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## Path to 2030:

### Showcase of SDG implementation in the City of Trondheim

Master's thesis in Globalisation and Sustainable Development  
Supervisor: Hans Martin Thomassen  
June 2022



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## **Abstract**

With the growing debates around sustainability and sustainable development, this thesis seeks to address how Trondheim Kommune is seeking to implement the Sustainable Development Goals (SDGs), as well as addressing the challenges of translating global debates on sustainability into the local reality of the City. The partnership between Trondheim Kommune with the UN and other institutions and actors is also part of the object of study. The findings were made through the analysis of municipal plans, official reports from the UN, OECD, Norway and Trondheim, as well as the use of tools that serve to measure the progress of SDGs locally and nationally. In addition, my experience as an intern at the Trondheim Sustainability Center helped me gain internal insight into how some decision-making is done.

**Key words: Sustainable Development Goals; Partnership; Sustainability**



## Acknowledgments

It's a dangerous business, Frodo, going out your door. You step onto the road, and if you don't keep your feet, there's no knowing where you might be swept off to. (J.R.R. Tolkien)

With this passage of Tolkien, I begin my acknowledgements to everyone who was and is part of this journey that brought me through paths I never imagined.

Without a shadow of a doubt, I couldn't start thanking you without starting with my parents, who supported me and are fundamental to my development and maturation. Without you, this path would be impossible. You believed in my dreams and continue to support me on this journey. I love you.

To my supervisor, Hans, who was always helpful and available, ready to guide and help me on this journey, thank you very much.

To my friends who stayed in Brazil, you are greatly missed, but without a doubt, I could feel the positive energies you sent and keep you with me wherever I go.

To my friends I met in Norway, meeting you on this journey was an immense joy. In the differences we met, and so we could share our dreams.

To all the professors and staff of NTNU, thank you for your trust. Norway, a welcoming country that opened its doors to this simple Brazilian, I also thank you very much. I learned a lot and matured in these two years of study. Today I consider myself a citizen of the world, and I will take this experience with me forever.

Finally, the Norwegian weather, which has not always been friendly but has taught me that I can continually expand my limits and grow with challenging situations, the Norwegian climate has taught me to step out of my comfort zone.





## Motivation

My motivation to develop this research came during my internship at Trondheim Kommune, more specifically in the Sustainable Center office. This internship allowed me to work with different actors (public and private) and thus, directly and indirectly, contribute to the implementation of SDGs (Sustainable Development Goals) and better understand how the creation of public policies develops.

Through the work developed throughout the semester, I was able to have more significant contact with strategies and greater insight into the ways that the city is taking to implement the 17 goals and include the population as a whole. Trondheim joined the Geneva UN Charter Centres, and became the 5<sup>th</sup> city together with Tirana (Albania), Vienna (Austria), Tallinn (Estonia) and Glasgow (UK). The Centre's ideal is to support the implementation of the Charter through multiple activities like studies, awareness raising, training, and concrete projects to improve the quality of life in cities (UNECE, 2019).

Coming from a country considered to be “in development”<sup>1</sup> and considering that I have already had contact with city halls and public actors in Brazil, I was able to observe this time the perspective of a country considered “developed”<sup>2</sup> in relation to decision-making. The internship allowed me to have better contact with what was developed so far in the city of Trondheim around the implementation of the SDGs and to better understand how the city of Trondheim is connected to the fulfilment of the 2030 Agenda. As a result, the SDGs have become the foundation of public policies implemented by countries and cities worldwide, as well as being used by corporations and non-governmental organizations (NGOs), giving credibility to organizations that base their activities on the SDGs.

I believe that this research is relevant because it can be used not only by other Kommunes but also by other actors who seek to better understand how decision-making takes place and which paths are being traced, until then, for better use of the Objectives created by the UN. In addition to

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<sup>1</sup> This terminology is currently quite questioned, since it does not reflect the entirety of a country, so I use quotation marks, since "Many developing countries are not necessarily poor, although they may have large numbers of poor people. They may have a wealth of resources, either in the form of mineral, agricultural or human capital, suffered from policies that have been imposed but on them, or poorly implemented. [...] Describing a country as developing leads to the use of simplistic primary indicators by which we measure success and, in turn, simplistic solutions" (The Guardian, 2014).

<sup>2</sup> Same as above.

understanding how sustainable development is treated internationally and locally, since the challenges currently involve complex issues that cannot be solved separately in sectors or by single actors, but need to constitute the construction of tools and instruments such as innovation, regional and local research and planning to be implemented in society.

Sustainable development is an increasingly relevant topic, and there is still a long way to go to achieve a balance between human activity and nature. So, I hope that this work helps in this way.

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## Abbreviations

UN – United Nations

OECD - Organisation for Economic Co-operation and Development

SDGs – Sustainable Development Goals

UNECE - United Nations Economic Commission for Europe

NGO - Non-Governmental Organizations

KPI - Key Performance Indicator.

ICT - Information and Communications Technology

EU – European Union

OPEC - Organization of Petroleum Exporting Countries

MDGs – Millennium Development Goals

UNDP - United Nations Development Programme

ILO - International Labour Organization

WHO - World Health Organization

GPD - Gross Domestic Product

GNI - Gross National Income

NTNU - Norges Teknisk-Naturvitenskaplige Universitet

U4SSC - United for Smart Sustainable Cities

## **Chapter one**

### **1. Introduction**

Over time it is possible to observe the world becoming more and more globalized. Countries, institutions, organizations, and people are increasingly connected, and topics that were once restricted to specific regions are now being debated at global levels. With a shrinking world, it is almost impossible to live in isolation and not be part of global agendas. Moreover, a topic that has been gaining more and more space in recent debates is sustainability and how to continue developing – socially and economically – without affecting the environment.

Tomlinson (1999) shows that globalization concerns the network of interconnections and interdependencies that are in an accelerated development that characterizes modern social life. When observing the discourses that surround theories of globalization, it is possible to see that it is full of metaphors when speaking of global proximity, of a 'shrinking world'. Given this, to understand the idea of globalization is to understand the various modalities of connectivity that exist, whether between goods, capital, people, knowledge, etc. It is thus a way of understanding the existing proximity that comes from the network of social relationships in large extensions of time and space, thus making events and institutions that were once distant now penetrate our local everyday experience (Tomlinson, 1999).

With regards to the thinking about development, it is observed that the concept is generally seen as something strictly positive. The idea of development brings an idea of "evolution", of "improvement", being commonly associated with a positive economic/social growth, thus being normalized. However, over the last few decades, it is possible to see the emergence of movements that seek to rethink this concept since development is currently known to be associated with the accumulation of wealth, exploitation of natural resources and labour, climate change, etc. (McMichael, 2017). Therefore, throughout this research, it is essential to keep in mind that the concept of development does not necessarily follow the mainstream way of thinking.

With an increasingly interconnected world, it is possible to observe an increase in the sharing of responsibilities and commitments regarding global problems. In addition, it is also possible to observe the UN as one of the main actors driving such debates. With this, Norway is now committed to fulfilling the sustainability goals established and defined by the UN. Therefore, this work aims to analyze the way in which such work is being done in Norway, having the

Trondheim Kommune as a concrete starting point. In this research, the task was established to understand how the Kommune (based on the experience lived in my internship at the city's Sustainability Center) talks about sustainability and how it is understood at the local level since, around the world, each city (based on its local context) will implement the SDGs differently.

Therefore, some questions will seek to be answered, such as How Trondheim's Kommune is trying to implement the SDGs? Which partnerships can be important in achieving the goals? - What are the challenges for 2030? - How can the partnership with the UN influence the decision-making in the city of Trondheim? – Such questions will serve as a guide to better understand these paths toward a more sustainable world and how local initiatives can play a decisive role in the implementation of global agendas.

## **1.1 Sustainable Development in an increasingly globalized world**

As time goes by, it is possible to see an increasing number of issues with transboundary implications, often reaching global levels, thus making international articulation necessary for the management of these problems, and international environmental problems are growing in this matter (Esty; Ivanova, 2005). Economic, social and environmental crises are no longer restricted to the borders of countries. Especially after the world wars, it is possible to see a global effort for mutual resolution of these problems and thus, the emergence of global governance can be observed.

The Report of the Commission on Global Governance shows the governance process as to how institutions (public and private) and individuals manage their everyday affairs. It is a continuous process through which conflicting or diverse interests may be adapted, and cooperative efforts may be made. Still, according to the report, "it includes formal institutions and regimes empowered to enforce compliance, as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interest." (Report of the Commission on Global Governance, 1996, p.1).

Given these points, Rosenau and Czempiel (1992) state that governance is not synonymous with government. For them, governance is a phenomenon that has a broader scope because it involves both governmental and non-governmental institutions. Furthermore, as challenges of a transnational dimension are increasingly observed, the environmental issue challenges the borders



and sovereignty of nation states by demanding the recognition of the ecological interdependence between global territories. Therefore, in the face of these issues, it is possible to see the UN taking the initiative to resolve, debate and implement changes at a global level, and the SDGs are the fruits of hard work to achieve the desired changes.

