efforts, an SDG list of keywords is used to identify SDG-relevant activities. For instance, the [University of](#)

[Auckland](#) has a comprehensive keyword list. The University of Toronto has also developed a [methodology](#) utilizing unique keyword searches to do an inventory of all of their courses, research alignment, projects, students clubs and various other institutional initiatives. A keyword list is also utilized for bibliometrics, another key metric identified, where THE Impact Ranking retrieves data from Elsevier to calculate research metrics. Bibliometric tracking is also an important tool for tracking the progress of research publications from institutions aligned with the SDGs.

To measure the impact of activities, some universities have also identified using the [SDG Impact Assessment Tool](#)—a free online learning tool developed by The Gothenburg Centre for Sustainable Development at the University of Gothenburg—to visualize how a self-assessment of an activity, organization or innovation affects the SDGs. Through this application, the user is stimulated to gain a deeper understanding of sustainable development, the SDGs and the complexities of the latter.

Measuring impact and understanding institutional progress is complicated, and for this reason, Voluntary University Review (VUR) is beginning to become a means of measuring impacts and understanding gaps to be addressed for continuous improvement. Concordia University is the first university in Canada to start a VUR to determine how best to maximize their impact and engagement in line with the SDGs. Carnegie Mellon University was the first to complete a Voluntary University Review, which was published as a [report](#) in 2020. SDSN Canada defines the purpose of the voluntary review process as “(1) increase awareness on the Sustainable Development Goals (SDGs); (2) Increase engagement on the SDGs; (3) take

stock of action on the SDGs; (4) communicate action for the SDGs; (5) identify opportunities for improved actions towards achieving the SDGs” (SDSN Canada, 2021, “News” section). This process is one of several being carried out by countries and cities that provide quantitative analysis of SDG progress.

4.2. Awareness & Engagement

Awareness and engagement are critical components towards integrating the SDGs. There are various forms of engagement, which include internal and external engagement in addition to partnerships and collaborations. SDG Goal 17 – *Partnerships for the Goals* – is identified as the most important goal of all the SDGs, and in my findings, there is strong evidence across all empirical data with regards to successful institutional partnership and collaboration. It is clear that partnerships have been made between academia, civil society, business, and government, to achieve the ambitious goals of the 2030 Agenda, and there are many forms of partnerships within a campus, and with local, regional and global communities.

For example, many universities have become signatories to various collaborative coalitions with the commitment of creating a more sustainable future by advancing the SDGs.

Universities in Australia and New Zealand have a strong commitment to embed the SDGs within their institutions, which is demonstrated by their dominance in the THE Impact Ranking with five institutions within the top ten in 2021. A number of these institutions have pledged to the "University Commitment to the SDGs," an initiative developed by the Sustainable Development Solutions Network (SDSN) Australia/Pacific to integrate the SDGs.

This is an agreement signed by many of their institutional networks, from the selected Universities in this research, RMIT and the University of Wollongong are signatories. The following illustration is the official University Commitment to the SDGs.

Figure 8: University Commitment to the SDGs Source: SDSN, 2017

Box 4: University Commitment to the SDGs

The 17 Sustainable Development Goals (SDGs) and their associated 169 targets were agreed by all countries at the United Nations in September 2015 and constitute a shared global framework of development priorities to 2030. They aim to bring an end to extreme poverty, promote prosperity and wellbeing for all, protect the environment and address climate change, and encourage good governance and peace and security.

Universities will have a vital role to play in addressing these critical global challenges and achieving the Sustainable Development Goals. Universities have a responsibility through their teaching to equip the next generation of leaders, innovators and thinkers to understand the global challenges facing the world and the role they can play in rising to meet these challenges. Through their research and training of research leaders, universities are at the forefront of finding sustainable social, economic, environmental and technical solutions to global problems. Finally through their own operations universities can pioneer innovation and can set an example to other sectors and businesses.

It is important for the future of the world that all universities play their part in achieving the Sustainable Development Goals.

Hence, we, the undersigned universities:

- recognising the enormous social, economic and environmental challenges facing the world
- recognising that future development must take place in a way that is socially, economically and environmentally sustainable
- recognising that the Sustainable Development Goals establish an agenda for the achievement of sustainable development by 2030
- stressing the vitally important role that universities can play in achieving a sustainable future through teaching, research and operations

Agree that we will:

- support and promote the principles of the Sustainable Development Goals
- undertake research that provides solutions to sustainable development challenges
- provide the educational opportunity for our students to acquire the knowledge and skills needed to promote sustainable development
- contribute to the achievement of the Sustainable Development Goals by ensuring our campuses and major programs are environmentally sustainable and socially inclusive, and
- report on our activities in support of the Sustainable Development Goals

Note. From Getting Started with the SDGs in Universities, by SDSN Australia/Pacific, (2017), p.39 (https://ap-unsdsn.org/wp-content/uploads/University-SDG-Guide_web.pdf)

Another example of commitment by institutions, is the [*Joint Statement*](#) of Global University Leaders on the 2030 Agenda for Sustainable Development. The statement reaffirmed their commitment to the Sustainable Development Goals (March 2021) at a virtual event, *The Role of Universities in the 2030 Agenda*. There were 58 signatories from different institutions across the world; the Canadian institutions that signed the statement are the University of British Columbia, the University of Alberta, the University of Ottawa and the University of Toronto. The signatories committed to the following shared visions:

- Embedding sustainability across our activities, operations, monitoring and evaluation. Through unwavering examples, we will foster and promote sustainable development on and off campus.
- Enhancing competencies in SDGs by empowering our students, faculty and staff with the knowledge, skills, and motivation to understand and address the SDGs.
- Supporting a wider spectrum of research work needed to address global challenges, including blue-sky discovery and transdisciplinary research, and to better inform policy-making.
- Fostering innovative solutions for sustainable development by engaging multiple stakeholders, including government, civil society and the private sector.
- Leveraging technology and upholding open science where appropriate to facilitate sustainable partnerships and context-specific, problem-solving collaborations across borders. (International Association of Universities, Higher Education and Research for Sustainable Development, 2021, “News” section)

Other key findings concerning global coalitions include the [Higher Education Sustainability Initiative](#) (HESI), the [University Global Coalition](#), [UNITAR Declaration on Global Engagement](#), [SDG Accord](#), and the [Race to Zero](#).

Overall, the findings show that public commitment to these principles within institutional governance provides powerful motivation to strategically adopt and embed them across the entire institution. Additionally, as a commitment to advancing the SDGs, many institutions are integrating them within their institutional strategic academic plans. Recently, most of the highly ranked universities have also embedded a purpose-driven statement in their brand promise that aligns with the Haski-Leventhal (2020) notion that purpose activates the mission, values and actions, and the actions confirm the mission and the purpose; examples include:

- The University of Auckland “To make a positive difference to the world”
- The University of Manchester “To advance education, knowledge and wisdom for the good of society”
- The University of Sydney “Leading to improve the world around us”

These purpose-driven statements not only have reputational benefits, but they are also powerful tools that engage and motivate staff, faculty and students.

Institutional partnership also plays a key role in integrating and advancing the SDGs. One example is the Sustainable Development Solutions Network (SDSN), a global network with regional chapters, developed in 2012 through the support of the UN Secretary-General and currently led by President Jeffrey Sachs. SDSN’s national and regional networks are strengthening partnerships with governments, business organizations, and civil society. SDSN’s networks play a unique role in addressing today’s global challenges through their

program of higher education, advanced research, policy analysis, and facilitation of multi-stakeholder deliberations (SDSN, 2021). The SDSN networks support the implementation of the SDGs at a local, national and global scale and provide a forum for collaboration and access to tools and resources such as [*Accelerating Education for the SDGs in Universities: A guide for universities, colleges, and tertiary and higher education institutions*](#). This guide is an updated version of a toolkit designed to assist higher education institutions in providing their learners with the skills, knowledge and mindsets they need to ensure their contributions to achieving the SDGs. The guide is further supported by a [website](#) with a selection of global case studies of the SDGs in Higher Education. It is divided into four categories: 1) curricular initiatives for university students; 2) co-curricular initiatives for university students; 3) community at large; and 4) university staff and processes (SDSN, 2021).

SDSN is also the host of the [SDG Academy](#), which is used by many universities as a free, open educational resource on sustainable development from the world's leading experts. Further, [SDG Academy X](#) provides free online MOOCs from the SDG Academy through edX— an online educational platform—where a series of SDG-related courses can be audited for free or through a verified certificate for a nominal fee (SDSN, 2021).

The Canadian chapter of SDSN is hosted by the University of Waterloo and is part of the global SDSN movement that promotes solutions for sustainable development by building a coalition of universities, colleges, research centres and knowledge institutions. SDSN Canada mobilizes the scientific and technological expertise of Canadians to facilitate learning and accelerate problem-solving in support of the 2030 Agenda and the Sustainable Development

Goals (SDSN, 2021). To facilitate collaboration amongst members and partners, SDSN Canada is the host of Together Ensemble, Canada's national conference on the SDGs.

SDSN also offers the SDSN Youth program, which educates young people about sustainability and provides them with opportunities to impact change by creating sustainable development solutions. The mission of [SDSN Youth](#) is to furnish young people with a platform to connect through a campus SDG Student Hub and to collaborate and integrate their ideas and perspectives into national and regional pathways towards the SDGs. This type of SDG integration shows promise in promoting stronger engagement among students. Resources and tools are provided to hub coordinators, with programming, allowing students to obtain a non-credit certification (through SDSN) to encourage students to learn and take action on the SDGs. SDG Student Hubs are growing in popularity within university members of members of SDSN, and Canadian universities with SDG Student hubs include Acadia University, Dalhousie University, McGill University, the University of British Columbia, the University of Manitoba, the University of Saskatchewan, the University of Toronto, the University of Waterloo, and York University. The University of Waterloo's SDG Hub is known as the Impact Alliance. (SDSN, 2021).

Similarly, [Relmagine 17](#) is another alliance of students collaborating on realization of the SDGs through intersectional and interdisciplinary collaboration. The purpose of the group is to amplify youth action towards SDGs and foster interdisciplinary collaboration, knowledge-exchange, and program development among higher education institutions. Participating institutions include the University of British Columbia, the University of Calgary, Université Laval and the University of Waterloo. The group recently published: [RE17 Toolkit: Mobilizing](#)

[Youth for the Sustainable Development Goals](#), which is a guide for running an alliance with keys to success, inspirational case studies and identification of obstacles and barriers. (Relmagine, 2021)

Another example of partnerships is the [University Global Coalition](#). Working with the UN and other stakeholders, it serves as a collaborative platform for universities and higher education associations around the world to advance the SDGs and create a more sustainable future for all. The University Global Coalition calls on universities worldwide to take on leadership roles, to engage, and to collaborate. As a movement, it creates opportunities for action, amplifies the voice of higher education, and links higher education to the most relevant global initiatives and policies. The Canadian university signatories include Carleton University, Dalhousie University, McGill University, the University of British Columbia, the University of Waterloo, and York University.

[Universities Canada](#) is also building partnerships among universities to comprehensively embrace the SDGs, and in 2020 launched a program to raise awareness of SDG projects on Canadian campuses. The initiative—funded by the federal government’s SDG funding program—investigates how Canadian universities are fundamental to a global movement to advance the SDGs with practical solutions for sustainable development. As a part of the program, Universities Canada has facilitated several collaboration sessions involving university leaders to advance SDGs. They are also mapping initiatives from universities throughout Canada.

College & Institutes Canada (CICAN) also made a commitment to accelerate SDGs within Canadian colleges and has published a useful resource: [*SDG Toolkit for Canadian Colleges and Institutes, A practical guide to the United Nations Sustainable Development Goals for post-secondary institutions*](#). While the toolkit was developed with the intent of being utilized specifically by colleges, much of it is also applicable to universities.

The Association of Commonwealth Universities (ACU) has also developed a partnership network for its for higher education members to help advance the SDGs, primarily through collaboration and knowledge sharing of best practices. ACU has also partnered with the University of Manchester to develop an [*online course*](#) on the SDGs, titled *Creating a Sustainable World: 21st Century Challenges and the Sustainable Development Goals*. The course was designed for the Queen Elizabeth Commonwealth Scholarship.

Awareness & engagement are critical components in integrating the SDGs within universities to build a mindset and culture around the SDGs and to gain momentum to scale impact. The SDGs are very broad-based and can be interpreted as big lofty goals, where people do not know how to integrate them or how to relate to them. Involving the community by showing where and the SDGs pertains to them is important, as well as identifying what they can do and where they can take action. To address these issues, many universities are developing awareness & engagement strategies. The various tools are identified below:

First, many universities participate and promote the [*SDG Action Zone*](#), a three-day event during the UN General Assembly that brings together UN leadership, academics, activists, government officials, changemakers, and business leaders; it is open and free to everyone.

The purpose of the event is to cultivate the community and build momentum to transform the world for people and the planet. To engage staff, faculty and students, some universities are promoting the SDG Action Zone and are hosting their own corresponding events on campus, while utilizing social media assets tools for engagement.

Second, the [Global Goals Week](#) is another event that many universities are actively promoting this annual week of action. The purpose is to mobilize communities for SDG action and solutions for the planet and people through a shared commitment among over 130 partners across civil society, business and academia.

Third, many institutions are engaging their communities with speaker series or podcasts to inspire awareness and action for the SDGs. A great example is the University of Alberta's "[Global Goals Talk](#)," a 17-minute discussion for each of the 17 SDGs (run by UAlberta International). Each talk consists of a guest speaker, either an internal faculty or an external expert, and videos of the event are posted online on publicly accessible websites such as the University of Alberta's website and YouTube.

Fourth, another unique engagement tool is the [17 Rooms](#) which was recently implemented at both Queen's University and the University of Toronto. This concept was developed by The Brookings Institution and the Rockefeller Foundation. 17 Rooms is an open-access methodology that supports community dialogue for SDG action and is a great tool for advancing SDG collaboration across campus and fostering action among students, staff, and faculty. The purpose is about engaging in conversations, not about doing presentations. The event can be done in person or virtually, and participants are divided into 17 rooms where

each room needs to come up with tangible action items (1-3) which can be attained within 12-18 months.

Fifth, there are numerous gaming applications that are being utilized by universities to engage community members in SDGs. As youth resonate with gaming tools, these are valuable engagement methods. Key findings include the following:

- The [2030 SDGs Game](#): a multiplayer, in-person, or virtual card-based game that simulates bringing the 'real world' into 2030. Events of the 2030 SDGs Game are held in a variety of settings, including corporate, educational, and community venues. The experience, designed in Japan in 2016, has become an impactful social phenomenon in Japan, with extensive media engagement and over 100,000 participants.
- [Go Goals!](#): an SDG Board game aimed at children to help them understand the SDGs. It is available for download and can be easily assembled with instructions.
- [Kahoot](#) SDGs Trivia Games: a large selection of SDG-themed games that are available for instant play. There is also the ability to create your own SDG game.
- [SDGs in Action](#): a mobile app with an educational tool to inspire action on the SDGs. Students can track their own action and progress on their SDG initiatives.
- [The World's Future](#): a social simulation game in which players assume leadership roles, experiencing the pressure of making trade-offs and the thrill of discovering

synergy in the pursuit of sustainable development. In the Spring of 2021, a new [training program](#) was launched to train ten SDSN Canada members as moderators to run the simulation on campus for the 2021-2022 academic year.

- [Save the Future](#): an online social simulation game that teaches the implementation of SDGs in a format where players need to balance short-term goals with long-term consequences.
- The [SDG Game](#): an interactive game created by Global Compact Network Netherlands to raise awareness of the SDGs.
- [Games 4 Sustainability](#): an online platform of resources for learning, teaching and practicing sustainability through a collection of serious sustainability-themed games.
- [SDGs Flashcards](#): a game developed by Gaia Education in collaboration with the UNESCO GAP Secretariat. The cards can be utilized as a sustainability training tool to enable problem-solving in group conversations.

Student engagement is a key element towards integrating the SDGs within universities. The SDGs have explicitly called on universities to take part in achieving the goals—specifically because they work closely with the generation who will bear the brunt of the problems. Critically, youth will have a major role to play as necessary agents of change in successfully achieving the 2030 Agenda within educational institutions, communities, cities, and

municipalities. Already we have seen many notable activists, such as Greta Thunberg, who are mobilizing action by voicing their demands for change in cultural attitudes and practices that will lead to real solutions for climate change and social justice. Despite the importance of student engagement at universities, the THE Impact Ranking does not adequately measure this factor; however, it is a critical component of integrating the SDGs within universities.

The [Foundation for Environmental Stewardship](#) is a Canadian not-for-profit organization that offers a student engagement opportunity for post-secondary institutions, and high school programming that specifically aids in teaching the concept of the SDGs. The program is called [SDGs – LAB](#), and there are three components: 1) *Launch* – which is an educational program on the SDGs; 2) *Activate* – provide technical skill development and 3) *Boost* – which is an application-based program to tackle solutions for real-world challenges.

Competitions are also great SDG engagement tools. For example, [Western University's World's Challenge Challenge](#) invites university students to think big and come up with a plan to make the world a better place. As part of the challenge, students form interdisciplinary teams (two to four members) develop and pitch a solution that tackles one or more of the SDGs. Competitions take place on the campuses of the participating institutions, and the winning teams advance to the annual World's Challenge Challenge Global Final, which is hosted by Western University. Participation has included universities from Canada, Europe, Japan, Australia and New Zealand. The Canadian universities involved include Concordia, Dalhousie, McMaster, UBC, Alberta, Calgary and Waterloo.

[Map the System](#) is another unique competition that engages students and educators to obtain deep knowledge and awareness of pressing environmental and social challenges using the systems thinking approach. In Canada, the competition is managed by the Institute for Community Prosperity, and the Canadian institutions that participated in 2021 are Mount Royal University, the University of British Columbia, Wilfrid Laurier University, Humber College, Trent University, Université de Sherbrooke, the University of Alberta and the University of Waterloo.

Another example of a student challenge is the [Esri ArcGIS StoryMaps Challenge](#). The challenge is themed around the SDGs, and in this competition, students utilize ArcGIS to develop StoryMaps for storytelling. The Esri competition has received entries from students at universities from all over the world, and the winning stories are featured on the Sustainable Development Solutions Network website [SDGs Today: The Global Hub for Real-Time SDG Data](#).

4.3. Research

Research is one of the most profound ways that universities are integrating and advancing their pursuit of the SDGs. They are addressing the challenges with a significant positive impact, and it is encouraging to uncover such a large number of outstanding examples from around the world. SDG implementation relies on knowledge, solutions, pathways, and innovations provided by the research community. Each institution brings its own strengths and areas of expertise to the process, and it is this diversity that is critical to addressing the SDGs. In *Moving forward together: Canada's 2030 Agenda National Strategy*, the Federal

government calls on university researchers to contribute by identifying gaps in Canada's efforts to meet the SDGs and helping to better understand the social, economic, and environmental needs of underrepresented populations.

McMaster University, recognized as the most research-intensive university in Canada, has aligned research with the SDGs. This alignment can have a significant positive impact on communities and the planet, and this corresponds with McMaster's research philosophy, in that research has the power to shift policy, impact organizations, and improve people's lives locally and globally. At McMaster, researchers collaborate across disciplines to study the world's biggest challenges, and this transdisciplinary approach is integral in their commitment to achieving their goals. McMaster's research excellence is informed by six core values as outlined in their Strategic Plan for Research (which can be used as a guide for aligning research with the SDGs):

- Collaborate across faculties
- Insist on equity, diversity and inclusion in research
- Follow a holistic, cross-campus approach
- Prioritize societal impact
- Cultivate government, community and UN stakeholder partnership
- Share knowledge and demonstrate thought leadership (McMaster University, 2021 "Aligning Research" section)

To advance research on the SDGs as well as build awareness and partnerships, McMaster University offers a \$100,000 / year SDG Funding Program. A prominent example of

collaboration between the private sector and university research is The McMaster University Automotive Resource Centre, which is one of North America's leading research facilities in electrified vehicles; here, they are collaborating with industry partners to advance SDG 7 – ensuring access to affordable, sustainable energy for all.

Throughout my research, I have found that many universities are integrating the SDGs through the concept of the Campus as a Living Lab (Verhoef et al., 2019). This concept combines research, curriculum, operations, and community engagement to create an opportunity for studying real-world challenges and implementing innovative solutions. As universities have a significant ecological footprint, there are multiple benefits; the Campus as a Living Lab allows students and researchers to use the campus facilities and the local community as a learning environment, testbed, and demonstration site for innovative solutions which can be scaled from campus to real-world challenges. Key findings include:

- [University of Toronto's Campus as a Living Lab \(CLL\)](#) and Community-Engaged Learning (CEL) are programs where students can work directly on real-world sustainability problems of interest to the University, while contributing to its operational sustainability goals. Among the most important components of these projects is to find new ways to involve students in the analysis of operational policies, guidelines and plans, as well as to make suggestions for improving them to be in line with other best practices. The Campus as a Living lab with its integration of research and teaching, is a part of the University of Toronto's ambitious target to decarbonize and to produce a Climate-Positive campus.

- [The University of Alberta has a Campus as a Living Lab](#) where research projects use the university's campus as a testing ground for sustainability solutions. One example is the [Solar Greenhouse Project](#), bringing together stakeholders from across the institution to develop innovative technology and transform their campus community garden.

The following resources are key findings of best practices for the Campus as a Living Lab:

- The University Campus as a Living Lab for Sustainability: A Practitioner's Guide and Handbook https://campusaslivinglab.org/wp-content/uploads/2019/06/new_RZ_Living_Lab_handbook_9.5.19.pdf
- Website: Campus as Living Lab <https://campusaslivinglab.org/>
- Living Lab Methodology https://u4iot.eu/pdf/U4IoT_LivingLabMethodology_Handbook.pdf
- MIND b4 ACT: Living Lab Guide <https://mindb4act.eu/documents/living-lab-guide/>

Through research activities, universities are providing knowledge, solutions and innovative pathways to the implementation of the SDGs within the local and global community.

Additionally, a [report](#) published in 2020 by Elsevier analyzed university research and revealed both strengths and gaps in university efforts to realize the SDGs, and can be used as a springboard for future university research endeavours.

4.4. Curriculum

Universities are beginning to integrate the SDGs within the curriculum to solve real-world challenges through both educational awareness and applied experiential learning. A key aspect of the role of universities is in the development of future leaders, and, providing them with the knowledge, skills and motivation to understand and address SDGs. Many universities are reorienting curricula towards sustainability and are incorporating the SDGs within the curricula of all disciplines and with curriculum-specific courses. Additionally, entrepreneurship in curriculum, with a focus on SDGs, can be another key driver to societal transformation at both a local and global level.

Teaching sustainable development is a growing global movement. It even has its own dedicated day—[World Sustainable Teach-In Day \(WSDTID\)](#)—led by the Hamburg University of Applied Sciences (Germany), which was held this past year on December 2, 2021. Several universities have been involved in this decade-long movement with the purpose of raising and spreading awareness of the SDGs, and the theme for 2021 was to accelerate progress towards achieving the SDGs at the grassroots level by focusing on the 3 “P” s – People, Planet and Prosperity. The program included live lectures from individuals who are contributing in meaningful ways that address the SDGs at the local, regional, or even national level.

Commonly identified challenge is not knowing precisely how to embed the SDGs within curriculum. To combat this challenge, SDSN Canada has recently launched a new Community of Practice for faculty members to share teaching ideas and resources for the

SDGs, and to identify best practices. The newly formed working group consists of faculty members from universities across Canada who are seeking knowledge-sharing and are developing a network of resources and tools. Some universities are also beginning, on their own, to implement support resources for their faculty members to integrate the SDGs within curriculum. For example, the University of Saskatchewan has developed a [Teaching & Learning Workbook](#) as a resource to assist faculty members to integrate the SDGs by setting out objectives, impacts, and learning outcomes.

Incorporating the Campus as a Living Lab was also a common theme identified within curriculum. As an example, the University of British Columbia's [SEEDS Sustainability](#) (Social Ecological Economic Development Studies) is a multidisciplinary program that uses the campus as a living laboratory to create societal impact by incorporating students, research, faculty, and community partnerships to solve complex challenges. UBC is a pioneer in this space and already has over one thousand projects spread over twelve faculties. One example of a project is [Construction and Demolition Waste Benchmarking](#) – with the objective to reduce waste created from construction, demolition and renovations on campus.

Some universities are also creating SDG-specific programs. For example, the University of Manchester has created an online course called "[Creating a Sustainable World: 21st Century Challenges and the Sustainable Development Goals](#)". The course is open to all students from any discipline and is designed with a unique interactive experience that works across disciplines to engage students with real-world challenges and apply knowledge and skillsets to problem-solving. The course has two core modules 1) Sustainability and Goal 17: Partnership to achieve the Goals and 2) Sustainable Development Goals. The students can

take six of the SDG modules for ten credits or take all 17 SDG modules for 20 credits, the latter of which includes a component where students apply their knowledge and skills to a project set by external organizations. Another example is The University of Auckland (New Zealand), which has also developed SDG-specific courses.

Increasingly, micro-credentials and digital badges are also playing an important role in integrating the SDGs within curriculum, and are also becoming a means of transforming education, lifelong learning, and skills development. An example is RMIT University's (Australia) [Global Citizenship – SDG 101](#) micro-credential course, which is an 8-hour online course recognized by the UN Global Compact. Another example is from La Trobe University in Melbourne Australia, which created a [massive online open course \(MOOC\)](#) on the SDGs and how to achieve them. Many students are beginning to utilize these bite-sized courses, which have been offered by universities for some time, allowing institutions to positively influence their fields of expertise while helping learners to stand out in the job market.

4.5. Operations

Universities are integrating the SDGs through their operations; sustainability efforts to “green the campus” have become increasingly important for universities around the world over the past decade. Key findings of this research identify that university operations are integrating the SDGs, particularly through *Goal 12 (Responsible Production & Consumption)*, *Goal 7 (Clean & Affordable Energy)* and *Goal 13 (Climate Action)*. Many institutions are setting net-zero carbon targets that align with the Paris Agreement and the Intergovernmental Panel on Climate Change (IPCC), with target dates of 2050 or before. To achieve this, universities are

developing comprehensive strategies to reduce their carbon footprints, making decarbonization the most significant operational effort. As owners of large buildings and facilities, universities are recognizing the responsibility for reducing the amount of GHG emitted by their own operations. As mentioned, most of the institutions have already set carbon reduction targets of net-zero, and some universities are striving even further and paving the way for more ambitious targets. For example, Arizona State University, and most recently, the University of Toronto, have announced their intent to become 'Climate-Positive' Campuses. Climate positive goes beyond achieving net-zero carbon emissions by removing carbon dioxide from the atmosphere (also known as carbon-negative). As a means of decarbonization, many institutions are in the process of developing climate action plans which include both direct emissions and non-direct emissions from travel, and the procurement of goods and services.

Universities are also integrating SDG principles within their finances. As long-term investors, universities are recognizing their responsibility to manage investments and to accelerate the transition to a low-carbon economy and mitigate the growing risk that climate change poses. Many institutions have identified that they are integrating Environmental, Social and Governance (ESG) principles or completely divesting from fossil fuels within their investments.

The University of Toronto is also integrating SDGs as the framework for sustainability within one of its current capital construction projects for student housing. The project is led by Danish architects Christensen & Co (an architectural firm with a focus on sustainable development) who are integrating SDGs within the facilities and campus development project.

To further understand how to integrate SDGs within facilities capital projects, I participated with colleagues from York University, as well as staff from Concordia University and the University of Toronto, in a workshop organized by Christenson & Co. In the workshop, the challenge identified by facilities staff is the struggle of relating to what they often perceive as lofty goals, and of how to measure their own impact. The workshop identified the steps for integrating the SDGs within facilities (such as capital buildings projects), which include awareness and education to understand the SDGs (including the targets), defining priorities, screening the targets, setting goals, integrating them within the projects, reporting, and communications. The benefits identified in the workshop include providing an overall framework for discussing sustainability holistically, developing a sustainability mindset, and providing a communication tool for documenting sustainability within buildings with a high degree of architectural quality to create sustainable value.

Developing pathways and long-term planning for decarbonization is an arduous process. For this reason, the whole-institution approach and utilization of the Campus as a Living Lab is a perfect way to tackle these significant challenges, bringing together operations, research and experiential learning to find innovative (technical and social) solutions to reduce and eliminate both direct and indirect emissions.

4.6. Community Engagement

Localizing the SDGs is about fostering strong community connections, and many universities are anchor institutions within their local communities. An example of localizing the SDGs within a community is the [McMaster University Academic Sustainability Program Office](#), which

provides students with experiential learning opportunities through an interdisciplinary, student-led and community-based program. This program allows for students to select specific courses related to sustainability, do internships that allow them to work on real-world sustainability projects, and to engage in campus-based or broader community-based projects, thus allowing students to tackle projects that will have an impact within the local community. Another example is The Mount Arrowsmith Biosphere Region Research Institute at Vancouver Island University. The institute received funding to promote and advance the SDGs at the university as well as within the surrounding communities of Vancouver Island and to also develop pathways on how the SDGs are relevant to shaping and supporting their long-range planning.

In summary, there were significant findings of universities integrating the SDGs, both within Canadian universities and throughout the world. These findings were specifically identified for their transferability to other institutions, and particularly within a local context at York University.

5. Discussion

This chapter discusses the lessons learned – both in terms of challenges faced and opportunities for best practices – from university efforts to integrate the Sustainable Development Goals into their academic mandate and campus operations.

5.1. Challenges of integrating the SDGs in Universities

Despite their variations in approaches, universities have some common challenges with regards to integrating SDGs. These were seen in the literature, witnessed in my professional experience, and identified in two engagement sessions; (1) Universities Canada – Social Impact Initiative, which was an engagement session with leaders in Canadian institutions, and (2) Ontario College and University Sustainability Professional AGM Workshop on Integrating the SDGs into Strategy. Key challenges include the following:

- The SDGs have many complexities;
- Communication is considered a key challenge as sustainable development is interpreted differently, and many people perceive the goals as simply environmental initiatives and disregard the social implications;
- A lack of leadership and funding can also be challenging for an institution striving to introduce and implement SDG activities across its campus;
- Often, there can be a lack of interdisciplinary collaboration 1) among disciplines and 2) between academic disciplines and operations;
- The targets are tailored to a national level; there are many concerns about applying the SDG framework at a smaller, local scale and localizing the SDGs;
- Impact is difficult and complex to measure;

- Some faculty members see the move to address the SDGs as a neo-liberal agenda or one that focuses too much on development vs. sustainability;
- Some faculty/staff members also cannot see how it applies to them or how to integrate it within their curriculum/operations.

Another important challenge that universities need to confront when it comes to integrating the SDGs is the fact that it may be viewed as another element in a colonial framework.

Initiatives towards Indigenization and the adoption of goals within the Truth and Reconciliation Commission Report are necessary. Indigenous rights and reconciliation are not specifically addressed in an SDG; however, the issue should be prioritized and treated with the same urgency as the existing SDGs. The 2030 Agenda should be implemented by universities with full respect for Indigenous rights by protecting and promoting these rights in harmony with the UN Declaration on the Rights of Indigenous Peoples (Universities Canada, 2021).

5.2. Opportunities

This research has provided significant insights on how universities have integrated the sustainable development goals, with key findings noted in Chapter 4. There are four key lessons learned from the research:

- 1) SDGs are a framework for the whole of institution towards a sustainable university;
- 2) The Campus as a Living Lab concept is a key tool to advance the SDGs;
- 3) Integrating the SDGs requires action and a solutions-oriented approach; and
- 4) A holistic approach is required, integrating Indigenous Knowledge, other worldviews, and different ways of knowing.

The following section will discuss the opportunities and key lessons learned concerning how to integrate the SDGs.

5.2.1. SDGs as a framework towards a Sustainable University

It is time for radical change. The world cannot continue down this unsustainable path.

The SDGs have been defined as a “blueprint to achieve a better and more sustainable future for all” (United Nations, 2015, para 1), and since universities are microcosms of society, the SDGs can also act as a blueprint towards a sustainable university. Although the United Nations system has its faults and critics, and the SDG framework has its shortcomings, its global engagement and connectivity, as well as its attention to local communities, all provide a solid foundation for societal transformation. To help advance this agenda, it makes sense for universities to align their efforts and purpose as part of this global movement.