## **1.2 Role of the UN in Sustainable Development**

Regarding the debates around sustainability and sustainable development, one actor stands out when talking about these topics, the UN. The UN, throughout the post-World War II period, has been consolidating itself in the world as a prominent actor. Initially, with the mission of guaranteeing peace between nations, the UN has been working in different areas, such as the search for an end to poverty, gender equality, preservation of the environment, respect for human rights, and economic development, among many other topics that have been debated decade after decade. Initially formed by countries, the UN seeks to act in a way that not only the interests of specific groups of countries are served, but the interests of the population in general. Therefore, the UN General Assembly is the body in which all member countries have equal participation, with the "one country, one vote" system, guaranteeing broad representation (UN, 2022).

The UN have several organizations that either are part of the United Nations organization itself or are linked to the United Nations framework as organs and programmes, Regional Economic and Social Commissions, Specialized Agencies, Environmental Bodies, Joint and Coordinating Mechanisms and they work in multiple areas of interest.

Cooperation between the UN and other UN entities is crucial in obtaining the Organization's set targets in the UN Charter. Since its beginning, the United Nations have been tasked with undertaking new tasks that were not anticipated at the time of its creation. As seen, the Organization has established goals for creating a more sustainable world and has agreed to take collective action to slow climate change. As humanity's problems have grown in size and scope, so has the United Nations' work (UN, 2022). With that in mind, it will be possible to see how the partnership with Trondheim Kommune is part of this process of building a more sustainable world.

### 1.3 Norway and Trondheim

The Sustainable Development Goals developed by the UN have been an essential gauge of the way countries are managing their resources and how their actions are impacting the environment. Therefore, such work saw an opportunity to better understand decision-making at the international level that also has influence at the local level. The actions taken by Norway have a direct influence on its cities and how they position themselves in this global scenario.

Europe is the worldwide leader regarding the implementation of the SDGs, but it has negative international spillover<sup>3</sup> effects. For example, the top ten countries in the global SDG Index for 2021 are European. Except for Japan, all of the top 20 countries are European. With the adoption of the European Green Deal in 2019, Europe became the first continent to make a bold commitment to achieving climate neutrality by 2050. As a result, Europe serves as a global standard-setter. However, significant SDG challenges persist in all European countries, and more effort is required to align Europe's domestic transformations with its external relationships and cooperative efforts. According to the International Spillover Index, European countries have significant negative spillovers outside the region, with severe environmental and socioeconomic consequences for the rest of the world. Deforestation and biodiversity loss caused by trade in timber, palm oil, coffee, rubber, soy, and other commodities are two prominent examples of how current consumption in EU countries contributes to environmental degradation outside Europe (UN, 2021).

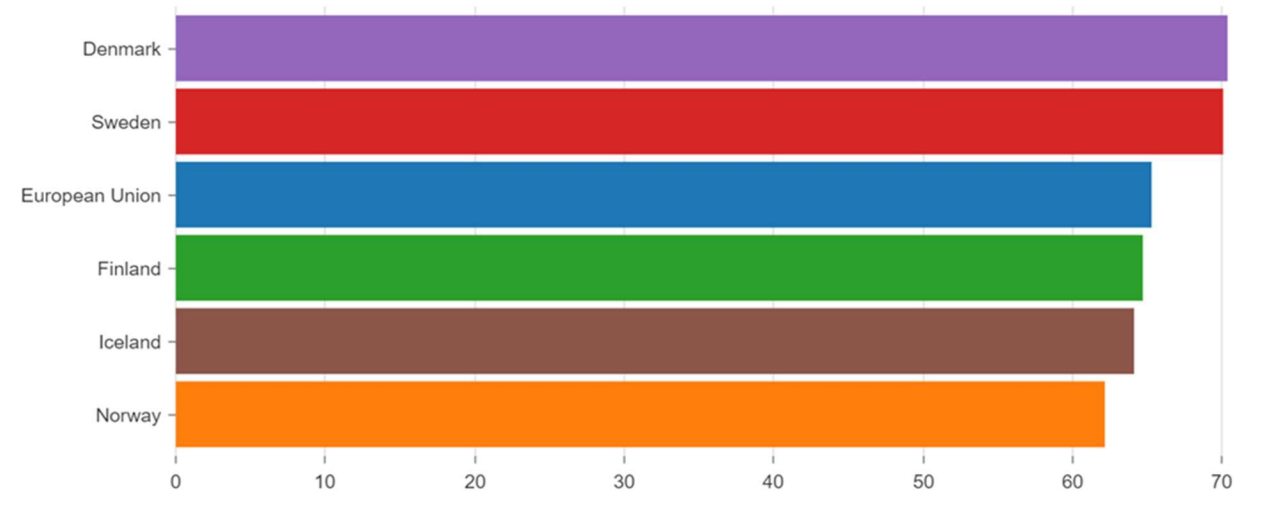
Following that, it is possible to see the figure below that shows Norway's spillover score compared to other Nordic countries and the European average. Such a graph shows that Norway still has a certain degree of unfavourable influence on other countries in the world. Therefore, it is crucial to understand the importance of the measures taken by the city of Trondheim and its international partnerships. This allows for a case study of how a city approaches these global challenges and can give some insight into possible effects and how Norway as a country participates in international relations. How it positively influences other countries and cities is part of the larger scope when implementing the SDGs because many times, cities and countries close

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<sup>3</sup> “Each country's actions can have positive or negative effects on other countries' abilities to achieve the SDGs. The Spillover Index assesses such spillovers along three dimensions: environmental & social impacts embodied into trade, economy & finance, and security. A higher score means that a country causes more positive and fewer negative spillover effects” (European Sustainable Development Report, 2021)

themselves off and are not part of this changing world. However, partnerships and collaborations are essential in order to obtain a positive result when implementing the SDGs (The Partnering Initiative and UN DESA, 2018)

Figure 1 - Spillover score (Nordic countries and European Union average)



Source: European Sustainable Development Report 2021

In general, both Norway and Trondheim are highlighted in the implementation of the SDGs, and both have been gaining this prominence by achieving the targets of the Goals. However, even in the face of positive news, it is still possible to observe obstacles and difficulties that the Trondheim Kommune is facing that may hamper the completion of all the Goals by the year 2030, which will be addressed later on. Therefore, it is necessary to understand the importance of global partnerships and how global initiatives can have a direct impact on these types of policies and understand the potential of becoming an international actor in this globalized world.

The city of Trondheim has been gaining prominence regarding sustainability and initiatives that encourage the execution of activities that aim to transform the city into a reference in the sector. Currently, the Kommune is working on several fronts, among which some stand out as the Center for Sustainability (where I did my internship), +CityxChange, and Smartby Trondheim. Such initiatives show how the city is seeking to face the current changes in search of building more sustainable cities and communities. This work will aim to go more into the activities carried out by Trondheim Kommune, including how the work progressed and how the city is on track to meet its 2030 targets.

## **1.4 Sustainable Center**

In 2019, the city of Trondheim was established by the UN as a great city in terms of sustainable development. The municipality received the honour of the "United Nations Charter Centre of Excellence in Geneva" for the development work that the municipality carries out in a variety of expert and action environments. The Centre promotes a practical approach to the SDGs by innovating new energy and mobility systems, using the city and region as a testbed, and bringing together public and private sector partners. Building on their solid foundation, they can assist the UN in developing new standards and guidelines, such as the recently endorsed UNECE city guidelines for reporting on the Sustainable Development Goals (UNECE, 2019).

## **1.5 Positive City exchange**

The +CityxChange is a smart city project in Trondheim that obtained funding from the European Union's Horizon 2020 research and innovation program in the call for proposals on the topic 'Smart cities and communities.' The project's main idea is to build positive Energy Blocks and Districts in the city, contributing to the European Clean Energy Transition goals across EU cities. Following this logic, the project can help cities all over Europe to get closer to meeting two central EU Directives: the Energy Performance of Buildings Directive and the Energy Efficiency Directive. They both serve as crucial EU legislative instruments to support the improvement of building energy performance in EU countries (+CityxChange, 2019).

## **1.6 Smartby**

Another initiative implemented by the City of Trondheim is the construction of the project called Smartby (Smart City). A smart city is where existing networks and services are made more efficient via the application of digital technology for the benefit of its residents and businesses. This seeks to use different types of electronic sensors to collect data and thus use them to manage resources and assets efficiently, including collected data, devices that are processed and analyzed to monitor and manage traffic and transport systems, power plants, water supply networks, sanitation management, crime detection, information systems, schools, bookstores, hospitals and miscellaneous other services.