COVID-19 has had a significant impact on the world, and with universities enacting considerable transformation in response to the pandemic, they should also take advantage of the opportunity to initiate significant lasting positive change. Some of the changes that have been made over the past two years include online learning, remote work, and increased digitization and automation. In addition, there is a heightened sense of awareness and urgency in addressing environmental and sustainability challenges and refocusing attention on the critical need to address inequality. The future of universities can be reshaped by ‘building back better’ utilizing the positive lessons learned from the COVID-19 pandemic to foster societal transformation.

The foundation for societal transformation is underpinned in research, knowledge and learning. It is clear that the SDGs are beginning to be integrated within higher education, and the trend is growing. While this is a positive development, there is still a need for strong, effective leadership to continue to drive SDGs forward. As evidenced from the research, to successfully integrate the SDGs within universities, engagement, partnership and collaboration through a whole-institution approach—both top-down and bottom-up—needs to be implemented. The universities that have demonstrated success in integrating the SDGs show strong leadership, as the capacity to work cohesively and collaboratively across the whole of the institution is critical to success. Engagement and appropriate resources are required; system-wide strategic planning, a methodological approach for tracking & reporting, appropriate funding, and empowerment of students, staff and faculty are essential for ensuring an integrated approach to implementation. As such, the SDGs are a means for bringing together the university community for a shared purpose of adding value and influencing transformational societal change.

Partnership and collaboration (identified in SDG Goal 17) is a crucial mandate underlying all other SDGs and is a pillar of success in integrating the SDGs. There is a recognition that we won't succeed in achieving the SDGs alone and that institutional partnerships and interdisciplinary collaborations are essential to address complex challenges. To foster mutually beneficial and collaborative approach to innovative solutions, institutional silos among academic disciplines and campus operations should be broken down. Further, universities can foster partnerships with the local community, collaborating on building capacity and developing innovative solutions.

While engagement at all levels within universities is essential for successful implementation, student engagement is especially crucial. Future leaders should understand and be knowledgeable about the importance of sustainability. University campuses should be role models for the next generation by providing them with the skills they need to solve these real-world problems, through experiential learning, co-curricular activities and research. Moreover, students are drivers of change, and there is a need to empower and elevate youth voices and engage them in action. Youth around the world are uniting through their passion to make a difference in this world, and they are calling on government, policymakers and corporations to take meaningful action. Students are the most important stakeholders for universities, and universities should be supporting their efforts and elevating their actions.

5.2.2. The Campus as a Living Lab

The Campus as a Living Lab can accelerate and advance university contributions to meeting the SDGs. The concept promotes collaboration between academic research and teaching, and further, it can be integrated with campus operations and community engagement. Through a whole-institution approach, campuses are increasingly being used as living labs which bring together stakeholders from across the institutions—including research, teaching and learning, and facilities—to address local challenges and responds to challenges from the SDGs, for example, climate change solutions. Campuses are microcosms of society, providing transportation, food, housing, and other necessities for students. As such, they are excellent testbeds for new technologies and sustainable solutions to real-world challenges.

Campuses can be used as sandboxes for exploring opportunities and testing ideas, which provides the opportunity to learn from both successes and failures. As an example of the Campus as a Living Lab, the University of British Columbia (UBC) uses buildings, energy systems, transportation networks, and food systems, as educational and research projects. These projects are aimed at connecting ecological, social, human health and technological issues, while supporting the academic mission and the well-being of their community. Projects at UBC are situated both in physical spaces and in human systems in both of which in participants design, test, study, and learn from social and technical innovations in real-time and real-world contexts. Additionally, they facilitate the development of collaborative experiments, the testing of innovations, the evaluation of results, and the sharing of knowledge. (University of British Columbia, n.d.). The Campus as a Living Lab could be utilized not only for technological but also for social innovation. Technological innovation alone cannot transform society; social innovation is also required, and it is through the humanities and social sciences that a paradigm shift is possible by developing means of creating moral, sustainable, and inclusive societies.

According to a recent report by Marks et al. (2021), students are deeply pessimistic about the future, and the psychological burdens of climate change are profoundly impacting youth around the world. Nevertheless, many students today are eager to positively impact pressing local and global challenges. Campuses can become examples of how learning and innovation labs can contribute to creating a sustainable and resilient future. Campus initiatives, courses, and research projects can provide students with the knowledge they need to contribute to meeting the SDGs. Further, employers value graduates who can apply their knowledge in everyday situations such as those in which projects are grounded.

The SDGs present complex challenges that can only be resolved with interdisciplinary, integrated, innovative, and systematic solutions, and the university population has a remarkable capacity to solve these challenges. Thus, developing solutions in campus communities is an excellent way to test, accelerate, and scale those solutions. By utilizing the Campus as a Living Lab, students can learn by doing; learning to overcome challenges, students will have the opportunity to gain invaluable experience that can be applied in 'on the ground' situations. There are various ways of integrating the Campus as a Living Lab into student life. Examples include research projects, capstone projects, curricular projects, design thinking workshops and graduate theses.

The Campus as a Living Lab concept can also be applied within the local community. Universities as anchor institutions can build partnerships with the local community and work together with them to find innovative solutions that address local needs and solve societal challenges. McMaster University has already been noted in the key findings section of this paper as a good example of integrating the concept of Sustainability/SDGs into projects within the local community.

As found to be a prevalent theme, utilizing the Campus as a Living Lab approach bridges research, teaching and operations in utilizing the campus to develop prototypes and solutions that tackle real-world challenges. Large-scale university projects such as waste reduction, decarbonization, transportation, and food systems can significantly contribute to the development of pathways to reduce and eliminate GHG emissions beyond the university setting. Universities should be leading the way as models for the transformation of

economies, industries, and societies through decarbonization, circularity, and regenerative and socially responsible consumption and production.

Meanwhile, there are many benefits to the Campus as a Living Lab, there can also be challenges in implementing them:

- it requires strategic organization, resources and funding;
- change management and developing new means of collaboration and building relationships can be difficult;
- projects may require buy-in from appropriate stakeholders (i.e., Risk, Legal, Facilities);
- projects can be time-consuming; not all stakeholders prioritize the project(s) or requirements;
- space requirements and space allocation can pose additional strains.

There is a learning curve and challenges associated with the Campus as a Living Lab, these challenges can be overcome, and they are outweighed by the benefits. The findings conclude that the Campus as a Living Lab is a recommended tool through the whole-institution approach to move forward and integrate the SDGs.

5.2.3. Impact and a Solutions-Oriented Approach

“The greatest threat to our planet is the belief someone else will save it.”

– Robert Swan, n.d.

Sustainability challenges such as climate change, biodiversity loss, economic injustice, and the spread of disease threaten nature and society globally. Immediate and urgent action is

required to overcome these challenges, and universities need to be at the forefront of designing, testing, and evaluating solutions that can contribute to addressing these world challenges. By strategically localizing the SDGs on campus and within the local community, solutions can be designed that can then be replicated and implemented globally. Drawing on the argument presented by Harvey et al. (2020) that societal progress towards sustainability depends on the ability to translate 'knowledge to action' for the purpose of affecting real change by refocusing research and knowledge from the laboratory to society's needs.

Universities need to integrate SDGs not only into education and research but also in areas that allow them to lead by example. Through campus sustainability efforts, universities can demonstrate how institutions influence the environment through their own actions, hence implementing action-oriented solutions in areas such as business travel, energy consumption, building design, finances, procurement, transportation and other campus operations. As we are facing a major planetary crisis, universities must also be role models for students by equipping them with the skills necessary to deal with these problems. Universities should engage in ambitious climate action that align with the Paris Agreement and the IPCC. Further, by promoting education and training that will help with solutions that work to keep temperatures under 1.5 °C above pre-industrial levels and protect and rebuild eco-systems and biodiversity across the globe. Many universities are already developing climate action plans, and a number of these institutions are progressively developing pathways to net-zero for their emissions which includes:

- scope 1 emissions (direct – emissions from campus utilities, buildings and fleet);
- scope 2 emissions (purchase utilities);

- scope 3 emissions (transportation and the procurement of goods & services).

Universities, like the rest of the world, are at a pivotal moment where a transition is required and 'business as usual' is no longer an option. We must work together to protect the planet and people to ensure a greener, more resilient future for all. The Paris Agreement calls on global action to keep climate change well below 2°C above pre-industrial levels. This was a key goal at the Conference of the Parties (COP)26 in Glasgow, Scotland (November 2021), where participants pushed to secure global net-zero by 2050 and to keep 1.5 degrees within reach. Universities need to adapt and learn in these uncharted territories and inject sustainability principles into all decision making and all aspects of the campus to decarbonize and adapt to the changing times. For example, institutions need to consider reimagining the way space is utilized across campus, prioritizing net-zero building standards, and embedding nature-based solutions. Additionally, procurement practices need to be a driver towards a circular economy and decarbonize the supply chain, with its embodied carbon. These sustainability efforts require a systematic approach, one that is strategically organizational with a long-term commitment on the part of the administration.

Universities as places of higher education need to start thinking beyond the 2030 Agenda, and help to shape the next iteration of the global plan. As noted in the literature, there is criticism of the SDGs, suggesting that they place too much emphasis on economic growth, resulting in trade-offs that will exacerbate environmental problems rather than solve them. As presented earlier in the "Wedding Cake" model for the Sustainable Development Goals, the biosphere is the foundation of economies and societies, as well as for all SDGs. In this model, an integrated approach is taken to conceptualize social, economic, and ecological growth,

and this type of conceptualization is required for planetary transformation. To build a higher level of resilience to planetary change, universities need to put a strong emphasis on integrating nature-based solutions and apply a shared sense of stewardship to conservation, restoration, and ecological sustainability. Further, universities need not only to foster well-being of communities through biodiversity initiatives but also to facilitate the connection between nature and people, which has significant positive benefits related to mental and physical health.

Climate scientist Katherine Hayhoe urges us to find hope and courage, as well as to open our minds and hearts to address these global challenges.

The future we collectively face will be forged by our own actions. Climate change stands between us and a breathtaking, exhilarating future. We cannot afford to be paralyzed by fear or shame. We must act, with power, love and a sound mind.

Together, we can save ourselves (Hayhoe, 2021, p.245).

Hayhoe's statement can be applied not only to climate change and environmental issues but also social justice issues as they are interconnected.

5.2.4. A Holistic Approach – Indigenous Knowledge, other Worldviews and Different Ways of Knowing

Collectively opening hearts and minds, as suggested by Hayhoe, requires a holistic approach. As places of higher learning, universities should lead the way moving forward by identifying the gaps for continuous improvement that go *beyond* the 2030 Agenda. We need to move beyond just system change, as we also need a cultural shift in mindset. In my research

findings, it was clear that there are some challenges with the SDGs that present complexities when attempting to integrate them into higher education. In particular: (1) that the SDGs seek to prioritize development over sustainability; (2) that there are gaps in reducing inequalities (3) that the SDGs are products of a colonial agenda; and (4) that there is a lack of Indigenous Knowledge as well as other non-traditional knowledge and traditions included in the 2030 Agenda.

In our capacity as a community of higher education, there is a need to acknowledge the role of higher education in colonial educational systems, as well as accepting responsibility to fulfill the Truth and Reconciliation Commission of Canada's Report and its calls to action. By Indigenizing our academic institutions and undoing appropriation, we promote the well-being of our communities. Decolonization can only occur when we identify ways to decolonize our practices and systems and discover and understand the ongoing impact of colonialism (Lotz-Sistka et al., 2015). There is a need to continue to work towards building resilient communities and deepening our understanding of different voices, communities, histories and relationships that influence cultural appropriation. We will engage in meaningful education to free ourselves from colonialism's ingrained patterns.

The education of Indigenous Knowledge should receive a higher priority in 21st-century learning. However, there should also be an emphasis on integrating other types of worldviews and non-traditional knowledges. This is an unprecedented opportunity to better understand ourselves, our evolving world, and to engage in healing justice. Indigenous knowledge can also teach that restoring our natural world in a reciprocal manner can enhance the health of our land, our relationship with the natural world, and ourselves (Wall Kimmerer, 2021).

In addition, Indigenous Knowledge facilitates the embodiment of virtues like compassion, equanimity, and caring, which transform our understanding of the world and our place in it. This philosophy of compassion, empathy, and kindness found in Indigenous Knowledge coincides with other ideologies such as feminism, ethics of care, and religions such as Buddhism and Hinduism. Further, this philosophy also coincides with the Earth Charter's principles of turning conscience into action as it articulates a mindset of global interdependence and shared responsibility. Additionally, this is consistent with the Scharmer & Kaufer (2013) argument that to meet the challenges of this century, our economic logic and operating system must shift from an obsolete "ego-system" that stresses individual well-being and economic growth to an eco-system awareness that emphasizes the well-being of all. In order to inspire and enable these cultural changes, constructive dialogues open to all voices are needed. Through this approach, universities can help shape the future for the planet and humanity where sustainability, justice and equity will become the norm.

5.3. Summary: A Roadmap for universities to integrate SDGs

I have developed a roadmap for universities to integrate the SDGs, derived from the findings and lessons learned from the literature review, the twenty universities researched, and the SDG-related training and awareness sessions. This roadmap could be utilized by university administrators to help guide the integration of the SDGs. The list provides a variety of strategies that can be tailored to meet the needs of individual universities; however, it is not a prescriptive guide.

Governance & Administration

- Pledge a commitment to the Sustainable Development Goals
- Engage with external organizations to pledge commitments (i.e., The SDG Accord; HESI, Race to Zero)
- Embed within institutional strategic plans with goals and targets through a whole-institution approach
- Update and renew policies to enable sustainable transformation (ie. towards decarbonization, a circular economy and regenerating natural eco-systems)
- Integrate within institutional resource planning and embed in all operations and administrative processes
- Develop a purpose-driven institutional vision
- Provide senior leadership, staffing resources/funding and a steering committee
- Update and keep current relevant institutional policies (i.e., Sustainability, EDI)
- Conduct a voluntary review which identifies strengths, weaknesses and opportunities for improvements
- Develop a methodology for tracking, measuring & reporting
- Develop a keyword inventory for mapping institutional activity consistent with the United Nations and Elsevier
- Create a baseline mapping and inventory of current activities, curriculum, research and engagement
- Report on contributions to the SDGs
- Participate in external ranking systems (i.e., Times Higher Education Impact Ranking and AASHE STARS) as a means for measuring progress and understanding gaps and opportunities.