Such a concept integrates information and communication technology (ICT) and multiple physical devices connected to a network to optimize the efficiency of city operations and services and engage with citizens. Significant technological, economic and environmental changes have generated interest in smart cities, including climate change and economic restructuring. It goes together with SDG 11 (Sustainable Cities and Communities), which focuses on making cities and urban areas more inclusive, safe, resilient, and sustainable. (Trondheim, 2022); (European Commission, 2022; Trondheim, 2022).

### **1.7 Alternatives to Development?**

As will be shown throughout the research, the idea of development is a theme that has been recurrent and widely discussed, especially after World War II, going through economic, political and social aspects. Moreover, with the consequences of this form of development, some people started to criticize the mainstream forms of development.

Therefore, one point I would like to mention is Alternative Development, which emerged among these debates about development and together with sustainable development, brings the idea of an alternative to the mainstream idea of development. For Brun and Blaike, "Alternative development is concerned with identifying and promoting alternative practices and redefining the goals of development" (Brun and Blaike, 2014, p.1). The authors also present alternative development with two different approaches, firstly by observing the social context from which these ideas come, and secondly by referring to "personal histories of practitioners [...] and how these personal histories reflect and affect the development ideas (Brun and Blaike, 2014, p.16).

Unlike mainstream development, which is based on economic growth, increased productivity, and high consumption and focused on state centralization or encouraging market growth as its main drivers, alternative development seeks the opposite of these practices, in which individuals, communities, and non-governmental organizations play a more prominent role, which can also be seen in sustainable development.

Brun and Blaike (2014) also show that in these types of development, people have the right to be involved both in the construction of knowledge and in decision-making processes, giving voice and space to the most marginalized people, thus having as important points "social practice", "participation" and "empowerment". It can also be said that, in some areas, the alternatives to

development have achieved great merits, such as bringing gender and empowerment issues to institutions like the IMF and the World Bank. These institutions also have programs and projects that deal directly with issues such as poverty reduction, issues that after World War II had little focus (Brun and Blaike, 2014; McMichael, 2016).

White (1996) also shows that thinking about the participation of groups in the civil society as a form of empowerment is capable of transforming these realities because these groups will be able to have a practical experience by getting collectively involved in decision-making, and will also be able to participate, for example, in combating injustices, thus giving these people more confidence in their abilities. Therefore, it can be observed that thinking about an alternative to the current development aspects may end up being, for certain groups, a better way to understand problems such as poverty, inequalities, and social injustices.

With this in mind, it will then be sought to show how some debates emerged regarding new alternatives to the mainstream development models and how sustainable development has been gaining ground in the main fields of debate on global agendas.

## **1.8 Approach to the Theme**

Given the above, this research was divided into a few chapters. In the following chapter (chapter two), it will be sought to show the theories that influence the proposed theme, understanding better the development of debates about sustainability and how sustainable development gained space on the global agenda. This chapter will also address the global climate conferences and their effectiveness, in addition to bringing the emergence of SDGs and how Norway and the city of Trondheim relate to this theme.

In chapter three, the methodology used to analyze this theme will be discussed, seeking to explain the choice and importance of the theme today. Along with this, the challenges both in obtaining data and in the way of being inserted in the field of observation will be shown. This chapter is important as it addresses different perspectives observed in the social sciences and reflects the paths taken during research and observation.

In the next chapter, the fourth, analysis and presentation of the theme will be sought in more depth, showing the importance of sustainability as a theme that has been growing in global agendas and how important it is to understand how local initiatives can play a fundamental role in

the execution of global agendas, also showing the importance of the “top-down” scope, when addressing both sustainable development and sustainability. At this point, a clipping will be made about the activities developed by Trondheim Kommune, having the focus on the Sustainability Center existing in the city, the result of a partnership with the UN.

In chapter five, a discussion will be made about the theme and the findings and conclusion made during the research. The purpose of this chapter is to bring a more concrete perspective of how the work is done at the Trondheim Kommune/Sustainable Center approach and possible fixes and critics to the problems encountered so far, which may hamper the achievement of the SDG targets for 2030.

## **Chapter two - Theoretical Framework**

### **2. From Development to Sustainable Development**

“Arguably, ‘development’ is not only in crisis but is also at a significant turning point in its short history” (McMichael, 2016, p.2)

The idea we have today of development has been shaped and redesigned over the centuries. Since colonial times, it is possible to observe the formation of the idea of development with European domination as the center, which came to be understood as superiority and leadership along an axis of development (McMichael, 2016). Even though it is possible to observe that in its origins, the idea of development has global aspects, the meaning of development, however, sought to compare European achievements with societies that were increasingly disrupted by imperial enterprises referring to that time. It is thus possible to observe that such achievements occurred with substantial upheavals both at environmental and social levels, often being violent. Even so, such theories and models of behaviour were represented as a set of results that should be imitated by other countries. Thus, the ends that development seeks end up justifying its means, even if ecologically and socially, they have moral and beneficial implications in the short and long term. (McMichael, 2016).

With the advancement of technology and the expansion of capitalism through the industrial revolutions, it is possible to observe that the imbalance between human activity and the environment has only increased. It is increasingly possible to observe extreme environmental events with the expansion of the idea of development. Even today, the idea of sustainable development is not put into practice or accepted in many parts of the world, and there is still a long way to go for both implementation and awareness of this concept.

#### **2.1 Predecessors of Sustainable Development**

"We are dreaming of conquering space. We are already preparing the conquest of the moon. But if we are going to treat other planets as we are treating our own, we had better leave the Moon, Mars and Venus alone" (Carson, 1962, p.16).



As previously presented, the quote taken from Rachel Carson's 1962 book, *Silent Spring*, provides an essential insight into the debate that would become frequent in the following decades, the debates around sustainability. At a time when issues related to the environment were not yet part of the global agenda, her analysis of the ecology and the relationship of plants and animals with each other and between them and human activity brings to light important themes, which concern environmental preservation. The alert was already raised for problems that would later be dealt with at global levels and that were already gaining prominence in her work, showing the pollution of rivers, air, land, sea by lethal chemical components that, for the first time, according to the author, it was leaving all human beings susceptible to contamination.

This analysis is based on the growing economic development observed in the post-World War II period, a development that took place in an uncontrolled and poorly regulated way, allowing high levels of pollution at a global level, which had already been observed in the post-industrial revolution, but which at this time takes proportions never seen before.

Such work is credited as an important milestone for the environmental movement, as it initiated essential changes in the regulation of pesticide use in the US, confronting industries and companies that were being responsible for such acts of pollution in US territory, which were becoming increasingly common at this time.

It was between the 1960s and 1970s that environmental warnings began to spread around the world, given the events that killed thousands of people decades earlier due to pollution. It is possible to observe in Hogan (2007) the description of events related to atmospheric pollution, such as what happened in the Meuse Valley, located in Belgium, in 1930, which ended up causing the death of 60 people. Another example can be observed in 1952, the smog in the city of London, an event that became known as "The Killing Mist", which caused more than four thousand deaths. This event became the first to promote movement by health authorities and brought attention to air quality. Hogan still talks about other cases of water contamination, such as the one in Minamata Bay in Japan in 1956, which until 1974 recorded 107 official deaths and about 3,000 cases being checked.

In 1956, according to Goldemberg and Barbosa (2004), the Clean Air Act was passed in England, and new laws were passed in North America and in several Western European countries, in addition to Japan, providing for the creation of monitoring agencies, in addition to regulation and assessment of environmental quality.

These events and constant observations of the effects of the industrial revolution, as well as changes in human behaviour patterns, brought to light fundamental themes for what would become the concept of sustainable development (and which will be discussed later). Until then, environmental degradation was seen as a "necessary evil" and was part of the growing economic development observed at that time.

## **2.2 Emergence of the term Sustainable Development**

As will be shown throughout this research, the idea of sustainability is not only understood as the need to preserve the environment around us, such as fauna and flora (for example, with the preservation of endangered species and reforestation), and, sometimes, at the beginning of the debates, it could be understood this way. However, nowadays, sustainability can and should be understood beyond that. It can be understood as something that goes beyond the search for a balance between the available natural resources in the environment and the way that humans exploit these resources. But it is also connected to economic and social factors around this activity, that needs to be put into the equation when it comes to sustainable development.

Considering that maintenance of current social and economic aspects is sought, it is also necessary to take into account the various aspects that surround human activities, such as the different existing lifestyles, thus understanding social differences, consumption patterns, as well as the implementation and development of technologies in this process and the ways in which business is done, for example, how companies can produce, distribute and offer their products. Thus, then, sustainability is understood to have the three pillars showed above, which cover environmental, social, and economic aspects.

The debates around sustainability have been occurring throughout the past decades because these debates seek a change in the lifestyle of many people, institutions and countries. The concept of sustainability aims to achieve a reduction in excessive consumption at the expense of rebuilding a more sustainable environment, such as by reducing or even eliminating the use of non-renewable materials that pollute and degrade the environment. As a result, activities that encourage everyone to participate become even more crucial. As a result, the concept of sustainability attempts to improve people's quality of life while minimizing destruction and damage to the environment (Our Common Future, 1987; UN, 2022).

To understand how we arrived today at global agreements aimed at preserving the environment, involving various actors such as countries, companies, institutions, NGOs and people in general, in favour of sustainable development, it is necessary to go back a little in time. As mentioned before, with the end of the Second World War, a rapid and constant economic growth of several countries was observed, leading to a high population growth, pollution and unbridled exploitation of natural resources, factors that were already observable at the beginning of the industrial revolution, but which increased even more with the measures taken after the Second World War.

As mentioned in the previous point, the book *Silent Spring*, by Rachel Carson, is considered as the launch of the environmental movement in the Western world and the awakening to this theme, which would only gain strength from there, making a connection between the environment, economy and social welfare. Nevertheless, it was from 1972 onwards, with the Stockholm conference (United Nations Conference on the Human Environment), that the topic became a global debate. For the first time, countries and organizations from different parts of the world gathered to discuss the results of the development observed so far and thus begin the necessary changes to avoid further damage to the environment. However, over the course of this decade, it was observed that the proposed changes were not achieved since countries, especially those considered developed, were not willing to give up their economic growth, and what was seen was the worsening of environmental damage. Another important point to mention in the debates around sustainable development is the study "Limits to Growth" (1972), which was commissioned by the global think tank Club of Rome and was based on the output of computer simulations that represented a simple global economy and its interactions with environmental processes. The study showed the ecological limits to the physical scale of economic activity, limits to economic well-being derived from the growth of economic activity and also the social limits to economic growth.

Thus, in 1983, the UN implemented the Brundtland Commission, headed by the former Norwegian Prime Minister, Gro Harlem Brundtland, with the objective of managing development without harming the environment. This commission launched the Brundtland Report in 1987, a report that served to popularize the term "Sustainable Development", which coined the following definition: "Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Report, 1987).

This debate around sustainable development led to the creation, in 1992, of the Environmental Conference known as Rio 92 in the city of Rio de Janeiro, which led to the signing of several agreements and that marked history, with a large number of leaders and representatives of State, as well as NGOs and reporters from around the world, giving even more visibility to what was being discussed at this conference.

And as an example of this, it is possible to observe the creation of global goals by the UN so that there is a balance between the human needs necessary for survival and the environment, where the needs of the first are met without aggression to the second, doing so a global call for practical action to end poverty, as well as protect the environment and climate, thus ensuring that people in all countries and regions can enjoy peace and prosperity (UN, 2022).

Adams (2009) points out that part of the initiative to hold a conference and the beginnings of debates on sustainability emerged from a "mainstream" view, more specifically on the part of industrialized countries and reflected specific concerns that these countries were facing. In addition, countries with still-developing economies began to see environmental debates as a way to stop their respective forms of development, since industrialized countries had already gone through this process, and an equal sharing of responsibility for environmental damage and preservation would not be fair. Thus, in this scenario, the term Sustainable Development only started to grow in terms of adherence, and from then on, the global agenda started to work on the theme in an increasingly recurrent way.

### **2.3 Environmental Conferences and their effectiveness**

Environmental problems do not see borders or walls and do not make cultural or ethnic distinctions. Therefore, when talking about sustainability and, more specifically about sustainable development, it is necessary to integrate as many countries as possible so that the desired solutions can be reached in a faster and more promising way. Thus, in order to achieve such solutions and as mentioned above, the UN has been playing an essential role in this theme, and the global climate conferences are an example of attempts to achieve these goals.

Until then, there have been several environmental conferences and agreements that mark these debates around environmental preservation and sustainability, but four conferences about the climate will be highlighted here. In chronological order, we have the Stockholm Conference, held

in 1972 in the city of Stockholm - Sweden and is the landmark of global debates on sustainability, thus inaugurating the search for balance between economic development and reduction of environmental degradation, which later would evolve into the notion of sustainable development (UN, 2022).

In 1992, in the city of Rio de Janeiro - Brazil, the second Conference was held, which is seen as another milestone in the debates on sustainable development because, for the first time, a conference of this size had great worldwide repercussions, bringing together representatives from 176 countries, in addition to around 1,400 Non-Governmental Organizations (NGOs), totalling more than 30 thousand participants throughout the event. As a result, Agenda 21 was created, which can be considered a participatory planning instrument aimed at the pursuit of sustainable development. This document was signed by leaders from 179 countries, generating high expectations regarding the results of such a document. However, even with all the recognized success of Rio 92, the expected results were not fully realized. Countries considered developed, underdeveloped and developing differ in terms of responsibility for global warming and climate change caused throughout history, thus blocking measures that could positively impact environmental transformations (UN, 2022).

In 2002, in Johannesburg - South Africa, the third climate conference was held, called Rio+10. The debates at Rio+10 were not restricted to the preservation of the environment but also encompassed various aspects, including social ones. One of the most important points of the Conference was the search for measures to reduce by 50% the number of people living below the poverty line by 2015. Other topics were discussed, such as issues related to water supply, basic sanitation, energy, health, agriculture and biodiversity, in addition to charging for the commitments made at Eco-92, but specifically on the need to put Agenda 21 into practice (as mentioned, a document comprising 2,500 recommendations to achieve sustainable development). Unfortunately, the results of that Conference were not very significant. The countries considered developed did not cancel the debts of the poorest nations, as well as the member countries of OPEC (Organization of Petroleum Exporting Countries), together with the United States, did not sign the agreement that provided for the use of 10% of renewable energy sources (wind, solar, etc).

In 2012, once again in the city of Rio de Janeiro, the fourth climate conference was held. The objective of the Conference this time was to renew the political commitment to sustainable development through the assessment of progress and gaps in the implementation of the decisions

adopted by the main summits on the subject and the treatment of new and emerging themes. Two main themes were discussed at the Conference: The green economy in the context of sustainable development and poverty eradication; and the institutional framework for sustainable development.

Given all of this, it can be challenging to assess the effectiveness of the climate conferences and their genuine impact on how the global agenda is implemented. According to Underdal (1992), the ability to solve a problem, rather than the level of cooperation, determines efficacy. Furthermore, this can be seen at Rio 92, which had the participation and commitment of multiple countries but provided far less than was expected in practice.

We shall define a successful regime as one that has the ability to solve the problem at hand, bringing about changes in political conduct aligned with the agreement's goals, and whose outcomes can be compared to some benchmark. According to Zürn (1998), analyzing the effectiveness of regimes is a very interesting field since it has the capacity to demonstrate that regimes matter. Skjaerseth and Wettestad (2002), however, point out that, regardless of the many approaches to conceiving and measuring regime success, two problems must be addressed: (i) How can we quantify the regime's achievements? (ii) How can we tie these achievements to some benchmark or criterion of what is genuinely possible?

The focus, according to Goldstein, J., et al. (1993), should be on the observable political implications of institutions rather than the environmental impact itself. Steiner (2011) emphasizes the significance of the types of data to be considered in environmental policy research: pure biological indicators, visible political implications, or a combination of both? However, until there was a greater interest in the topic, environmental regime research went through two phases (HELM; SPRINZ, 2000): the first one was described by the investigation of the favourable condition for the emergence of regimes to manage or resolve global environmental problems and related conflict, and the second was described by the study of regime implementation and enforcement.

From there, Underdal (1992) introduces three structuring ideas. First and foremost, the object must be clearly described rather than just listed. Will the costs of creating and maintaining the agreement be considered as well? Will success be determined exclusively by net benefits or by a broader definition of success? Will institutional capacity and political energy be taken into account? What stage is the regime in, and what can be assessed at this point?

Such questions are presented to bring to light clearer and more concise ways of understanding how it is possible to see in a more practical way if the discussions, agreements and conferences themselves had an impact on the way decisions are made today. Thus, some of these questions will be answered during this research while analysing and showing the work at the Trondheim Kommune.

## **2.4 Millennium Development Goals (MDGs)**

Throughout the 1990s, the debates between those who supported the mainstream models of development and environmentalists grew exponentially. Despite all the success observed in defining an agenda for sustainable development, it is possible to see that the Rio Conference, in 1992, failed to reconcile the different demands of industrialized and developing countries, as well as failed to bring about the types of changes that had been demanded since the Brundtland Report. After Rio92, "sustainable development" became one of the most used themes in the international system, being loaded with a number of different agendas. The process of implementing the idea of sustainable development throughout the 1990s was extremely slow and bureaucratic (Adams, 2009).

With this, with this desire to put into practice in a more effective way everything that was being debated until then and with the turn of the millennium, the creation of the Millennium Development Goals can be observed. This initiative sought to discuss and solve problems in different areas. According to the UN (2015), the MDGs or Millennium Development Goals had diverse objectives, ranging from halving extreme poverty rates to halting the spread of HIV/AIDS and providing universal primary education. Such goals had an operating time ranging from 2000 to 2015. Such goals formed a plan agreed by all countries in the world and beyond the main development institutions in the world. They joined forces to meet the needs of the world's poorest. The UN sought to work not only with governments but also with civil society and other partners.