- Utilize the SDG Assessment Tool

Awareness & Engagement

- Develop an Awareness & Engagement Plan
- Develop training module(s) for awareness of the SDGs and how to take action
- Develop innovative ways to engage the community members (examples: 17 Rooms, 2030 SDGs Game, Gamification Tools)
- Crowdsourcing ideas from within the community
- Implement an Innovation Fund for community projects
- Support extracurricular opportunities for students to get involved (i.e., Student SDG Hub)
- Provide local examples of how people get involved and take action
- Utilize communication channels (i.e., website, videos, email, newsletters and social media) for storytelling of success stories and share best practices
- Develop a toolkit of resources and information about how to get involved, and promote continuous learning (i.e., SDG Academy)
- Foster mutually beneficial partnerships and collaborate with UN networks, government, industry, other academic institutions and not-for-profit organizations to advance the goals. Examples: Sustainable Development Networks Solution; HESI, SDG Accord

Research & Innovation

- Align applied research with the SDGs; scalable solutions; prototyping for positive impact on communities and the planet
- Develop a process to map and track research on SDGs
- Track patents and start-up/spin-off companies

- Interdisciplinary collaborate across faculties
- Insist on equity, diversity and inclusion in research
- Follow a holistic, cross-campus approach
- Prioritize societal impact
- Cultivate government, community and UN stakeholder partnership
- Share knowledge and demonstrate thought leadership
- Utilize the Campus as a Living Lab for Research, Innovation / Prototyping (both technical and social innovation)
- Provide resources to support researchers to their align research with SDGs – methodology of keywords which will increase bibliometrics (i.e., Elsevier SDG mapping methodology)

Curriculum

- Incorporate sustainability/SDGs explicitly into the curriculum, particularly with any new curriculum development
- Develop a process to align/map courses by SDG (tagging)
- Develop a process to align/map capstones, graduate theses, projects by SDG (tagging)
- Develop learning outcomes for students specific to sustainability/SDGs
- Develop SDG-specific courses
- Develop micro-credentials / badges applicable to all faculties
- Utilize the Campus as a Living Lab for experiential learning (operations, research & teaching)
- Foster interdisciplinary collaboration

- Develop appropriate resources for how to integrate SDGs within the curriculum and share best practices
- Support early-year and life-long learning and inclusive education
- Integrate SDGs in career-ready skills for problem-solving
- Create a community of practice for knowledge-sharing of best practices

Operations

- Provide support for underprivileged students (and citizens in the local community)
- Address hunger on campus (and locally)
- Develop a mental health and well-being strategy for students, staff and faculty
- Develop a Sustainability Strategy with Targets
 - Climate Action – Energy Efficiency and Decarbonization
 - Climate Resilience Plan
 - Sustainable / Social Procurement
 - Model for a Circular Economy
 - Good water management (water conservation, waste-water reuse)
 - Regenerative landscaping plan to support land, biodiversity and aquatic ecosystems
 - Alignment of with capital planning and renovations with net-zero building standards
 - Sustainable transportation, mobility and telework
- HR: remove systemic barriers in the recruitment and promotion of women and equity-seeking groups

- HR: develop employment practices/standards; student employment opportunities + recruiting staff and students from under-represented groups and first-generation students

Community Engagement

- Partner for with mutual benefits with the local community
- Support underprivileged citizens in the local community
- Address hunger locally
- Recruit staff and students from under-represented groups and first-generation students within the local community

5.4. A Case Study – York University

This section presents a case study that examines the steps that York University has taken to integrate the SDGs. It builds on the previous steps of this research paper 1) the literature review; 2) categorical definition areas; 3) analysis and assessment of institutions that have implemented SDGs; 4) observations from SDG-associated training and information sessions. In this final part of my research, will identify where York University has already succeeded in implementing best practices and offers an opportunity to identify gaps and areas for continuous improvement. Manning's Theory of Higher Education (2017), embodying with a multi-modal approach, is used to frame key findings, best practices, and lessons learned from the previous steps in this research. This will then be applied to the case study with the aim of advancing York University's contributions to the SDGs.

Governance & Administration

Social justice and sustainability have been at the core of the institution since it was founded in 1959, and since then York University has grown into Canada's third-largest research and teaching institution. In its vision, “York University is committed to giving a broad demographic of students access to a high-quality, research-intensive learning environment committed to the public good” (York University, n.d., “About, Mission” section). York’s holistic understanding of sustainability includes human well-being and social dimensions, and recognizes the social, economic and environmental roles of York University in and with our local neighbourhood (York University, 2017). York approaches sustainability through a holistic lens and the vision is underpinned by the core values of excellence, progressiveness, sustainability, social justice, and diversity & inclusivity (York University, n.d, “Core Values” section).

As Barth (2013) identified, a top-down and bottom-up approach is required for institutions to succeed. At the highest level, sustainability has been a core institutional pillar at York. The President's Sustainability Council (PSC)—a pan-university advisory body—was formed in 2008, and members have since helped to develop an institutional sustainability strategy that was approved by the President in 2017. Its purpose is to guide the university into advancing sustainability on a near-and long-term basis. The strategy “is to communicate and implement a shared vision, inspire positive change, build capacity, empower people, harness innovation and creativity, and foster a culture of sustainability within and beyond the University” (York University Sustainability Website, n.d., “Priorities & Sustainability Strategy” section). The Council has helped to guide and advance York University's sustainability strategy, initiatives, projects and practices, and has served as a strategic body that provides guidance for sustainability initiatives.

York University has also made significant progress in advancing equity and inclusivity with priorities such as black inclusion and the Indigenous Framework. To advance these priorities, the President has recently created a new division entitled People Equity and Culture which is committed to the Anishinaabe teaching of Mino Bimaaddiziwin's, "the good life", across the institution (York University, Vice-President Equity, People and Culture website, n.d.). Further, a President's Advisory Council on Equity, Diversity and Inclusion was created as a pan-university committee to help guide and advance these institutional priorities. These are pertinent initiatives, as York University, being located in the Greater Toronto Area, serves some of the most diverse and fastest-growing communities in Canada.

York University has made compelling developments in integrating the SDGs and has embedded them within the University Academic Plan *Building a Better Future 2020-2025*, which was approved by Senate in June 2020. The plan is built on six priorities for action, which include 21st Century Learning; Living Well Together; Knowledge for the Future; From Access to Success; Advancing Global Engagement; Working in Partnership; and Living Well Together. It also includes a university-wide challenge to contribute to the UN Sustainable Development Goals. As illustrated in Figure 9 below, the plan has three dimensions for engagement, which are global communities, local communities and the campus community.

Figure 9: York University Academic Plan "Building a Better Future" 2020-2025



Note. From York University Academic Plan "Building a Better Future" 2020-2025 (<https://vpap.info.yorku.ca/files/2020/06/Building-a-Better-Future-YorkU-UAP-2020-2025.pdf>). York University

Drawing on Haski-Leventhal's argument on purpose-driven institutions, York University has adopted a purpose-driven brand promise that stems from the University Academic Plan (UAP). The promise states that York is a "community of changemakers working to create a better future" (York University, 2020, "University Academic Plan" section). The university believes that its diverse community, excellent learning and research, and commitment to collaboration enable it to address complex global challenges to make a positive impact on the local and global communities they serve. "Our staff, students and faculty are passionate about building a more innovative, just and sustainable world" (York University, 2020, University Academic Plan" section).

Despite not having an implementation plan for the SDGs, the UAP's university-wide challenge has generated significant interest and momentum from the whole institution. Since implementation, each faculty is identifying their contributions to the SDGs as part of the institutional Integrated Reporting Plan. To help advance the UAP, a Provostial Fellowship program was implemented to enhance the University-wide challenge to elevate contributions to the SDGs. Four tenured faculty members were recipients, with the following projects:

- 1) Professor Burkard Eberlein - *York's journey towards Carbon Neutrality*
- 2) Professor Sapna Sharma - *Working Towards Access to Clean Water*
- 3) Professor Cheryl van Daalen-Smith - *More than Bees and Trees; Seeing the SDGs in our Curriculum – A Pan-University Community Development Initiative*
- 4) Professor Qiang Zha - *Reimagining and Transforming Liberal Arts Education with a Trans-Continental Partnership.*

Awareness & Engagement

The SDGs have been integrated within all new employee orientations. A training module is currently in development and will be launched in Winter 2022 to enhance staff training. In November 2021, York University launched an SDG-specific [website](#) to highlight contributions to the SDGs through the storytelling of activities in research, curriculum and operations. York also published its annual [SDG report](#), which highlights related activities from across the institution focusing on SDGs. This is an opportunity to engage the York community and beyond, bringing awareness and storytelling to all of the ways that York University is engaging and advancing the SDGs.

Engagement with the SDGs began at York University as early as 2017, when the Faculty of Environmental Studies, now the Faculty of Environmental & Urban Change, started holding student training events on the SDGs through the Foundation of Environmental Stewardship (now called the SDG Lab). These sessions were engagement tools for students across the campus to advance education on the SDGs and how they can be applied.

The President's Sustainability Council also held a Community Forum on the SDGs in January 2021, where a panel of guest speakers discussed how they are integrating the SDGs within their programs. The speakers included: Professor Charles Hopkins, the UNESCO Chair in Reorienting Education Towards Sustainability; Andrew Maxwell, a Professor in the Lassonde School of Engineering who integrates the SDGs as part of his entrepreneurial experiential education and design thinking program; a student group from the Cross Campus Capstone Classroom who presented their project of a dialysis machine powered through renewable energy; and Will Gage, the AVP Teaching and Learning who discussed the Academic Innovation Fund. Event participants were also asked for their ideas on how the SDGs could be advanced at York University. Key highlights were as follows:

- Offering more options for working from home and commuting for staff;
- Increasing funding and opportunities for collaborative research projects and initiatives at York;
- Embedding SDGs in curriculum and creating community-based courses;
- Enhancing access and support to low-income, first-generation and other underrepresented groups;
- Increasing awareness of the SDGs across the institution;

- Creating a university-wide climate action plan to embed climate considerations throughout decision-making;
- Ensuring sustainable procurement and resources are used on campus.

An earlier engagement session took place in May 2020 with an SDG Design Jam event for students. The event was a collaboration between the President's Sustainability Council, the Office of Sustainability, the SDG Student Hub, and the Carbon Free Club. Guest speakers included Nidhu Jagoda, Network Coordinator for SDSN Canada, and Rhiannon Rosalind, the CEO of the Economic Club of Canada. There were thirty-six participants, and facilitators assisted with logistics and moderating the breakout rooms. The event sought to collaboratively engage students with community partners, with the objective to brainstorm creative ideas on how to make the campus more sustainable through alignment with the SDGs. Two breakout room sessions were held: the first to discuss problematizing the challenges around the theme; and the second to discuss conceptualizing the solutions. The breakout rooms were based on Jeffrey Sach's six transformations pillars to achieve the SDGs: 1) Education, Gender, and Inequality; 2) Health, Wellbeing, and Demography; 3) Energy Decarbonisation and Sustainable Industry; 4) Sustainable Food, Land, Water, and Oceans; 5) Sustainable Cities and Communities; 6) Digital Revolution for Sustainable Development; and additionally; 7) Beyond the SDGs: Mindfulness, Consciousness, and Indigenous Knowledge. Key insights from the session include the following:

- Embedding the SDGs/Sustainability – there was a cross-cutting interest to embed the SDGs in courses, policies, and frameworks at the university
- Democratizing institutional decision-making processes

- Instituting financial penalties or incentives for resources such as plastic cutlery vs. metal cutlery
- Promoting community-based education focused on the SDGs
- Establishing capstone and EE opportunities and awards: incentivizing and recognizing community action beyond research
- Greening the campus
- Increasing funding and grants to contribute new ideas

York University is also advancing awareness of and engagement with the SDGs through its numerous institutional partnerships. One of the most noteworthy is the newly created Centre International de Formation des Autorités/Acteurs Locaux (CIFAL) York, which was developed in partnership with United Nations Institute for Training & Research (UNITAR). This Centre brings together government officials, non-profits, corporate executives, and educators to address complex global issues such as sustainable development, disaster recovery, diversity, economic development, health, and entrepreneurship (UNITAR, 2021). The first CIFAL York event, which took place in October 2021, which was a knowledge exchange titled “A Multi-Level Joint Action for Climate, Nature and People.” Held in the lead-up to the Glasgow Climate Conference COP26, its purpose was to deliver concrete recommendations to strengthen stakeholder engagement and joint action for climate, nature and people.

Another example of partnership is the Sustainable Development Solutions Network (SDSN). York University became a member in 2020 and is actively engaged in the SDSN Youth Network, as illustrated by the creation of the SDG Student Hub at York. The Hub has already

engaged York students in earning the SDSN Certificate through education, engagement and taking action on the SDGs. The Hub has developed programming such as the Climate Solutions Lab Workshop, numerous seminars, and was a co-host of the SDG Student Design Jam.

York University is also home to Professor Charles Hopkins, the UNESCO Chair in Reorienting Education Towards Sustainability in the Faculty of Education. Professor Hopkins received Canada's Clean50 Lifetime Achievement Award in October 2021 for his decades of dedicated engagement in reorientating education systems towards sustainable development. In his role, Professor Hopkins has established many global partnerships that aim to achieve the SDGs. In 2020, York University was named the SDG 4 focal point for the Global Cluster of Higher Education & Research for Sustainable Development at the International Association of Universities (IAU). Additionally, in 2021, York was named a founding partner of the new global UNESCO network on education for sustainable development.

Further, in 2020, York International and the UNESCO Chair co-hosted the *Sustainable and Inclusive Internationalization Virtual Conference* with the goal of reorienting education towards sustainability. The conference was held with strategic partners such as the International Association of Universities, the Canadian Commission for UNESCO, and Okayama University in Japan. As part of York University's global engagement program, the Conference on Sustainable and Inclusive Internationalization is part of the Sustainable on the Go Initiative (York University, n.d.). The conference was organized in partnership with the Canadian Commission for UNESCO, the International Association of Universities, and Okayama University, with the UNESCO Chair in Research and Education for Sustainable Development

(Japan). An outcome of the event was a Toronto [Declaration](#) on the Future of Sustainable and Inclusive Internationalization in Higher Education. York University's mission as a member of global learning, teaching, and exchange networks is to educate future leaders and promote global impact through education and research (York University, n.d.). The next conference is planned for Fall 2022.

Finally, in November 2021, York International launched the Go Global SDGs in Action Student Challenge, a project funded by the federal government. The challenge is for York students to take action towards the SDGs to create both local and global impact while learning about the SDGs and developing competencies and skills. Students can receive funding of up to \$8,000 to support their study, research, implementation of their project. (York University, n.d., "York International, Go Global" section).

Research

Research plays a significant role within higher education in contributing to the Sustainable Development Goals. The York University Strategic Research Plan (2018-2023) highlights York University's contributions to research and knowledge creation that contribute to meeting the SDGs. The university's research strengths include six intersecting themes: (1) advancing fundamental inquiry and critical knowledge; (2) analyzing cultures and mobilizing creativity; (3) building healthy lives, communities and environments; (4) exploring and interrogating the frontiers of science and technology; (5) forging a just and equitable world; and (6) integrating entrepreneurial innovation and the public good. There are many additional instances of research at York University contributing to advancing the SDGs. Some noteworthy examples

include The Homelessness Hub; The Dahdaleh Institute for Global Health Research; and the Ecological Footprint Initiative.

Curriculum

York University has also been integrating Sustainability and the SDGs within the curriculum. York offers more than 500 courses associated and has more than 300 researchers specializing in sustainable practices. As part of its call to action for addressing the world's most pressing challenges, the university has established the Faculty of Environmental and Urban Change as one of its premier sites for the study of sustainability. For example, The Las Nubes Project allows students to gain first-hand experience of tropical ecology, sustainability, indigenous education, arts, health, and conservation in rural Costa Rica.

Additionally, other faculties have begun to embed sustainability and the Sustainable Development Goals into their programs. The Schulich School of Business is home to the Centre of Excellence in Responsible Business (COERB), a global leader in creating and disseminating new knowledge about the social, ethical, environmental, and political responsibilities of business. The centre is also one of the largest and most influential academic centres dedicated to triple bottom line thinking (a sustainability framework that measures a business's success in three key areas: profit, people, and the planet). Further, the Schulich School of Business has recently launched a Master of Supply Chain Management program. The Lassonde School of Engineering has also aggressively integrated SDGs into its curriculum. For example, students at the Bergeron Entrepreneurs in Science & Technology (BEST) program integrate the SDGs to address some of the world's most pressing challenges through experiential learning programs and design-thinking events such as the UNHack (a

hack-a-thon themed around the SDGs). Furthermore, many of these challenges have to do with the York University campus itself, which provides students with the chance to use the Campus as a Living Lab tool. While there is currently no formalized approach, York's campuses are already being used as a living lab.

The Cross Campus Capstone Classroom (C4) is another example of SDG integration within curriculum. C4 is an interdisciplinary program in which students work together in groups to solve real-world problems with social impact, aligning all projects with the SDGs. In 2020, as the Program Director, Sustainability, I pitched the challenge *"How might students take the lead on York's contributions to the UN Sustainable Development Goals?"* The C4 Project Team organized resources and built a website using the lens of the SDGs to tackle the following topics: educating students about the SDGs; volunteering; and producing platforms for students to get started in this field. This challenge was picked up again by another group of students for this academic year, which continues to build momentum and student engagement. All of the other projects within the C4 and the York University Capstone Network also align and contribute to advancing the SDGs.

To continue embedding the SDGs into Teaching & Learning, the York Academic Innovation Fund will prioritize projects that advance York's strategic priorities in teaching, learning and the student experience that *also* align with the SDGs. Further, to support faculty members in embedding the SDGs into curriculum, an SDG Community-of- Practice for Curriculum is in development, with the first meeting already held in November 2021 (co-hosted by the Provostial Fellows Program and the Teaching Commons). The first meeting's agenda

included a sample of examples of faculty members who have integrated the SDGs within their classroom, followed by a discussion on co-creating a Community-of-Practice.