Even though it was something innovative and courageous, as such an active initiative on a global scale had not been seen until then, the MDGs generated much criticism, especially from countries considered to be developing, because such goals excluded developed countries from responsibility, in addition to lacking others points considered important, such as economic development.

Figure 2 – Millennial Development Goals



Source: United Nations (2000)

## 2.5 Sustainable Development Goals

With the end of the MDGs in 2015, the SDGs come into force in the same year, which are, according to the UNDP, goals that seek actions to end poverty and protect the planet, seeking to guarantee by 2030 that all people can enjoy peace and prosperity, these goals were adopted by UN member countries in 2015 and have a global character. Several expertises are called upon to integrate activities such as creativity, know-how, and the use of various technologies, in addition to the allocation of financial resources from the whole society in its most diverse contexts (UNDP, 2022).

The SDGs are broader and more complex than their predecessor, this time integrating and dividing responsibilities for all countries in the world, whether developed or developing. Such goals include points that permeate several areas of human and environmental life, and their implementation is sought by various bodies and actors, whether state or non-state, governmental, NGOs and companies. In this scenario, it is possible to observe that the construction Networking is a fundamental factor in our society today, as it allows the exchange of information, capital and people between different institutions, thus facilitating the implementation of the goals. Networking is a fundamental factor in our society today, as it allows the exchange of information, capital and people between different institutions, thus facilitating the implementation of the goals.



Figure 3 - Sustainable Development Goals



Source: UNDP, 2015

The goals are divided into 17, with 169 targets and 231 unique indicators and reflect a reality closer to what was intended with the MDGs. The SDGs are considered more inclusive and share responsibilities with both developed and developing countries. As a result, it is possible that the SDGs have become the basis of public policies carried out by countries and cities around the world, in addition to being used by companies and NGOs, giving more credibility to the bodies that base their activities on the SDGs.

Because of this, it is possible to observe the formation of partnerships with the objective of implementing the SDGs and following the UN's suggested targets. Moreover, together with that, it is possible to observe the partnership formed by the UN and the Trondheim Kommune (one of the points worked in the research), showing the focus of this partnership and why networking and sharing of expertise end up being a point of great relevance when talking about the implementation of the SDGs.

## 2.6 How does Norway face the SDGs?

The Norwegian relationship with the SDGs is very peculiar. In general, Norway has been at the forefront with regard to the implementation of the Goals. Both at the national and local levels

(municipalities), it is possible to observe different activities and engagement of different sectors of society with regard to the pursuit of implementing the SDGs. According to the UN, based on the SDG Index, Norway's performance for goals 1, 5, 7, 10 and 17, in particular, is considered high.

However, even in view of the advances observed over time, it is possible to see that there are still challenges and difficulties in achieving all the proposed goals. According to the UN, the main challenges to achieve the SDGs are mostly related to the unsustainable consumption patterns that are observed in the country, in addition to the fact that there are no considerable changes in greenhouse gas emissions. Other problems such as gender violence and disparities in the labour market still continue (even if they are smaller than in other countries) and show that inequalities persist over time (UN, 2022).

In view of this, it is possible to observe that the local works for the implementation and maintenance of the SDGs end up gaining great relevance, and as a focus of study, this research will go deeper into the activities carried out by Trondheim Kommune, where the work developed was observed and the way that the city is on track to reach the goals by 2030, and be better present at the point 4. Therefore, to better understand how this research was done, I will try to show in the methodology the paths chosen to collect and interpret the information collected over time.

## **Chapter three**

### **3. Analytical Framework**

In the previous session, it was possible to observe a broader view not only of the debates and construction of the idea of sustainable development but also to understand how the global agenda moves in the midst of an increasingly globalized world.

Nevertheless, often, as these are debates at global levels, understanding how these debates are translated at local levels, and adapting to local realities, can seem complicated. With this, perspectives brought by the SDGs make a localized implementation possible since, with the subgoals and indicators, it is possible to change the scope of observation and application of these objectives.

With this, it is also important to bring and analyze this topic through a "top down" perspective, thus making it possible to translate the desires and projects thought of at broader levels (often at global levels) in a more specific and adapted way to the local reality. With this, this research sought to observe and analyze how the Sustainable Development Goals are being implemented, in addition to observing the various measures and approaches adopted by Trondheim Kommune that reflect the local situation of the city, as a result of the wishes of the UN and the Norwegian government, in addition to also analyzing in a more general way how Norway is doing with this theme and how it ends up influencing the city of Trondheim.

Therefore, in the next section, it will seek to methodologically analyze how this process of choosing the theme and observation was made and how it was possible to better understand the different phases of the search for the implementation of SDGs in the city of Trondheim and the possible challenges to achieve the goals planned for 2030.

#### **3.1 Case of study**

Talking about the Environment, by itself, brings a breadth to the analysis of the theme. Therefore, it is necessary to make a deeper cut to the proposed research theme. Therefore, before

addressing the methods to be used for research, I would like to explain the reason for choosing this topic a bit deeper.

As mentioned, the idea for this case study came during my internship at the Center for Sustainability in the city of Trondheim in the autumn of 2021. Working at the Center, I was able to get in touch with several initiatives that aim to build a more sustainable city and are more aligned with global sustainability agendas. I saw in this research an opportunity to present not only my perspective but also to better understand the strategies used not only by the Sustainability Center but also by Trondheim Kommune, in addition to obtaining local and national data to support that.

With that in mind, it is possible to see that many cities around the world are seeking to implement the SDGs and be more sustainable - in addition to seeking to be part of the transformations adopted by the global agendas – but, at the same time that, it is possible to see that many others do not debate such themes and there is also a lack of participation in the integration with these global agendas, making these cities and places often being left behind of the changes that are taking place in the global scenario (a result of an increasingly globalized world).

Therefore, in order to allow a better understanding of the applicability of the methods and activities used by Kommune, I thought of this observational approach to the activities carried out by the City and the Center, in addition to the observation of data available over the last few years. My experience carried out at the Sustainability Center in the city of Trondheim gave me the opportunity to work looking at several sectors and scenarios. Nowadays, it is impossible to talk about development without talking about sustainability. The practices carried out in the political, economic and social fields include the need to discuss sustainability, and in the activities carried out at the Center, it was possible to observe these aspects.

I chose the Center for Sustainability in Trondheim to do my internship because, so far, it is the only Geneva UN Charter Centre of Excellence in Norway, and with this experience, I saw the opportunity to analyze how the city of Trondheim is doing so far in the implementation of the SDGs and what are the challenges for 2030 (deadline for the implementation of the Goals), so with that this research can serve as a basis for future work to be developed not only in the Norwegian cities but also in other cities around the world.

### **3.2 Methodology**

The methodology chosen to develop this research was the qualitative method. Initially, the analysis was carried out through a bibliographic review of existing texts that address the themes previously presented around sustainable development, sustainability and globalization. In a second moment, I also used my participation in the Sustainability Center located in Trondheim as an observational participation in loco because I believe that it is also important to build and observe these types of perspectives of an analysis regarding the approach chosen by Kommune to not only better implement the SDGs, but also build a culture of sustainability in the city. In addition to that, I explored the existing data regarding the measurement of SDGs not only in Trondheim but also in Norway as a whole.

According to Winchester and Rofe in Hay (2016), qualitative research is focused on elucidating and understanding the different environments and experiences that make up human life, using research as a way of defining the interpretation of a question to be analyzed.

So as said before, at first, the construction of this work was based on the use of textual methods and the analysis that carried out mainly through a bibliographic review, in addition to the study and analysis of official texts and reports related to the work made by the UN and Trondheim Kommune regarding the SDGs and sustainability, all of that was made in order to obtain such theoretical material about the topic. Therefore, the first step was to structure and analyze the work that the Kommune is doing so far, starting from the point of view of the Sustainability Center, making an observation regarding the insertion of the city of Trondheim in the changing society towards a more sustainable environment.

Regarding the observational part, according to Winchester and Rofe, "landscape" can be understood as a way of intertwining social meaning with its expression made through the physical environment, with the "physical landscape" being a way of expressing and revealing social meanings beyond their intentions. With this, by analyzing the environment I was part of, it was possible to better understand the paths followed so far by the city of Trondheim and the possible challenges until 2030.

Even being part of the environment that I sought to analyze and knowing that there is not a totally detached observation of the place, I tried to look at this environment with a scientific look, seeking impartiality. However, it is also necessary to understand that "we understand as 'political' the space of action of man, where he forms himself and shapes the objective circumstances that surround him" (Demo, 1999, p.57, *self-translation*). With this, it is possible to see that the search

for something a hundred per cent neutral and impartial would not be possible since immersed in the ideals that surround us, we tend to shape the space in which we operate, distancing ourselves from impartiality but, as a researcher, I sought to make a clean analysis based on what was observed.