Operations

Sustainability practices are increasingly woven into every aspect of university operations.

York University has implemented many sustainability initiatives within operations, including energy efficiencies and deep retrofits; the zero-waste program; green buildings; grounds and landscaping; transportation and mobility; and food initiatives such as locally sourced, and fair trade. Through these initiatives, York University has been recognized as one of Canada's Greenest Employers for nine years in a row. In 2020, York University made additional progress by aligning with the Paris Agreement and Intergovernmental Panel on Climate Change in committing to become carbon-neutral on or before 2049. This commitment also aligns with the University Academic Plan 2020-2025. Additionally, the University-wide challenge to contribute to the SDGs along with the carbon neutral goal directly relate to SDG Goal 13- Climate Action. To achieve this goal, York University is currently measuring its ecological footprint through the Ecological Footprint Initiative and is in the process of developing a roadmap towards decarbonization, including scope 1 (direct emissions); scope 2 (indirect emissions from utilities); and scope 3 (emissions travel and procurement of good and services).

Community Engagement

York University currently has two campuses located in Toronto; the Keele Campus and the Glendon Campus. It also has a campus in Costa Rica, Las Nubes, and there is a program in Hyderabad, India. York is also continuing to grow with the Markham Campus, which is

currently under construction in York Region. As an anchor institution, York University has made significant action-oriented progress related to social justice and the support of the local community. This is particularly important for the Keele Campus, which is located within York University Heights—an area of Toronto with a larger concentration of low-income population—where many people from equity-seeking groups are facing systemic barriers. One of York's goals is to address economic disadvantage, discrimination, and barriers to equal opportunity faced by people across the Greater Toronto Area, with an initial and ongoing focus on the neighbouring communities of the Keele campus. (York University, n.d.). These include those who are displaced or isolated from the labour market, or community members from equity-seeking neighbourhoods who have historically faced discrimination and have not been able to access economic opportunity. The four target areas identified are 1) employment 2) engagement 3) neighbourhood building through infrastructure, and 4) social procurement (Anchor York, 2018). In December 2019, the Board of Governors approved a Social Procurement Policy, making York one of the first Canadian universities to have a comprehensive social procurement policy. York acts within the local community as 1) a ladder of opportunity 2) an engine for social progress and 3) a driver of economic growth (York University's Economic & Social Impact Report, 2020).

There has been considerable momentum at York around the SDGs, and while this isn't an exhaustive list, it demonstrates that York University has made a concerted effort towards becoming a sustainable university and advancing the integration of the Sustainable Development Goals. In 2021, for the third consecutive year, York was recognized by the Times Higher Education Impact Ranking and was ranked #67 out of 1,115 universities in the world. Figure 10 below illustrates York's position in the THE Impact Ranking, with an overall

score of 88.4 out of 100. York University participated and submitted information for all 17 SDGs, as shown in Figure 10 below.

Figure 10: York University, Times Higher Education Impact Ranking, 2021



Note. From The Times Higher Education Impact Ranking, 2021 (<https://www.timeshighereducation.com/world-university-rankings/york-university>). Times Higher Education.

York was ranked in the top 4% globally, 3rd in Canada, and 27th in the world for the SDG 17 – Partnership for the Goals. York also ranked 5th in Canada and 24th in the world for SDG 11 – Sustainable Cities and Communities. Figure 11 below illustrates the points for the top four SDGs for which York was identified: SDG 11, Sustainable Cities and Communities, SDG 15, Life on Land, SDG 16, Peace Justice and Strong Institutions, and SDG 17, Partnership for the Goals (see Figure 11 below).

Figure 11: York University ranking in Times Higher Education Impact Ranking, 2021



Note. From The Times Higher Education Impact Ranking, 2021 (<https://www.timeshighereducation.com/world-university-rankings/york-university>). Times Higher Education.

Recommendations

As a core pillar, York University has a long history of sustainability. It is clear by the wealth of activities and initiatives reflected in its Sustainability Strategy, research, teaching & learning, operations, community engagement, and policies and practices that York University is committed to fostering a sustainable future. Further, now that sustainable development is central to the *University Academic Plan 2020–2025: Building a Better Future*, and the university-wide challenge to contribute to the SDGs, there is significant momentum to escalate efforts through the whole institution. There is also significant room for continuous improvement, and the findings in this paper could help to propel York University towards taking a strong leadership role in advancing the SDGs.

Applying theoretical perspectives from Manning's Organizational Theory of Higher Education (2018) can help to contribute further transformational change and advance achievement of the SDGs. A multi-modal approach to higher education, along with the theoretical lenses of cultural, feminist, gender, and spiritual perspectives can help to inspire new transformational methods. The *Cultural* perspectives create environments and exercise leadership in ways that make institutions more inclusive and just (Manning, 2018). The *Feminist* and *Gendered* approaches that apply collaborative and connected leadership can result in a more inclusive, open, and collaborative institution (Manning, 2018). The *Spiritual* perspective seeks to further humanize institutions to be inclusive of everyone, with the focus of this theory being on the whole person and nurturing one's emotional and spiritual dimensions (Manning, 2018).

York has already integrated many of these principles; however, applying them strategically to decision making and to the applications of the lessons learned from this research can propel York into a leadership role in university sustainability. This can be done through initiatives such as 1) SDGs as a framework towards a sustainable university; 2) The Campus as a Living Lab; 3) a solutions/impact approach; and 4) a holistic approach incorporating Indigenous Knowledge, other worldviews and different ways of knowing. The summarized roadmap provided could help in the development of a strategic implementation plan. Additionally, the following are specific recommendations to support the integration of the SDGs at York University.

Recommendation 1: Governance & Administration

York University finds itself at a pivotal moment in time where forward-thinking and transformational change is required. The SDGs could be integrated within institutional policies to enable a sustainable transformation (e.g., decarbonization, a circular economy, and regeneration of natural campus ecosystems). Additionally, the President's Sustainability Council could be restructured to provide leadership to help guide the institution in integrating the SDGs as a blueprint towards a sustainable university. This could help to develop the renewal of the Sustainability Strategy and its implementation through the whole-institution approach and the Campus as a Living Lab. A specific working group steering committee could be created to advance the SDGs at York University, as well as developing an action-oriented implementation plan with a holistic approach incorporating Indigenous Knowledge, other worldviews and different ways of knowing.

Further recommendations for accelerating contributions and integration of the SDGs include the following:

- Provide appropriate sustained support and funding mechanisms for implementation.
- Complete a Voluntary University Review (VUR) of York's contributions to the SDGs to understand both the strengths and the gaps for continuous improvement. While York has already initiated this process through the collection of information for the SDG Annual Report and the Times Higher Education Impact Ranking submission, it would be beneficial to take a comprehensive approach to mapping all institutional activities and to measuring progress and impact. Additionally, from understanding the gaps and areas of improvement, a strategy can be developed that ensures a stronger overall impact.
- Develop a methodology for mapping, tracking and inventorying all SDG related activities across the institution.
- Develop a formalized program with institutional support, resources and funding for the Campus as a Living Lab through an interdisciplinary approach inclusive of research, curriculum, operations, and community partners. Implementing this will require an organizational structure for campus sustainability projects and strategic staffing through the whole-institution approach in order to build capacity and enable the implementation of projects. This will also require appropriate SDG related funding where projects could be prioritized through the Academic Innovation Fund or the Sustainability Innovation Fund. Funding could also be obtained through research grants or through collaboration with the Division of Advancement for donor funding.

While many other institutions have implemented the Campus as a Living Lab for traditional projects such as technological innovation, York could differentiate itself applying a holistic approach to also include social innovation projects.

- Institutionally sign the [SDG Accord](#), a University & College Sector's Collective Response to the Global Goals.

Recommendation 2: Awareness & Engagement

York University could also advance its contributions to the SDGs by increasing awareness and engagement through a strategic implementation plan. Communication is the key element for raising awareness and engagement to localize the SDGs, which helps community members better understand how they can participate and contribute to the larger agenda through smaller, localized community action. This can be accomplished by utilizing a holistic approach that applies a variety of tools and strategies identified in the key findings, such as a social media campaign, gaming workshops, speaker series, podcast series, and hosting of a 17 Rooms event. The 17 Rooms event should be ranked as a higher priority, as this concept would not only enhance awareness of the SDGs but would also engage the community and act as a tool to develop action-oriented solutions to further contribute to advancing the process of meeting the SDGs.

Engaging the community in behaviour change for societal transformation requires social innovation. This is another opportunity to utilize the Campus as a Living Lab as a method for developing engagement tactics and measuring impact. Through collaboration between faculty, administration, and operations, York can provide unique experiential learning

opportunities with the development of tools and methods for raising awareness and engaging the community in the SDGs. For example, programs in Arts Media Design and Performance and/or the Faculty of Liberal Arts & Professional Studies could develop engaging methods such as storytelling through various mediums (e.g., filmmaking, TikTok videos, GIS StoryMaps, social media content, or theatrical performances). Another suggestion to raise awareness would be through the development of public art on campus (e.g., mural walls, installations, graffiti art), which could be done in collaboration with academic programs.

To further support awareness and engagement, the following items are also recommended:

- Develop student-specific engagement methods for all undergraduate students and graduate students, including awareness and engagement, as means for increasing their knowledge and competency skills that would support their pathways to career development;
- Provide further support and enable student-driven engagement; including but not limited to the SDG Student Hub;
- Enable further growth and development of the SDG Student Hub and the SDG Certificate (SDSN) to engage more students across the institution;
- Support the development and implementation of a staff-specific awareness / training module;
- Strengthen partnerships and collaboration for the SDGs with other institutions and networks –for instance, the Sustainable Development Solutions Network (SDSN);
- Engage by fostering constructive dialogue; and by asking the community to share their stories and their ideas for continuous improvement.

Recommendation 3: Research

To advance contributions to the SDGs, Research & Innovation could strategically align to the SDGs and prioritize research with societal impact. This can be further accelerated through increasing interdisciplinary partnerships and by fostering collaboration with the local community, industry, and researchers from other institutions.

Further recommendations include:

- Increase internal collaboration and use the Campus as a Living Lab for research and innovation. For example, researchers could collaborate with operations on developing innovative solutions to decarbonize the campus to help achieve net-zero carbon goals; the Campus as a Living Lab could also be utilized for social innovation through humanities and social sciences to build capacity for engagement, behaviour change, and measuring impact on decarbonization, particularly for the scope 3 emissions (procurement of goods and services; transportation such as commuting and business travel).
- Establish a transdisciplinary research centre to push forward the SDGs.
- Align research with key-word mapping to increase bibliometrics and tracking inventory.
- Prioritize innovation with the purpose of achieving the SDGs and provide research support to seek funding that would accelerate the projects.
- Further integrate SDGs within Innovation York to support entrepreneurship and start-ups working to solve SDGs issues.
- Integrate the SDGs within Knowledge Mobilization (KMb) to facilitate connections and collaboration between researchers, other stakeholders, and the community of practices.

Recommendation 4: Curriculum

In addition to the University-wide challenge to contribute to the SDGs, the UAP also calls for 21st century learning and knowledge for the future. To advance these priorities, the SDGs could be further integrated within curriculum by providing institutional support to faculty members, by developing toolkits, and by facilitating other engagement activities. As education is the foundation for inclusive societies, holistically integrating the SDGs within curriculum will enhance student learning and provide the next generation with the appropriate career-ready skills to solve global challenges. Further, York could also develop SDG-specific academic programs such as content-specific SDG course(s), micro-credentials and or/badging.

Another mechanism for advancing SDGs within curriculum is again through the Campus as a Living Lab. This would expand opportunities for students to get experiential learning in areas such as class projects, capstones, work-integrated learning, and theses. For example, there is already significant interest from some students, staff and faculty members in developing a Campus as a Living Lab project that integrates issues of food security, urban agriculture, food waste, campus biodiversity, and overall health and well-being. Bringing this project to life could engage stakeholders from across the campus in expanding the Maloca Gardens and developing an urban agriculture program that utilizes other spaces on campus, such as a creating roof-top garden. The program could integrate organic waste from York's dining facilities; and then, through a circular economy model, re-integrate the food produced into food systems within York University and/or the local community. This is an example that would support not only the UAP in the University-wide challenge of contributing to the SDGs,

but it would also align with other priorities such as 21st Century Learning and Knowledge for the Future. This project would also contribute towards decarbonization, advocate the principles of a circular economy, and help with regeneration and campus biodiversity.

Recommendation 5: Operations

Though York has achieved many successes that have positioned the university as a leader in sustainability, significant work is still required. To meet the benchmarks required to achieve net-zero carbon emissions by 2049, a whole-institution approach to accelerate campus sustainability efforts is needed. Further, it will require strategic leadership and support to empower impactful and solutions-oriented activities across the institution – including, but not limited to, decarbonization efforts, sustainable procurement, and promoting of circularity, regeneration and biodiversity. Utilizing the Campus as a Living Lab could provide significant benefits to operations by partnering and collaborating with researchers on campus to develop innovative solutions, thus initiating behavioural and cultural change. For inspiration, the university can look to examples such as the University of Toronto, which has adopted a strategic vision with support from various committees to guide the University in fostering ambitious action towards embedding the SDGs, creating a Campus as a Living Lab program, and most recently, announcing a new and ambitious target of a Climate-Positive Campus. Achieving the goal of net-zero will require a whole-institution approach, and it will also require policy changes, behavioural changes and cultural mindset transformation. This is an opportunity for humanities and social sciences to lead in behavioural transformations on campus.

Recommendation 6 - Community Engagement

York University has made significant progress in community engagement and working with the local community, particularly with regards to the Anchor YorkU strategy and the implementation of the Social Procurement Policy. As localizing the SDGs plays a vital role in achieving them, York could continue to build community partnerships and collaboration to mobilize transformation and drive change by 1) knowledge-sharing and building capacity for awareness & engagement of the SDGs within the local community, and 2) collaborating with the local community through research and experiential learning to solve SDG-related challenges. Again, this is another opportunity for humanities and social sciences to engage through the Campus as a Living Lab for social innovations and cultural transformations within the local community.

6. Conclusion

The purpose of this paper was to answer the following question: ***How have universities integrated the Sustainable Development Goals, and what lessons might be learned and applied therein?*** This paper analyses the literature associated with SDGs in universities, as well as identifying best practices on how to integrate the SDGs within them. The analysis was done through the whole-institution approach, which includes governance and administration, awareness and engagement, research, curriculum, operations, and community engagement.

Given the current state of environmental emergency and widespread societal challenges, the SDGs function as a much-needed catalyst for transformative change. The SDGs are, in and of themselves, a transformational initiative, and their successful implementation will require a significant effort on the part of not just the United Nations but also from governments, businesses, the private sector, civil society and communities, and educational institutions.

The findings of this paper demonstrate that universities have been comprehensively identified as playing a crucial role in advancing the SDGs. The SDGs provide a framework towards not only successfully building a sustainable university but also for how universities can contribute to addressing these substantial challenges in the real world. To achieve successful outcomes in many of the areas identified, the SDGs require universities to be advocates and leaders in building capacity for sustainable development. While many universities around the world have started to integrate the SDGs in response, concern has been raised that change is not happening fast enough.

The findings identify that to integrate SDGs successfully within universities, a strong vision for change and purpose-driven leadership is essential. While it can be challenging for universities to integrate the SDGs, there is a tremendous opportunity to benefit from taking a leadership position in research, awareness, and implementation of sustainable development solutions. As the SDGs identify the most critical challenges that will define future generations, a purposeful impact and solutions-oriented approach can accelerate a university's contributions to the SDGs, which will have a significant positive reputational impact on the university. This is especially true given the current direction and importance of university rankings. The institutions that are resistant or slow to respond risk loss of relevance.

To successfully integrate SDGs within universities requires interdisciplinary collaboration with internal and external partners that brings together students, staff, faculty, community members, and other stakeholders. These partnerships provide support and facilitate systemic change through the development of scalable initiatives that accelerate the SDGs through innovative solutions and experiential learning by using the Campus as a Living Lab. Further, they need to be inclusive of all voices, Indigenous Knowledge, other worldviews, and different ways of knowing.

As the SDGs were adopted by world leaders in 2015, their role within universities has been well documented; however, their *implementation* within universities is still in the early stages. As a result, there is a significant gap in knowledge and evidence on how universities are successfully integrating the SDGs. There is still much to learn with regards to understanding and evaluating their impact, and steps are being taken—such as tracking, monitoring and

evaluation—to understand the synergies with traditional disciplines or even the interface with academic freedom and how to embed the SDGs within curriculum.

It became evident throughout this study that success in meeting the SDGs is reliant on continuous research that explores the ways in which universities are advancing and contributing to the process. The SDGs are among the most ambitious and vital agreements in history, as creating sustainable growth and development is the only way to ensure that future generations have a healthy world to live in. The challenge of achieving these global goals is far-reaching, and we will only succeed if everyone, including governments, businesses, organizations, academia, and individuals, make a concerted effort. Today's and tomorrow's leading institutions are those that will harness and direct this change for a more positive future. It is time for a societal transformation and a paradigm shift through collective action to solve these world issues, and universities need to be at the heart of it.

“You must be the change you wish to see in the world.”

— Mahatma Gandhi

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Appendix 1: Analysis of University Best Practices of Integrating the SDGs

#	Overall Ranking (THE)	University	Location	Ranking in Canada	Administrative & Governance	Awareness & Engagement	Research & Innovation	Teaching	Campus Operations	Community Engagement	Website URL	SDG Annual Report URL
1	1	University of Manchester	United Kingdom		"As a proud Manchester institution with a growing international reach, we have created this plan based on our fundamental belief that the purpose of our University is to deliver benefit to society and the environment, and to protect our unique status as an open place of enquiry and challenge." - Brand promise "To advance education, knowledge and wisdom for the good of society"	- partnership with the Association of Commonwealth Universities and developed an educational course SDGs specific - Public Engagement Strategy - to engage the community - Stelfly - transformational academic and extracurricular activities (social responsibility is the core goal)	- 21,571 research publications (2020) - Real-World Impact, commitment to social responsibility to improve lives across the planet - solving health, equality and sustainability challenges - Research Beacons - examples of pioneering discovery, interdisciplinary collaboration and cross-sector partnerships to tackle biggest issues facing the planet. Examples: Transforming Energy Systems	- accessible education (barrier free) - from low income backgrounds, first generation, disability, underrepresented ethnic backgrounds - offering students access to programming "creating a sustainable world: 21st century challenges and the Sustainable Development Goals" - encouraging students to Stelfly - social responsibility into curriculum	- Anchor Institution - Living wage accredited employer - LGBT Inclusivity - Responsible Procurement - Socially Responsible Investment Policy - (net-zero by 2030) - Commitment climate change target for zero carbon by 2038 - ranked best university for recycling and sustainability	- Gold Watermark public engagement to involve and inspire local and global communities with the SDGs - anchor institution - Public engagement strategy to work with community	https://www.manchester.ac.uk/discover/societ-responsibility/sdgs/	https://documents.manchester.ac.uk/doc.aspx?doc=5489
2	2	University of Sydney	Australia		Strategy: "Our Future" (Knowledge, Wisdom, Humanity) Challenging traditions for almost 170 years, "We make lives better by producing leaders of society and equipping our people with leadership qualities so they can serve our communities at every level. Strategy to create a place where the best researchers and most promising students can achieve their full potential." - develop a University-wide culture that is built on their values. - Brand Promise "Leading to improve the world around us"	- signatory to PRME (Principles for Responsible Management Education) - SDGN Member - declared a climate emergency - ACTS Green Impact (teams for sustainable action on campus & home) - Bioquest - Questgame	- Making impact through research - example: University technology spin-off Gellon smart solar benches and installed on campus - Recycling robot to help solve soft plastic waste crisis - DNA Vaccine trials	- Master of Sustainability, and courses in sustainability - Business School is a signatory to the Principles for Responsible Management Education - declared a climate emergency (Law School) - Industry & Community projects to tackle problems & issues	- net zero emissions by 2030 - zero waste to landfill by 2030 - 30% reduction on potable water by 2030 - sustainable procurement practices to reduce waste and increase social sustainability	- ACTS Green Impact (encourage staff/students teams & commit to sustainable action at home/campus) - Bioquest - Questgame (competition among universities aim collecting biodiversity data for conservation) - Staff/students mobilized - build and inspire community - enact change in our responsibility to care for Country - Enrich & transform lives now and for future generations - Community Garden	https://www.sydney.edu.au/about-us/division-and-values/sustainability.htm	https://www.sydney.edu.au/about-us/division-and-values/sustainability.htm
3	3	RMIT University	Australia		RMIT Sustainability Committee oversight of SDGs performance and make recommendations about sustainability-related commitments/policies - RMIT strives to adopt a leadership role at a national/international level to shape a sustainable environment and society. - UN Global Compact - Embedding SDGs into strategies, processes, policies and practices (curriculum, research, governance and operations). - Commitment to partnerships - commitments to the community	- SDGN Partnership - SDG Video https://www.youtube.com/watch?v=BgbQvL4P18 - RMIT is committed to widespread engagement across the community of students and staff to encourage the adoption of sustainable practices and outcomes. The community is engaged through sustainability initiatives including events, behaviour change programs, social media campaigns and living lab projects. - partnership with ACTS of Connection https://www.acts.asn.au/actscoc/	- research mapping metrics based on key words relevant to SDGs used by UN and SDGN and refined to reflect contributions to SDG targets and indicators. - progressing research that advances the sustainable development goals - RMIT SDG@RMIT Transformation Platform https://www.rmit.edu.au/research/transforming-capacity-platform/urban-futures/sdg-transformation-platform - ethical innovation	- Embedding into teaching & learning to equip the next generation with skills, knowledge and understanding of sustainability challenges and opportunities - Global Citizenship SDG 101 non-credential course (8hr online course recognized by the UN Global Compact)	- Commitment to Carbon Neutral by 2030 - Sustainable Procurement Plan supply chain and partnerships - On the road to circular economy working in partnership with researchers in school of engineering - campus as a living lab	- Video https://www.rmit.edu.au/about-us/our-values/sustainable-development-goals - Leadership and using expertise and capabilities to promote the SDGs and collaborate to help drive change.	https://www.rmit.edu.au/about-us/our-values/sustainable-development-goals	https://www.rmit.edu.au/about-us/our-values/sustainable-development-goals
4	4	La Trobe University	Australia		- Signatory to the UN's Principles for Responsible Management Education (PRME) and PRME Champion Business School - La Trobe Climate Network	- PRME Commitment - social marketing campaign to train the students at La Trobe University to influence action and change behaviour of society towards the agenda of United Nation's Sustainable Development Goals (SDGs)	- Research is focused on five priority areas linked to SDGs: - sustainable food & agriculture - resilient environments & communities - Healthy people, families and communities - Understanding and preventing disease - social change & equity - Working with First Nations communities	- developed a free massive online open course (MOOC) on the SDGs https://www.futurelearn.com/courses/learning-for-sustainable-development-goals	- New Masterplan (Anup) - Developing the University City of the Future (which will include a Research & Innovation Precinct focusing on strengths) - Carbon neutral by 2029 (investing in \$75 M - regional campuses set to be carbon neutral by 2022) - Sustainable Building Design - Indigenous Nguni (flora and fauna)	- Accessible/ bookable space on campus for community functions - partnerships and sponsorships (community projects and initiatives) - Youth Foundations (youth-led and youth focused projects) - Community Garden Group	https://www.latrobe.edu.au/sustainability	https://www.latrobe.edu.au/data/assets/pdf_file/0005/118396/SDP_2020_FINAL_29.10.2020.pdf
5	5	Queen's University	Canada	1	SDG Steering Committee and Working Group; - THE Impact Ranking - A Community effort 70 departments to gather metrics and measurements - Operational Priorities Working Groups: 1) Research Impact; 2) Student Learning 3) Research & Teaching Interdependence 4) Queen's in the Community 5) Organizational Culture - 17 Rooms Community Engagement Event - Member of UC3 - Promise Scholars (program designed to reduce financial barriers and increase access for local, first-generation students) - 17 Room Event for Community Engagement	- Programs "learn to grow" and "learn to cook" engaging community members in a healthy lifestyle - 17 Rooms event (Brookings engage community with 1-3 action per SDG to be achieved in 12-18 months) - Queen's climate commitment challenge - As part of Queen's Climate Commitment Week is a series of events on and off campus that highlight environmental issues facing our local and global communities and ways we can help make our world more sustainable.	- The School of Policy Studies - Interdisciplinary/experiential learning innovation and tackling real world experience - Queen's University Biological Station, one of Canada's premier scientific field stations; - Beby Water Research Centre, which fosters interdisciplinary research and outreach in water governance, sustainability, and protection.	- Draft Plan Recommendations - Offering Transformative, Inquiry-based Learning Experiences (promote personal development; move outside traditional course-based and classroom based paradigm; positive social impact) - Waste water management educational opportunities	- Queen's Climate Action Plan, which is committed to climate neutrality by 2040 - Queen's Equity Locator App, a map of accessible and gender neutral spaces, and specialized pathway programs for Indigenous and Black students. - Reducing food waste - LeanPath Spark - Fair Trade designation - Smoke free campuses - water conscious building standards - Green Cleaning products	- Draft Plan "Inquiry Based Model Ideas Experience - solving to solve real-world challenges within the community - Undergraduate Admission pathway for Indigenous Students - Science outreach into the community - Elbow Lake Environmental Education Centre offers year-round programming for high school students	https://www.queensu.ca/principals/strategy/sustainable-development-goals-sdgs	https://www.queensu.ca/principals/strategy/sustainable-development-goals-sdgs

6	=6	Aalborg University	Denmark	The adoption of the SDGs is a call to action for a new plan on how to restore the balance between humans and planet Earth https://www.en.aau.dk/abou/sustainability-at-aau/sustainable-everyday/aau-is-intentionally-wild/	Sustainable Campus Forum to inspire operations initiatives on campus	-With Aalborg University's problem-based approach to research, researchers help solve challenges and achieve new insights across traditional disciplines with the common objective of creating a sustainable world	-Using problem based learning to ensure sustainable societies	-reduce GHG emissions by 70% in 2030 compared to 1990 levels -improved waste sorting systems -Green power and energy reduction		-Aalborg's sustainability strategy is central to the city and a step in the right direction as it gives guidance for green transitions and points the way to a modern economy. Aim to strengthen local sustainability efforts -Network for Sustainable Business -Green Agent -SMART Aalborg (citizens and companies can submit ideas to be transmitted to politician	https://www.en.aau.dk/abou/sustainability-at-aau/	https://www.en.aau.dk/digital-assets/2019/03/2019-2020.pdf
7	=6	University Wollongong	Australia	Commitment to SDGs "A Purposeful Future" to inspire a better future through education, research and partnership 2030 and Beyond White Paper https://documents.uow.edu.au/content/groups/public/@web/@pncd/@uncldocuments/doc/uow259208.pdf -University Commitment to the SDGs (SDSN)	-SDSN Partnership "note difficult to find any information relating to awareness and engagement"	Translation Precincts - establish state-of-the-art research translation precincts to address social, economic, and environmental issues. The precincts will harness our research and partnerships to provide relevant services to our communities.	Leading up to Global RACT4SDGs Week interdisciplinary competition for Dean's Scholar students with global challenges provided by local industry matched to SDG	-most vegan friendly U -embedding within workplaces/practices	"Global Goals, Local Level" project to explore cross-sector partnership and engagement for regional action -The Community Engagement Grants Scheme (CEGS) -The Caring for Communities project - key stakeholders is Aboriginal Community	https://www.uow.edu.au/united-nations-sustainable-development-goals/	https://documents.uow.edu.au/content/groups/public/@pncd/@uncldocuments/doc/uow267376.pdf	
8	8	University College Cork	Ireland	Website error message - no information available	Website error message - no information available	UCC's research in the area of poverty, as well as the financial aid it provides and its anti-poverty initiatives both within the university and the community.	-Developing a connected curriculum -SDG Toolkit https://www.ucc.ie/en/sdg-toolkit/	Website error message - no information available	Website error message - no information available	Website error message - no information available	Website error message - no information available	Website error message - no information available
9	=9	Arizona State University	United States	-AASHE Stars Platinum Rating and ranked #1 in US in THE -charter commitments to excellence and access, making an impact in the world is intrinsic to organizational DNA. -Sustainability Initiatives revolving fund -Arizona State University has developed a new model for the American research university, creating an institution committed to excellence, access and impact — the New American University. ASU's charter, adopted in 2014 -ASU is a comprehensive public research university, measured not by whom it excludes, but by whom it includes and how they succeed, advancing research and discovery of public value; and assuming fundamental	Video - on SDGs at ASU https://www.youtube.com/watch?v=OD2TDB030 -Sustainability Solutions program open to all members of the university (personal life and on campus) -Sustainability Tour (includes projects of the Living Lab) -Green Office Program -Green Events Program -Green Labs Program -Green Shop Program -Green Housing Program -Green Classroom Program -Partnership specific website https://sustainability-innovation.asu.edu/partnerships/ -We Empower UN SDG Challenge https://sustainability-innovation.asu.edu/we-empower/	-Institute for the Future of Innovation in Society -Resource Innovation and Solutions Network -Rob and Melani Walton Sustainability Solutions Service -JREX Sustainability Research Network	The College of Global Futures at Arizona State U empowers students to make a long-term impact in sustainability and innovation -Changemakers map (maps out all the courses) https://docs.google.com/presentation/d/18yUjPwA5qKZ0zTmah15PYMgA5v6dE0L9GQug/edit#id=843179271 -Sustainability Teacher's Academy -Sustainability Science for Teachers (teacher training for Education K-12) -Sustainability certificate -SDG specific courses	Arizona State University has made an institutional commitment to lead by example through the sustainable operations of its campuses. Four critical pillars focus the university's efforts: climate neutrality, zero water/sold waste, active engagement and principled practice. -ASU's Living Laboratory https://sustainability-innovation.asu.edu/campus/ -Climate Positive The goal of a university is not to have the least impact possible, but rather the greatest net positive impact possible.	WE Empower UN SDG Challenge - global competition for women social entrepreneurs who are advancing the SDGs and inspiring communities to act to create the world we want by 2030.	https://sustainability-innovation.asu.edu/develop-goals/	https://news.asu.edu/2020/04/22/sustainable-goals/ https://sustainability-goals.asu.edu/	
10	=9	University of Auckland	New Zealand	dedicating itself to the Sustainable Development Goals to help the world achieve the 2030 Agenda. -Key word mapping for SDGs https://www.sdgmapping.auckland.ac.nz/ -Videos https://www.auckland.ac.nz/en/about-us/about-the-university/the-university/sustainability-and-environment/university-of-auckland-times-higher-education-global-university-impact-ranking/sdg-video-case-studies/sdg-17-partnerships-for-the-goals.html -focus on local and global partnerships -member of SDSN -SDG Video case studies engagement videos (by SDGs) -engagement tools "What can you do" -Sustainable Events Guide -Green Your Room 2020 -comprehensive sustainability policy -equal employment and	-Video (Strategic Engagement) https://www.auckland.ac.nz/en/about-us/about-the-university/the-university/sustainability-and-environment/university-of-auckland-times-higher-education-global-university-impact-ranking/sdg-video-case-studies/sdg-17-partnerships-for-the-goals.html -Research led university with a focus on environmentalism and sustainability - focus on water and aquatic ecosystems -IK embedded within research agenda -Higher Education Research Network	SDG courses by SDG https://www.auckland.ac.nz/en/about-us/about-the-university/the-university/sustainability-and-environment/university-of-auckland-times-higher-education-global-university-impact-ranking/sdg-video-case-studies/sdg-17-partnerships-for-the-goals.html -Bachelor of Global Studies -Sustainability Module -SDG 4 (appointed by the United Nations Academic Impact)	-own and manage biodiversity reserve, native forest, wetland and coastal ecosystems -comprehensive and principled practice -health and well-being activities -Water conservation and reuse efforts -localization planning	-working with local community -working with Indigenous community -local community benefit from programming on campus (i.e. health and well-being) -outreach programs	https://www.auckland.ac.nz/en/about-us/about-the-university/sustainability-and-environment/SDGReport.html	https://www.auckland.ac.nz/en/about-us/about-the-university/sustainability-and-environment/SDGReport.html		
11	11	King's College London	United Kingdom	-Environmental sustainability policy -King's College London recognizes it has a responsibility towards being sustainable and protecting the environment. The university has various policies and systems to provide the framework for all our work, whether it be in relation to energy saving, waste and recycling or sustainable transport and to help ensure that we operate in an environmentally sustainable way	The university's Sustainability Champions are working on campus and in our residences to make King's a more sustainable working environment; reducing the negative and maximizing the positive social and environmental impacts. -SDG Accord	research strategy outlines how this will be achieved, including the King's Together initiative to support multi- and interdisciplinary research. The King's Together initiative promotes a combination of healthy lives, culture and identity, and social justice in order to achieve sustainable growth.	The King's Education Strategy, launched in 2017, sets out six strategic goals for education at King's. One of these is embedding civic engagement and service learning across King's. This reaffirms our commitment to making the world a better place, linked to the Service Strategy and our Strategic Vision 2029.	-Net-zero by 2025 -Energy from waste plant -Reduce, Reuse, Recycle waste hierarchy -Waste A-Z -Food waste reduction -Anaerobic Digestion Plant (power sent to the grid) -sustainable food policy -community garden -reducing waste from food services/catering -divestment from fossil fuels by 2022	-Mapping & Community engagement -Community Resilience program (Rainbow Community Action Team to bring solution among adults with learning disability)	https://www.kcl.ac.uk/about/king-s-strategy/pdf/sustainability/	https://www.kcl.ac.uk/about/king-s-strategy/pdf/sustainability/ https://www.kcl.ac.uk/about/king-s-strategy/pdf/sustainability/	