Pawson and DeLyser in Hay (2016) show that qualitative research can be used in a way to direct or guide various topics and that it cannot be summarized in a "quick" way, either in tables or numbers, as it requires presentation and understanding in a detailed way of the point to be addressed, since qualitative research allows interaction with different realities, so, given the theme proposed here, qualitative research comes to add value in the way that the SDGs are applied, since such Goals aim to transform the human and environmental life, so, in addition to data, it is also important to understand the impacts they cause on people's lives.

### **3.3 Data and information collection**

Initially, to better explain and understand the process of designing and implementing the Sustainability Center and the sustainable projects in the city of Trondheim, I started my research process on the online pages of UNECE (an organization linked to the UN) and the Kommune of Trondheim. Such a process was necessary to understand how the institutions place themselves in the midst of this partnership, in addition to being possible to understand the objectives of the respective institutions.

To measure the execution of the SDGs, data already available on official platforms were used, whether linked to Trondheim Kommune, the Norwegian government, European organizations or the UN itself. Most of these organizations have several official reports that serve to analyze sustainability as a whole in Norway and in Trondheim. With this, having access to this data and information, it was possible to have a perspective of how the city of Trondheim is moving towards the implementation of the Goals. However, the data were used to give a support to the analysis carried out on the spot, based on an ethnographic approach.

### **3.4 The idea of place**

The idea of analyzing a "place" starts from the principle of seeking an empirical understanding, thus making it possible to bring a perspective focused on the perception and experience acquired through the relationship of "place". Madge and Johnson in Hay (2016) show that in order to obtain a better understanding of the difficulties and challenges of a specific community or place, a certain level of engagement (with different factors such as experience, history, language adopted in the place and even with possible forms of conflict) it is necessary. With this, using the experience gained at the Center for Sustainability, I believe it was possible for me to build an analytical framework that goes beyond simple data analysis, but allowed me the construction of a direct engagement with the reality that was being proposed in such a location, thus diversifying the understanding gained through typically observed "mainstream" power constructions.

In this case, the idea of "power" is a recurring topic studied in social and geographic studies. Understanding how power relations occur is also understanding how different social groups and communities behave with each other and how they can be part of a community. Besides, it is also necessary to understand that the idea of power has been changing throughout time. However, before going deeper into the concept of power, I believe that it is also important to address the concept of place (as approached before), since, as Anderson (2015) puts it, a place is where people, cultures, communities, etc., plant and develop their roots and start to have a direct connection with each other, and when such characteristics are not found, people can see themselves as "displaced", therefore, according to Anderson "Places then are crucial for understanding who we are and where we fit into culture and geography of our lives" (Anderson, 2015, p. 51), and that is why place takes a big part on the research.

Therefore, we also can identify that the place is what, at times, makes sense of human existence or behaviour, whether from certain groups or even in an individual sense, so it is possible to see that the place serves not only to connect people and groups of people geographically but also socially. For that reason, it is possible to see throughout history that a place is something that defines the behaviour and characteristics of people and social groups and, as a consequence, the concept of power may be intrinsically linked to the relationship that exists with the place. So, "taking and making place is therefore a political and cultural action. It involves and produces relations of power between different cultural groups in different areas" (Anderson, 2015, p. 73).

With this, by including these perspectives, I seek to exemplify the importance and need to better understand the places beyond the mere analysis of data (as previously mentioned), but also seeking to understand and translate what these data and information show us and how this can be included in the most diverse existing realities.

Finally, when having an understanding of place and being an insider in this environment, it is important to understand that the dimension of analysis can change from place to place, especially when taking into account the SDGs, since each place will have its own way of reading and interpret the applicability of the Goals. For example, a city in the interior of Brazil may not have the same interpretation regarding Goals and indicators compared to a city in the interior of Mozambique or if compared to the city of Trondheim. Thus, it is possible to understand that the place where the Goals are being applied are influenced by them and vice versa. Therefore, when looking at how the city of Trondheim is doing in applying the Goals, it is essential to keep in mind that the Norwegian and local reality influence this applicability (for better or for worse), so it is necessary to observe this context.

Thus, when we observe the diversification in decision-making, we can see that power relations are also transformed. When the UN brings to the local level the possibility for each individual to contribute to the environment around them, the idea of power is transformed because what used to happen in an imposing way today happens in a participatory way. Furthermore, this is precisely the objective of the SDGs, allowing each local entity to apply the Goals based on their realities, in addition to allowing these actors to contribute to global decision-making, thus having a top-down and bottom-up relationship.

### **3.5 Harm and Critical Reflexivity**

One point that I believe is important to mention and that I would like to address in greater detail here is the "critical reflexivity" and the need for it in its approach, in addition to the "damage" when conducting research and studies as social scientists.

As social scientists, we must keep in mind the social role we will play and how our research and findings may end up influencing the location, we will be studying as well as the individual who will be involved in our research because we may raise some issues that are both irritating and cause psychological damage to those involved (Dowling in Hay, 2016, p.32; Rose, 1997), so it is



necessary to be prepared and aware of the adversities that may appear along the way since we also we will be involved with people.

So, with that Dowling in Hay (2016) also shows that Reflexivity is being self-conscious about the surroundings and the process of research itself, when "we must constantly consider the ethical aspects of our activities" (Dowling in Hay, 2016, p.34), which is why the entire research method is dynamic and presents us with social interactions that are constant and require attention.

As a result, it is critical for the researcher to be constantly aware of what is going on around him and to ask questions such as "What is going on?" What social relations are being enacted / Do they have an impact on the data?" (Hay, 2016, p. 34). With all of this, we can be more connected and aware of the issues that may surround our research object (Moser, 2008), so we need to be more familiarized and paying enough attention to ethics while doing our research and when we are in the field researching. So, because of this approach, it is important to emphasize that part of the analysis made in this research is the result of a personal and individual observation of the reality, but it might not be agreed upon by all.

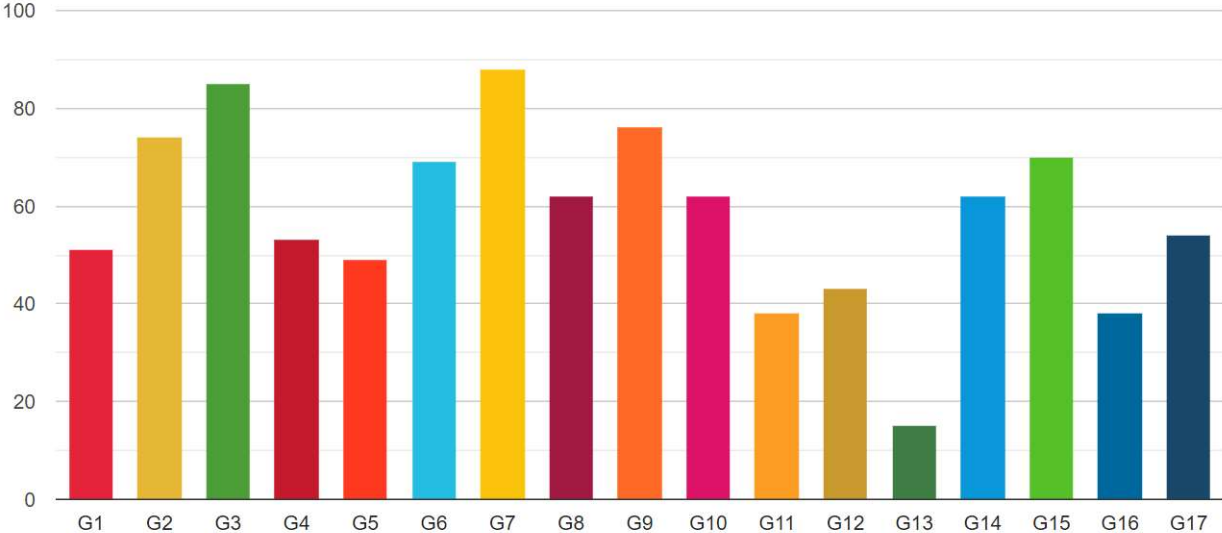
### **3.6 Difficulties and challenges in the analysis**

As previously presented, the SDGs were implemented in 2015, replacing the MDGs, and have an execution period until 2030. Because of this, many data and information that help to measure and better understand the paths followed so far are either not available or are incomplete, making a deeper and more detailed analysis more difficult to achieve.

However, with the current information and with the analysis not only of data but also of activities and initiatives, it is possible to have a dimension of the process developed until then. Understanding how effective an initiative can be without specific data can be challenging but not impossible when analyzing such perspectives. As seen in the figure below, it is possible to observe that the problems related to data collection occur all over the world, and the SDGs are not measured homogeneously thus, there are disparities between them, making a deeper and more detailed analysis difficult, thus preventing the application of policies that impact people's lives since with the lack of data, it becomes more difficult to target more specific problems and social groups in need. Moreover, during the research, even though Norway has more data available compared to other countries, it was possible to observe that there are still difficulties in relation to specific

information for various Goals, which is represented in the figure below, in which countries all over the world face difficulties both in collecting and providing information regarding the development of the respective goals.