12	13	University of British Columbia	Canada	2	"A simple bold promise lies at the heart of the United Nations Sustainable Development Goals (SDGs): to end poverty and leave no one behind. At UBC, our research, learning and teaching, operations, and student engagement activities contribute to Canada's commitment to achieve these goals." UBC Global Engagement Strategy. In Service, with its theme of UBC as a global citizen and our commitment to building a better world, advocates the vital need to bring knowledge, expertise, partnerships and service capacity to address complex planetary	Joint statement of Global University Leaders on the Agenda 2030 for Sustainable Development -Reimagine 17 student alliance -SDG Social Media Campaign SDG Week -Sustainability & SDG Ambassadors -Sustainability Ambassador SDG Campaign -SDG Alliance Student Group -World's Challenge -Inclusion Action Plan -Also the System Challenge	UBC goal is to excel across the spectrum of fundamental and applied research, advances interdisciplinary and cross-cutting methods, linking research to action both on and off campus. -SDG Praxis Institute 2020: Shock, System Change and Agency	UBC's Campus as a Living Lab initiative -Sustainability Fellowship Program -Sustainability Scholars Program (paid internship program) The Social Ecological Economic Development Studies (SEEDS) partnership between students, faculty, staff and community partners tackling real world issues and using the campus as a living lab. -Toolkit for garden educators -Example of Campus as a Living Lab project (Construction and Demolition Waste Benchmarking)	-Sustainable Purchasing Guide -Zero waste food waste strategy -Mass timber, low-emission and other green building innovations - campus test bed for sustainability leveraging campus infrastructure and built environment to demonstrate innovative sustainability solutions -Climate Action Plan 2030 (CAP 2030) is underway and is a key component to accelerating to net zero carbon emissions -Sustainable Purchasing Guide -Zero Waste Food Waste Strategy -Climate Action Plan -100% Ocean Wise	UBC SDG Alliance ambassadors for community engagement -Westbrook Village: Design for Community Sustainability -Community Roundtables: Collaboration and Complex Issues to surface new ideas and pathways for community-university collaboration.	https://sustainable.ubc.ca/sustainable-development-goals-ubc	https://sustainable.ubc.ca/sites/default/files/UBC_SDG_Report_2019-20.pdf
	14	McMaster University	Canada	3	McMaster's Commitment: "At McMaster, we understand the important role we play as a university in implementing the United Nations 2030 Agenda for Sustainable Development. We are committed to developing solutions and preparing future innovators with the skills that will enable them to contribute to achieving the 17 SDGs. This commitment involves collaboration, knowledge sharing, and generating awareness about the development goals, in our community and beyond."	-website dedicated to the SDGs "Brighter World" -The university hosts conferences, events and podcasts aimed at general audiences, such as its annual McMaster Global event, which in 2020 featured the chief of the United Nations Academic Impact on the role universities play in advancing the UN SDGs, and its Global Health Collective podcast focusing on people helping meet the UN SDGs. -McMaster University launched a new website, Brighter World, to highlight their contributions to the 17 SDGs -SDG Stories	Aligning research to the SDGs to tackle the world's greatest challenges through the following practices: -Collaborate across faculties -Equity, Diversity and Inclusion in Research -Follow a holistic, cross-campus approach -Prioritize societal impact -Cultivate government, community and UN stakeholder partnership -Share knowledge and demonstrate thought leadership -\$100 K funding for research SDG	McMaster's Academic Sustainability Program Office - continued learning and inquiry through experiential learning (interdisciplinary, student-led, community-based) - developing and fostering strong community connections Interdisciplinary minor in Sustainability - Sustainability Internship Program -Graduate/Undergraduate Collaboration in Experiential Learning Program -Community-based Leadership in Sustainability	-elimination of plastic replaced with compostable disposables (cups, cutlery, straws) -Chances to Reuse program (reusable mug and green food containers) -Hospitality focus on local purchasing	-Students work with stakeholders within McMaster and/or the broader community to tackle a real work sustainability project.	https://un-sdgs.mcmaster.ca/	https://un-sdgs.mcmaster.ca/app/uploads/2020/12/McMaster-SDG-Report-2020.pdf
	34	University of Toronto	Canada	4	-SDG Report with institutional progress -Committee on the Environment, Climate Change, and Sustainability -Sustainable Development Goals Steering Committee -mapping/inventory of all SDGs related (courses, research, clubs)	-17Rooms Event -SDG Student Hub -Adams Sustainability Celebration - Series of speaker events hosted by the Committee on the Environment, Climate Change, and Sustainability -Joint statement of Global University Leaders on the Agenda 2030 for Sustainable Development -SDSN partnership	-Research inventory on scholarly publications mapped by SDGs -PhD and Master's inventory mapped to the SDGs -Reach Alliance - multi-disciplinary research initiative investigating pathways the world's most marginalized populations.	-course inventory mapped by SDGs -Campus as a Living Lab of Sustainability -Academic designations on student transcripts or certificate "scholar, citizen leaders" for involvement in clubs, extracurricular activities or courses	-Low-Carbon Action Plan pathway to "net-zero" institution -massive geoexchange project to reduce GHG emissions -Pilot to charge fee for air travel to reduce GHG emissions -Climate Positive Commitment -Divestment from Fossil Fuel	The Reach Alliance - inspired by the SDGs research on critical interventions and innovations for the hardest to reach (poverty, geographically remote, invisible or marginalized) providing leadership and experiential learning for students.	https://data.utoronto.ca/sustainable-development-goals-edg-report/introduction/	https://data.utoronto.ca/wp-content/uploads/2020/02/SUB-TAINABLE-DEVELOPMENT-conceptual-report.pdf
	39	University of Montreal	Canada	5	-UdeM Strategic Plan for Sustainable Development vision: "Building the Future: a responsible, engaged, innovative and resilient community" -Upgrading processes -Establishing benchmarks -Sustainable Development Unit established -9 themes working group for each theme) -Investing to Address Climate Change (a Charter for Canadian universities) "Taking action now to build the world of tomorrow"	L'engagement est dans l'ADN de l'Université. De l'admission jusqu'à l'exercice du métier de chercheur, de professionnel ou d'ingénieur, l'engagement se manifeste d'abord au travers de la mission de l'université au sein de la société: faire acquiescer le savoir. Les exemples d'engagement dans la communauté sont nombreux. Nos étudiants joignent les chiens des personnes en situation d'handicap, aident à la francisation des nouveaux arrivants, distribuent de la nourriture gratuitement à leurs collègues en	Sustainable Ecosystem - SDG-oriented research collaboration -AXE : INTEGRATION DU DEVELOPPEMENT DURABLE DANS LA RECHERCHE Objectif 2.2 : Accroître et assurer l'intégration du développement durable dans les thématiques de recherche	"a toolkit that makes it easier to include sustainable development in university courses (joint initiative with the Vice Rectorate of Student and Academic Affairs); -graduate program in Environment and Sustainable Development AXE : INTEGRATION DU DEVELOPPEMENT DURABLE DANS L'ENSEIGNEMENT Objectif 2.1 : Accroître et assurer l'intégration du développement durable dans les cours et programmes d'études Objectif 2.2 : Créer un cadre qui favorisera les apprentissages et l'enseignement des pratiques du	-sustainable transportation increase infrastructure for active transport -dashboard for carbon footprint -experimental greenhouse -innovative waste management plan -creating a dynamic dashboard that will allow us to regularly monitor UdeM's carbon footprint; -developing an innovative waste management plan	-setting up an experimental greenhouse on the MIL Campus for use by research units, the Local food service and community organizations (a joint project with the Vice-Rectorate of International Affairs and Community Partnerships);	https://nouvelles.umontreal.ca/en/articles/2021/05/05/developpement-durable-ans-uudem-sustainable-development-strategy/	https://www.universityofmontreal.ca/sites/default/files/developpement-durable-ans-uudem-sustainable-development-strategy.pdf
	43	University of Calgary	Canada	6	2020 Institutional Sustainability Report through the form of an interactive website to showcase its positive impact through the lens of the SDGs. These themes are the integration of sustainable development principles, training and research, the fight against climate change, sustainable property management, sustainable mobility, responsible procurement, responsible food consumption, and social engagement.	-SDSN membership -SDG Summit 2017 - SDG Youth Training 2016 - Local Action, Global Impact: 2019 - Intersectionality and the SDGs -Reimagine 17 student Alliance -Sustainability Compass (Wellbeing, Nature, Economy, Society) U of Calgary Virtual Sustainable Campus Tour https://www.youtube.com/watch?v=LIUS8-zopI -engaging community on gardening and pollinator habitats -Sustainable events; office -Sustainability Week -UCalgary develops collaborative partnerships with interdisciplinary networks to advance education, engagement and research for the Sustainable Development	-Interdisciplinary Sustainability research network addressing social, economic and environmental sustainability challenges (local and global) -With approximately 20% of researchers in over 80% of departments conducting sustainability research, UCalgary is integrating sustainability across transdisciplinary scholarship, deepening community integration and delivering future-focused programs. -As a global intellectual hub in Canada's most enterprising city, the University of Calgary fosters a rich environment for sustainability research. These diverse bodies of work are contributing to enhancing the health and wellbeing of humans and animals, creating more	"Campus as a Learning Lab" - focus on experiential learning and using the campus as a living lab to test and model innovative sustainability practices -certificates in sustainability -a holistic approach to sustainability, recognizing that sustainability is more than just going green. Looking to embed sustainability into your UCalgary curriculum -tools and resources for teaching & learning for a sustainable future	-Sustainable Building Design (example Taylor Institute of Teaching and Learning one of the greenest buildings on campus) -Energy Environment Experiential Learning Building (Platinum LEED) -Landscape design (drought tolerant native; edible trees and shrubs); bioswales -Community Garden -dining facilities with compostable cutlery -four stream waste bins -access to water bottle refilling stations -Incentives for reuse -Reduce energy consumption (transitions to LED lighting) -walking path	Sustainable Development Goals Alliance a student run, community centered raising awareness on the SDGs -UCalgary works in collaboration with a number of organizations in the community. Our students, faculty and researchers are actively involved in community engaged learning and community focused research. -The UCalgary campus is accessible to everyone in the community and there are many ways to engage with UCalgary on campus.	https://www.ucalgary.ca/sustainability/development	https://www.ucalgary.ca/sustainability/development/campus-goal-1-no-poverty

17	46	Simon Fraser	Canada	7	Strategic plan w/ targets 1) University Service Innovation; 2) University as a Living Lab 3) Climate Action Leadership https://www.sfu.ca/content/dam/sfu/sustainability/About/Publications/SFU%20Sustainability%20Plan%202025_v1.0_date22282020_digital.pdf	-target to establish a climate action community of practice; increase stories and events -BC Cool campus challenge -Zero/Waste forum -Sustainable campus network -mobile app to raise awareness on waste -strong network of partnerships (SDSN, University Social Responsibility Network, ACU) -Stakeholder Engagement session to generate ideas and recommendations to deepen SFU's impact on the SDGs -Dean's lecture series (from environmental research to public solutions) -Enbark Sustainability (student empowering and inspiring students career)	-Innovation strategy engages SFU researchers, staff and students with communities and partners to solve societal challenges through innovation and entrepreneurship. -researchers developing renewable and creative strategies to support sustainable food systems and reduce food waste. -Stakeholder Engagement session to generate ideas and recommendations to deepen SFU's impact on the SDGs -Scholars for a Sustainable World	-SFU Semester in Dialogue (one semester or a full year program inspire students with a sense of civic responsibility and encourage passion for improving society) (original, interdisciplinary experience that bridges classroom with the community and creates space for students to reflect on what matters). -The Migrant System Change Leadership Program -Scholars for a Sustainable World	-UN Race to Zero campaign -Goal of Carbon Neutral -UN-supported Principles of Responsible Investment -targets to increase plant-based menu items by 50% by 2025 -high efficiency biomass plant transforms wood waste to energy	-Fair Trade Campus Leadership -engaged with BC poverty Reduction Coalition -engaging communities to support ending poverty -City Conversations: the pandemic and climate change (a free online gathering to ignite discussions)	https://www.sfu.ca/sustainability/development-goals/goals.html	https://www.sfu.ca/content/dam/sfu/About/Publications/SFU%20Sustainability%20Plan%202025_v1.0_date22282020_digital.pdf
18	52	Western University	Canada	8	Western is committed to sustainability in all its forms and prepared to play a leading role in areas of research, teaching the SDGs, stewardship, and collaboration with the broader community. By tracking campus initiatives that align with the goals, Western is able to examine current initiatives through a lens that encompasses the three pillars of sustainability—economic, social and environmental, as well as showcase the initiatives and organizations on campus that support creating a more sustainable future for everyone.	Western Challenge Competitions are great SDG engagement tools, for example, Western University's World's Challenge Challenge which invites university students to think big and come up with a plan to make the world a better place. As part of the challenge, students form interdisciplinary teams of two to four members, developing and pitching a solution that tackles one or more of the SDGs. Competitions take place on the campuses of the participating institutions, and the winning teams advance to the annual World's Challenge Challenge Global Final, which is hosted by Western University. -Net-Zero 2020 Pitch Competition	-Our Food Future A new research collaboration between the Ivey Business School and Guelph-Wellington's 'Our Food Future' project will investigate how businesses such as farmers, manufacturers and retailers can create opportunities from waste and establish effective circular supply chains.	-Centre for Environment and Sustainability -The Centre for Building Sustainable Value -Impact Experience is an experiential learning program that offers all students at Western and its affiliated University Colleges access to unique co-curricular opportunities to support community projects around the world. -Global Health Systems program -Global Minds (focuses on low/middle income countries local communities facing systemic barriers esp. mental health). -Community lectures -Community Engaged Learning allows students the opportunity to take their skills beyond the walls of the classroom and into the community.	-by tracking campus initiatives that align with The Goals, Western is able to examine current initiatives through a lens that encompasses The three pillars of Sustainability, as well as showcase The initiatives and organizations on campus that supports creating a more Sustainable future for everyone. -Sustainable Procurement community gardens -Farmers Market -committed to operating a healthy and sustainable food system for the campus community. HS developed a Sustainability Action Plan, which incorporates sustainability in all aspects of its operation. Key goals include responsible sourcing, sustainable	Community Legal Services Operated by the Faculty of Law at Western University, Community Legal Services provides free legal services to low-income people in the community. -Western United Way Campaign -Homes4Women Through a series of concurrent research initiatives and evaluation analyses, the Centre for Research on Health Equity and Social Inclusion (CRHESI) at Western University collaborated on homes4women, a community pilot project that provides housing in London for women experiencing homelessness. -Community SHIR program	https://sustainability.uwo.ca/sdg/index.html	https://sustainability.uwo.ca/sdg/2020Report%20-%20November%2010.pdf
19	62	Concordia University	Canada	9	In fall 2020, Concordia University made an institutional commitment to advance the UN Sustainable Development Goals (SDGs). This is a pledge for our institution to be more self-conscious and more proactive about building sustainable futures – not just environmental sustainability, but sustainability in the broadest sense. -first to launch a voluntary review -Concordia SDG Strategy -Create and SDG lab for Montreal and Quebec -an institutional commitment to join the Decade of Action for SDGs. -Action Plan https://www.concordia.ca/about/sustainability/action-plan.html#:~:text=As%20a%20new%20Open%20University,action%20during	-Concordia collaborated with Academics 2030 and other allies to host a virtual event focused on building back better around the SDGs in Quebec. -Students participate in the Western University -SDSN Membership -University Global Coalition -Voluntary University Review to build awareness of the SDGs; assess levels of activity and linkages, foster collaboration – 17 room exercise (Jan 2022), events, presentations, interviews, discussions -SDG steering committee WWF Living Planet Leader -SDG Launch Event -community event to launch VUR -Student led projects	-Next-Generation Institute – universal approach to sustainable urban cities -Institute for Urban Futures (Faculty of Fine Arts) social design practices future of cities -The SDGs also align with other discourses that are shaping the future of academic research at Concordia and elsewhere: -multi-, inter- and transdisciplinary perspectives -Increasing attention paid to social impact and social innovation -The need to redefine research excellence and develop alternative metrics for measuring impact -Greater recognition of the role and importance of 'mission-driven' research alongside.	-cross-disciplinary courses on topical issues, to provide students with this opportunity because the SDGs are definitely topical and by definition cross-disciplinary, focus on sustainability and diversity studies -The School of Community and Public Affairs offers a unique interdisciplinary education to undergraduate and graduate students in public policy analysis and advocacy and community economic development (The bridge between engagement and academic life)	-Sustainability Action Plan, which includes our intention to become a carbon-neutral institution. -committed to ending investments in coal, oil, and gas within 5 years -Green building design -Zero-waste Concordia -Energy reduction program -Transportation initiatives to cycle, walk, carshare and take public transit -water conservation	SDGs as a roadmap for the university's social impact and public engagement activities and as a basis for deepening its partnerships with other universities, local communities, governments, and businesses. -Community support for community partners through teaching, learning and research (for non-profit or grass roots organizations)	https://www.concordia.ca/about/sustainability/initiatives/sdg.html#what	https://www.concordia.ca/content/dam/Concordia/services/sustainability/SDG%20Initiative%20Brochure.pdf
20	64	University of Alberta	Canada	10	-International Week (Guest Speakers and Activities re SDGs) -Global Goals Talks -World's Challenge Challenge -a competition open to all students to put forward a solution to a global issue aligned with SDG -winning team receives \$10K to implement. -Sustainability Awareness Week with panel discussion 'Advancing the SDGs: What Can You Do?' -Global Leadership International Development -skills/advocacy re SDGs	-Speaker Series -Joint statement of Global University Leaders on the Agenda 2030 for Sustainable Development -Learn about the SDGs Learn Together website: -SDSN Membership -SDG Academy information -International Week for a better world -Global Goals Talks (17 sessions, 17 minutes) -Week highlighted the work of campus and community scholars, researchers and activists as they relate to all 17 SDGs. -Lecture Series -Man the System -Community Forum on the SDG -SDG Student Hub -SDG Design Jam for students -SDG Training from the Foundation for Environmental Stewardship -developed a new website and annual report for storytelling -SDSN partnership -York International Sustainable on The Go Conference -GO Global Competition	Dairy Research & Technology Centre -North Saskatchewan River Valley Forest Reserve Augustana Miquelon Lake Research Station -Sustainability Affiliate Network interdisciplinary community of academics who are integrating sustainability into their teaching and research. -Campus sustainability grants for research to improve operations and practices	-Certificate in Sustainability -UofA Botanic Garden's Green School -Experiential learning opportunities for students, including Campus as a Living Lab -Sustainability Scholars sponsors graduate students to work on applied research projects with Edmonton-area institutions. Over the summer months, successful applicants work with professional mentors, earn up to \$6,000 and complete 250 hours of project work.	-plastic waste reduction through the Zero waste system and in labs. -Campus Food Bank -LeanPath Food waste Tracking -Sustainable Food Working Group -Fresh Routes mobile grocery store -on campus composting	-Community Consultation Plan development -Answering the challenge of SDG 8. The pursuit of meaningful employment for Indigenous Communities	https://www.uofa.ca/sustainability/research/teaching/sustainable-development-goals/index.html	https://www.uofa.ca/sustainability/research/teaching/sustainable-development-goals/index.html
21	67	York University	Canada	11	University Academic Plan 'Building a Better Future 2020-2025 with six priorities for action and a university wide goal to contribute to the Sustainable Development Goals -Sustainability Strategy -Brand Promise	-CIFAL Centre in partnership with UNTAR -Innovation York -COERB + Supply chain management -Disaster Management -Homes4Women Hub -Research Plan -Lassonde School of Engineering integration of SDGs research -Research Plan with a focus to create a just and sustainable world	-Faculty of Environmental and Urban Change -Cross-Campus Capstone Classroom -interdisciplinary teams re: world challenges with social impact. -Lassonde School of Engineering + BEST Lab with UNHack -Development of a Community of Practice for integrating SDGs in Curriculum -York Capstone network (themed around the SDGs)	-Social Procurement Policy -Carbon Neutral by 2040 -Sustainable; significant measures for reducing energy -transportation (subway, bike share, or charging, pedestrian infrastructure) -Zero-waste -Integrating the SDGs into procurement -Service Excellence and the University Service Centre (providing sustainable efficiencies)	-Anchor Institution (employment, infrastructure and social procurement) -York University TD Community Engagement Centre	https://www.yorku.ca/sdgs/ga/	https://www.yorku.ca/sdgs/ga/	

Appendix 2: SDG Associated Training and Information Sessions

SDG TRAINING & INFORMATION SESSIONS	DATE	FORMAT	KEY HIGHLIGHTS/OVERVIEW	URL:
York University Community Forum on the SDGs	2021-01-01	Online Session	Presentation from C4 Classroom on integration of SDGs in development of Renewable Energy Dialysis Machine; SDGs in Academic Innovation; Lassonde School of Engineering integrating SDGs in Curriculum and Hack-a-Thon.	https://yfile.news.yorku.ca/2021/01/10/reminder-community-forum-on-the-sustainable-development-goals-jan-13/
Universities Canada - Social Impact Initiative	2021-01-01	Online Session	Universities Canada hosted a virtual gathering of Canadian Institutions to discuss Universities Commitments to the SDGs to gather stories and identify challenges.	https://www.univcan.ca/priorities/social-impact/
Accelerating progress towards the SDGs in the post-COVID era the contributions of Universities	2021-02-01	Online Webinar	University Partnership to advance SDGs: local, national and international Delivering social impact through transformative community engagement.	https://www.strath.ac.uk/humanities/news/centreforsustainabledevelopmentwebinars/
Association of Commonwealth Universities (Higher Education)	2021-05-01	Workshop	Newcastle University (UK) online event regarding HE local contributions to SDGs	https://www.acu.ac.uk/get-involved/higher-education-and-the-sdgs-network/
York University Student SDG Design Jam	2021-05-01	Online Workshop	Engagement session for students; guest speakers and breakout rooms based on Jeffrey Sachs's six pillars of Transformation to achieve the SDGs; breakout rooms provided design thinking how York U can advance SDGs	https://yfile.news.yorku.ca/2021/04/22/new-student-driven-initiative-offers-a-hub-for-students-to-take-action-on-the-sdgs/
WFCP SDG Affinity Group - Yes it's possible: Integrating the	2021-05-01	Online Session	A panel of Nova Scotia Community College share their approach, successes, challenges of integrating the SDGs.	https://wfcop.org/activities/webinars/may-25-2021-2-2/
SDG Impact Assessment Tool	2021-05-01	Workshop	Showcase of the free online SDG Impact Assessment Tool a free, online resource for research and educational institutions to make self-assessments of impacts on the SDGs, assessing an object's impact on each of the 17 SDGs as either direct positive, indirect positive, no impact, indirect negative, direct negative, or more knowledge needed.	https://sdgimpactassessmenttool.org/en-gb
Times Higher Education Master Class on the Impact Ranking	2021-05-01	Webinar	Global trends; THE Methodology, and demo of the SDGs Impact Dashboard; overview of the methodology; year on year performance analysis; deep dive into SDG by region and demo of the Impact Dashboard.	https://mailchi.mp/7567ac4d2cf3/impact2021
WWF Canada's Designing Change for a Living Planet 2021	2021-05-30	Virtual Hack-a-thon	HEI across Canada participating with select students from each institution, brought together to work collaboratively on designing change with WWF mentors.	https://campus.wwf.ca/event/designing-change-for-a-living-planet/
Co-facilitate a workshop for the Ontario College & University Sustainability Professional (OCUSP) on Integrating the	2021-06-01	Virtual Workshop	co-facilitated workshop on integrating SDGs into strategy (York U and U of Waterloo); challenges were identified of integrated SDGs in HEI	https://www.ocusp.org/
SDSN Canada - The current state of SDGs in post-secondary institutions in Canada	2021-06-01	Virtual Workshop	SDSN Canada Members Meeting with discussion on current state of SDGs in Canada, emerging opportunities and networking. Presentation from Brookings and Rockefeller Foundation on mobilizing campus using the SDGs 17 Rooms initiative.	https://uwaterloo.ca/sustainable-development-solutions-network-canada/sites/ca.sustainable-development-solutions-network-canada/files/uploads/files/notes_-_sdn_canada_members_meeting_2021.pdf
Universities Canada – Conversation with Dr. Jeffrey Sachs: Canada's universities as catalyst for a sustainable recovery	2021-06-01	Webinar	Conversation with Jeffrey Sachs's webinar which was aimed at presidents and senior administrators on the importance of leadership on the SDGs in HEI. "We, at universities, can do a lot. We have some tremendously intrinsic benefits for society, starting with the universality of the knowledge base. We are universities, we are not narrow research centers of one discipline, but truly universal ideas. And we are not running for re-election every year, so we are not bound by politics in the same way. We can think longer-term. And the greatest blessing is that we have young people that are constantly infusing all of this."	https://www.univcan.ca/sustainable-development-goals/canadas-universities-as-catalysts-for-a-sustainable-recovery/
HESI Special Event The Role of Further Education to Drive Collective Action for the SDGs: Building a Sustainable and Resilient Recovery	2021-07-01	Webinar	1. Provide a deeper understanding of the challenges and opportunities faced by HE sector, lesson learnt to support a sustainable and resilient recovery from pandemic that promotes economic, social and environmental dimensions of sustainable development 2. Highlight key stakeholders initiatives that drive innovation efforts in support of the recovery and achievement of the SDGs, through education, teaching and learning, decarbonization of campuses, and other crucial endeavors. 3. Convene and evolving and action-oriented conversation on how to bring about the collective systemic change needed to realize the decade of action and achieve the Agenda 2030.	https://sdgacademylibrary.mediaspace.kaltura.com/media/HESI+Special+Event+Driving+collective+action+for+the+SDGs+A+The+role+of+higher+education_+Building+1_uld2qr16
Danish Trade Council – Applied SDG Framework for Campus Development Impact (training)	3 sessions June 2021	Workshop	Workshop by architect Christensen & Co on how to integrate SDGs in Facilities and Capital Buildings Projects (participants: York U, Uof T, Concordia)	https://ccoarch.com/
WFCP SDG Affinity Group - 2030 SDGs Game	2021-06-01	Virtual Event	Overview of The 2030 Game – a multiplayer, in-person and virtual game that stimulates taking real world into the year 2030.	https://unevoc.unesco.org/home/SDG+Affinity+Group

Shaping Sustainability Conference organized by Lt Governor Elizabeth Dosseswell	2021-07-28	Virtual Conference	deep dive into the work being done across Ontario to shape sustainability. Panels will explore various cross-sections of our society and how sustainable thinking can apply to all aspects of our lives, shaping where and how we live, work, and play.	https://www.lgontario.ca/en/2021/06/05/shaping-sustainability-conference/
Webinar: Universities SDG Reports: - what is (current) best practice? - by SDSN	2021-07-26	Webinar	single global standard on university SDG reporting, universities face the challenge of determining what data to include and how to gather it.	https://ap-unsdsn.org/webinar-sdg-reports/
THE Impact Rankings 2022 Masterclass N. America	2021-09-14	Webinar	THE's Impact Rankings are our most inclusive rankings yet, open to all universities. With tables for each of the 17 SDGs, the rankings provide an opportunity to highlight the great work your institution is doing for society at all levels - on campus, in your local environment, and further afield. • Why participate in the Impact Rankings • Methodology and changes for 2022 • Key dates • Data submission and Portal walk-through • Submitting evidence: what we are looking for • Reviewing performance via THE's SDGImpact Dashboard	https://www.timeshighereducation.com/
AASHE Conference	2021-10-01	Online conference	The failure of many entities to respond effectively to a deadly pandemic, coming at a time when society is already reeling from intensifying climate-related disasters, ongoing systemic racism and rising authoritarianism, has resulted in profound apprehension about the future. With a theme of "The future is ...", this year's Global Conference on Sustainability in Higher Education reflects the uncertainty about the future that many feel and invites participants to recommit themselves to the urgent work of building a future that is sustainable, equitable, and resilient. We seek to highlight inspiring examples of higher education leadership that empower participants to envision and create such a future. Ultimately, the future is ours to make. Are you committed to leveraging the power of higher education to forge a brighter future?	https://www.aashe.org/conference/
CIFAL / York International - Multi-level Joint Action for Climate Change	October 20-21, 2021	Online Session	Pre-COP26 workshop / knowledge-exchange dialogue will bring researchers and practitioners together for an in-depth discussion on joint action for climate and biodiversity, aligned with the Sustainable Development Goals. The purpose is to deliver concrete recommendations to strengthen stakeholder engagement at scale for integrated action for climate, nature, and people.	https://hopin.com/events/multi-level-joint-action-for-climate-nature-and-people
UN Hack - BEST LAB Lassonde School of Engineering at York University	November 19-21	Online	UNHack is a community event for all undergrad post-secondary and grade 11 & 12 high school students to come together for an unforgettable weekend to try and solve some of the world's greatest challenges. Various community partners pitched challenges, including the Office of Sustainability, all themed around the Sustainable Development Goals.	https://www.bestlassonde.ca/event/unhack/
Universities Canada - Social Impact Initiative	2021-11-25	Online	Universities Canada hosted a virtual gathering of Canadian Institutions to discuss Universities Commitments to the SDGs to gather stories and identify challenges. Guest speaker was President. Dr. Jacqueline Ottmann from First Nations University who spoke about the importance of Indigenous Knowledge and the SDGs.	https://www.univcan.ca/priorities/social-impact/
York University Community of Practice - SDGs in Curriculum	2021-11-26	Online Workshop	York University Community of Practice - SDG Curriculum. Provostial Fellow Cheryl van Daalen-Smith leading efforts in collaboration with the Teaching Commons, and Knowledge Mobilization. Goals 1) Identify faculty (champions) who have begun to find ways to infuse the SDGs into their curriculum. 2) develop best practices and knowledge sharing 3) co-create a community of practice for SDGs in curriculum.	https://yfile.news.yorku.ca/2021/10/20/faculty-members-can-co-create-community-of-practice-on-un-sdgs/
Cross-Organizational Leadership Development Pilot Program	3 sessions May/June, 2021	Online Training	Leadership Development on Organization Change -- Session 1) Accountability: It's a Tricky World. Session 2) Time to Dialogue 3) Realizing the Power of Differences: Thinking Differently about Diversity	https://coachingourselves.com/programs/
Embodied Leadership for Creative Teams	Oct 2020- June 2021	Online Training	The PUPA process and the practice of Focusing, a deep body listening practice.	https://pupa.ca/courses/p/embodied-leadership-creativity
Theory U MIT & Ulab	self paced	Online Course	Presencing; Leading from the Emerging Future - from Ego-System to Eco-System Economies -- how this applies to sustainability/SDGs	https://www.edx.org/course/ulab-leading-from-the-emerging-future