Figure 4 - Proportion of countries or areas with available data, by Goal (percentage)



Source: The Sustainable Development Goals Report 2021

With this in mind, it is also possible to understand the importance of observation because even if there is often no concrete data (extricable the existence of numbers), the existence of activities and projects can be used as a gauge (even if not 100% accurate), as they allow a dimension to be attributed to the efforts made to implement and maintain the execution of the SDGs. So we go back to the definition of place and its importance, and according to Gardner and Craine in Hay (2016), the visualization is a way of interpreting, which can influence the ways we see our surroundings, and also in a way to produce knowledge.

### 3.7 Covid-19

It is essential to keep in mind that due to the recent Covid pandemic, the collection of data regarding the SDGs was influenced by the pandemic. Many countries face difficulties in collecting data, as many others have experienced a worsening in their indicators. Due to this, it is also important to keep in mind that an eventual worsening in the measurement indexes of the SDGs does not necessarily represent a worsening in the applicability of the Goals, but several other

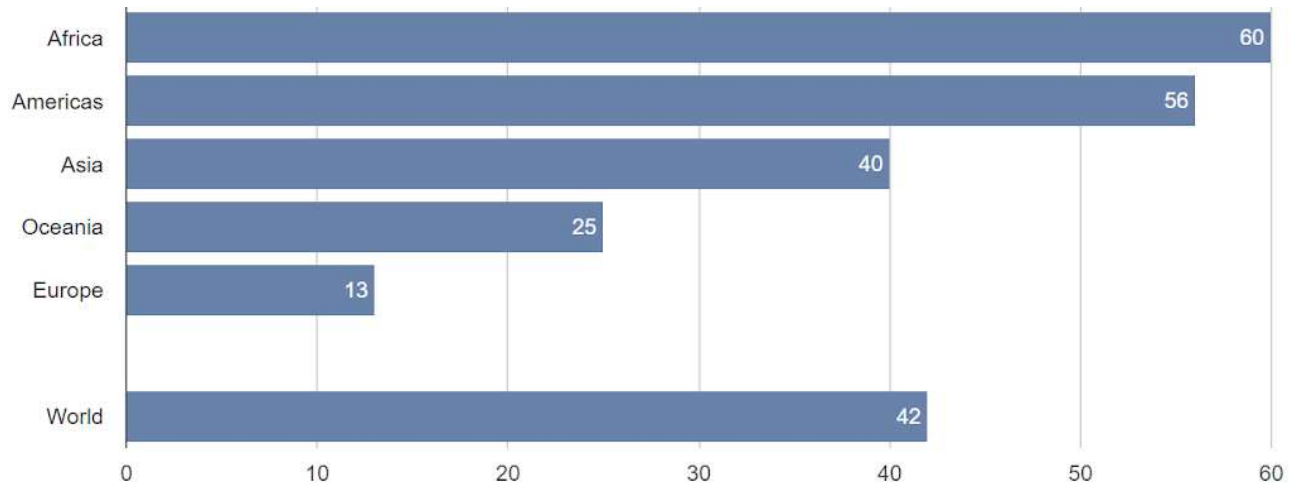
factors were brought about by the pandemic and need to be taken into account. Therefore, it is essential to remember that the data presented here needs to be considered in the long term and its possible changes over time that may or may not be influenced by the recent Covid 19 pandemic.

As presented by The Sustainable Development Goals Report (2021), it is possible to observe, since the start of the COVID-19 pandemic, that business leaders and policymakers have had to make important time-sensitive decisions. In this case, many of these decisions were life-or-death consequences. Moreover, because of that, primary data to guide this decision-making in the fields like health, society, and the economy are often lacking. What can be seen from the pandemic is that it has brought to the forefront the critical importance of data collection. UNSTATS also says that the pandemic has also accelerated the transformation not only of data but also statistical systems and how the public understands and uses that kind of information.

It is possible to observe that during the pandemic, because of lockdown measures, several countries also struggled with interruptions in data collection and implementation of sensitive activities and projects regarding sustainable development. Also, face-to-face survey interviews were stopped often, and a reduction in statistical services was seen. Furthermore, data production was also more severely affected in places where the infrastructure of data and information did not permit the use of alternative data collection tools (such as online or telephone-based surveys) (UN, 2021).

The OECD (2016) also shows that it is crucial to ensure that all countries have the capacity to track their progress to achieve the SDGs and ensure that it is critical for the overall success of the 2030 Agenda. According to the OECD, one challenge that the OECD countries are still facing is in addressing the many blind spots in their understanding of how far they have progressed so far (in terms of the SDGs) and how the route to 2030 will look in the future. In conclusion, data gaps have an impact on how it is possible to evaluate progress toward the 2030 Agenda, and if not well understood, they can lead to skewed findings.

Figure 5 - Proportion of countries that have postponed their censuses scheduled for 2020 or 2021



Source: The Sustainable Development Goals Report 2021

I believe it is important to bring this information about a more general view of data collection, because a part of this research has some criticisms about the non-provision of information (data) by some countries and cities, however, it is also necessary to understand that there are external factors that can hinder such supply, and in the figure above it is possible to have a dimension of this around the world.

### 3.8 Analysis of all Goals (SDGs)

As mentioned in the point 2.5 there are 17 goals, 169 targets and 231 unique indicators that serve to better measure and analyze the applicability of the SDGs, in view of this, it becomes difficult to analyze all of them since, in general, many of the data found only reflect the national reality, with no precise data related to cities or local regions, so it is also difficult to have a precise and direct analysis regarding the development and evolution of the city of Trondheim in all of the Goals. However, some the Goals will be addressed in the analysis, more specifically 11 and 17, so that one can compare these objectives with the activities and initiatives carried out by Trondheim.

### 3.9 The approach of the Trondheim Kommune

A secondary method of analysis that was used was the observation and analysis of existing plans by Trondheim Kommune (Municipal Plans). Due to time and language barriers, it was not possible to make a detailed analysis of all existing plans in the city. However, I sought to observe some, specifically those aimed at sustainability and sustainable development, in order to better understand how the city sees its role in the quest for sustainability and how such plans can be seen in practice. With that, added to my experience at the Sustainability Center, it was also possible to see other fronts of action adopted by Kommune.

### **3.10 Use of data**

As presented earlier, data collection can be influenced by several factors. Cities do not always provide enough information; other times, institutions have difficulties in gathering such information or even making it available can be an obstacle. Therefore, in order to obtain reliable data, I sought to analyze some of the data through tools available from the UN and OECD. These tools give a broader sense of how cities and regions are performing in the implementation of the Goals, and thus it is possible to understand the paths that are being followed and the challenges for the future. Each tool has its own methodologies, which will be better described later.

The main tools used for comparison and better understanding were the SDG Index, a tool resulting from the Sustainable Development Report (including the SDG Index & Dashboards) that is a complement to the official SDG indicators and voluntary country-led review processes, which gathers information from several institutions such as World Bank, WHO, ILO, and other organizations, including research centres and non-governmental organizations

The second tool used is the OECD tool, which measures the distance towards the SDGs in more than 600 regions and 600 cities of OECD (Norway included) and partner countries.

## Chapter four

### 4. Analysis and Presentation of the theme

With all that has been presented so far, I would like to move to the understanding of how the global agendas can be translated into the local realities and which initiatives and projects can reflect that, where it becomes necessary to address the “top-down and bottom-up” scope when addressing sustainable development and sustainability in these local realities.

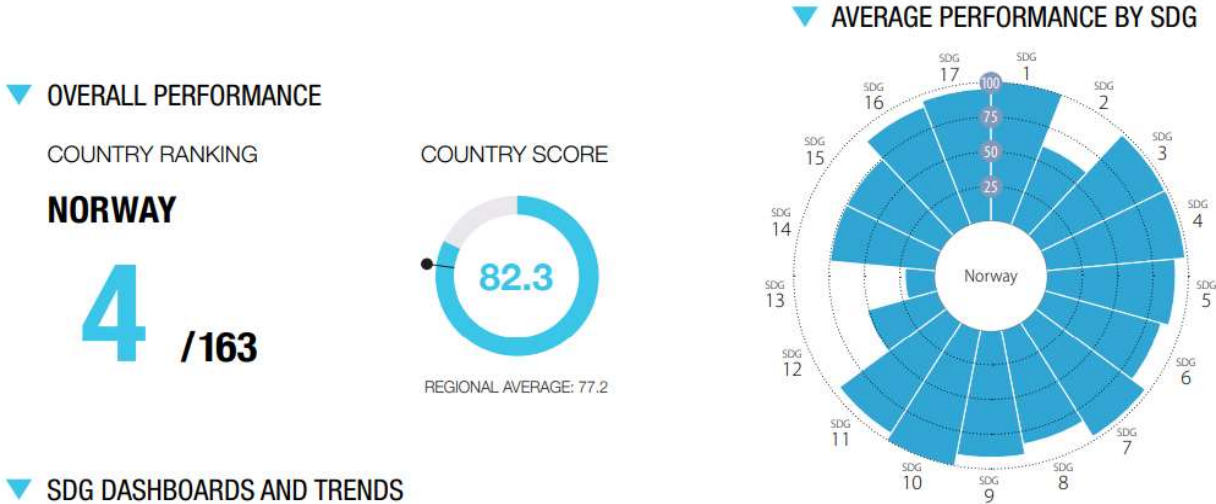
Norway plays an important role when talking about these topics since it is a country that explores oil and that had high rates of deforestation, plus a not-so-positive spillover score, compared to its neighbour countries and most of the countries around the world.

All these perspectives and dialogues around sustainability have been growing over the years because as a change in the lifestyle of many people, institutions and countries is sought - that is, transformation in the system we are part of - more and more people join efforts so that these commitments and goals are achieved. The idea of sustainability seeks to achieve a reduction, for example, in excess consumption at the expense of rebuilding a more sustainable environment, as well as seeking to transform the consumption model that we are used to, for example, with the reduction or even the elimination of the use of non-renewable materials that pollute and degrade the environment. Among the causes can be listed problems such as deforestation, industrial and urban growth, and mega constructions such as dams, which end up causing more significant environmental degradation, which can affect both environmental conservation and the lifestyle we are used to living.

As observable in figures 4 and 5, in general, Norway has been doing well in achieving the goals of the SDGs. However, it is still possible to observe significant challenges in achieving these goals, especially in the environmental area. According to the OECD report (2022) on Norway, nowadays, there are some environmental issues under discussion in the country, including climate change, as protection of the ozone layer, biodiversity, acidification, eutrophication, toxic contamination and hazardous waste. Still, according to the OECD report, Norway faces “significant” challenges regarding to achieve some of the SDGs, including climate action (one of the significant challenges), sustainable consumption patterns and biodiversity protection. Moreover, as we can observe, most of these remaining challenges are related to increased

environmental pressures. Still, in figure 4, the overall performance of Norway is good, but with the challenges presented above. In the same figure, on the left, it is observable how the country is doing regarding the goal (as close to the perimeter, the better).

Figure 6 - Norwegian Overall Performance at the SDGs



Source: Sustainable Development Report 2022

Also, in figure 5, it is possible to have an even more detailed view of the goals achieved, the challenges that remain and the challenges that may prevent Norway from achieving 100% of the goals, in addition to being able to observe whether or not there is improvement in such goals. Such a view is essential because it is possible to start a more local view of the subject when dealing with Norway. After all, the general observation does not always reflect the local reality, whether for good or for bad and therefore, in the face of this In this scenario, it is still possible to make a more specific cut regarding the position of the city of Trondheim when approaching the implementation of SDGs.

Figure 7 - SDG Dashboards and Trends for Norway



Source: Sustainable Development Report 2022

#### 4.1 Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable

It is important to remember that the SDGs are interconnected, and if one goal is not addressed properly, it can make it difficult to achieve the other goals. Therefore, to exemplify the paths adopted by the city of Trondheim, one goal proves to be important, goal number 11. With rapid urbanization resulting in an increasing number of slum dwellers, inadequate and overburdened infrastructure and services (such as garbage collection and water and sanitation systems, as well as roads and transport in general), it is also possible to see the worsening of air pollution and unplanned urban sprawl. All this makes it more difficult to achieve other goals in the economic, environmental and social areas.

It is now possible to observe that more than half of the world's population lives in urban areas. By 2050 this number is expected to have risen to around 6.5 billion people, which would be equivalent to two-thirds of humanity (UN, 2020). What is expected from the implementation of sustainable development cannot be achieved without a significant transformation in the way cities are built and how we value our urban spaces. Extreme poverty is a factor that is often concentrated in urban spaces, and both national and municipal governments play a key role in seeking to accommodate the inevitable increase in population in these urban areas. Therefore, aiming to make



cities safer and more sustainable is fundamental and thus means ensuring access to safe and affordable housing.

Along with these as central points, there is an investment in public transport, the creation of green public spaces and the improvement of urban planning and management in a participatory and inclusive way. Cities and metropolitan areas represent economic growth, in which they contribute around 60% of global GDP. However, they also account for around 70% of global carbon emissions and over 60% of available resource use (UN, 2022).

Thus, goal 11 plays a fundamental role in this debate and is one of the central goals worked on in the city of Trondheim. This goal seeks to make cities inclusive, safe, resilient and sustainable, reducing inequality and levels of urban energy consumption and pollution. Because of this, it is important to observe how the city is facing these transformations. Because of that, achieving SDG 11 targets lays the groundwork for achieving targets in many of the other SDG goals (UN, 2015).

#### **4.2 Goal 17 - Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development**

SDG 17 is fundamental to the realization of the 2030 Agenda for Sustainable Development. This objective establishes the means by which both countries and organizations around the world can meet the proposed goals and thus build a sustainable future for all. SDG 17 thus intends to strengthen the Global Partnership for Sustainable Development, based on the idea that the SDGs can only be achieved if there is a solid world union and cooperation. Such union and partnerships between the different agents (whether governments, the private sector, civil society, academia, etc.) make it possible to mobilize and exchange knowledge, technical capacity, technology and resources in general (UN, 2022).

Partnership for development is important, and each country should regularly review progress to comment on the progress made, thus being the primary responsibility of national governments for the implementation of the SDGs, for example, the Norwegian Government has committed to providing 1% of GNI as a way of official development assistance, in addition to seeking to meet the UN target by providing a minimum of 0.20% of its GNI as assistance to Least Developed Countries. Faced with the practical challenges, whether geographical distance, cultural differences, or different technical and technological capabilities, the successful implementation of the SDGs will depend on the discovery of new and innovative approaches that seek to mobilize

both public and private resources. Thus securing greater access to untapped domestic resources and debt relief will increase ownership and accountability and reduce dependence on aid and volatile international markets. Financial transparency, good management of natural resources and increased tax revenue are key questions. According to the High-level Political Forum (Norway) (HLPF), the country has also committed to supporting various sectors such as financial, technological, Capacity building, Trade, Policy coherence, Data, monitoring and accountability (HLPF Report, 2016). Also, according to the Forum, Norway has committed to providing funding for public-private partnerships, as well as fighting illicit financial flows, in addition to promoting country-by-country reporting for multilateral companies.

Capacity development is a fundamental aspect of change processes. It has been an integral part of Norwegian development cooperation for decades. It is possible that Norway supports UN capacity-building initiatives by providing core funding in addition to targeted support to individual organizations, as well as through interagency funding and support to multilateral development banks in this area (HLPF Report, 2016).

The scope of the SDGs is comprehensive and requires the participation of several groups, and no state, organization or institution can pursue the 2030 Agenda in isolation. Norway also supports funding modalities that promote collaboration and partnership between UN agencies as part of Norway's aim to encourage the building of such partnerships. Therefore, below, it will be possible to observe how, influenced and guided by this national policy, the city of Trondheim has been helping to build a network of partnerships and implement projects that directly affect the reach of the SDGs.

According to the Voluntary National Review for Norway, the country faces difficulties in balancing the social, economic, and environmental dimensions of sustainable development, including the distinctions between national and international aspects, as well as current and future generations. Policy coherence procedures have been developed, but difficult decisions must still be made. Still, according to the Report, Norway has achieved a high level of trust among citizens, organizations and authorities. It has a strong voluntary sector, in addition to maintaining a high level of development assistance and reinforced programs to help developing countries to increase the mobilization of national resources. Such results present positive expectations regarding the construction of partnerships that help Norway to implement the SDGs internally and also help to reduce the country's spillover score, as it is crucial to maintain political participation and social

cohesion, as trust becomes essential for the success of a wide range of public policies that depend on behavioural responses from the public (Norwegian Ministry of Local Government and Modernization, 2021).

### **4.3 Trondheim**

Trondheim is known for its outstanding research and innovation, being a major technological centre in the Nordic countries today. The city is home to Norway's largest university (NTNU) and SINTEF, one of Northern Europe's largest independent research institutes. Numerous technological innovations serve as the foundation for spin-off businesses that thrive in the city's startup scene, being recognized by the Ministry of Local Administration and Modernization in 2019 as the most innovative city in Norway (UNECE, 2020).

Still, according to UNECE, Trondheim's political priorities are accelerating progress toward the SDGs and implementing the 2030 Agenda for Sustainable Development. Throughout the last decade, the municipality has set ambitious goals, developed and implemented a variety of projects and solutions, and formed partnerships with a focus on climate, transportation, and digitalization agendas. The city has made the SDGs a central part of local planning and programming, with the goal of reducing direct emissions of climate gases by 30 per cent by 2023 and 80 per cent by 2030 (UNECE, 2020) (Trondheim, 2017).

### **4.4 Environmental and climate plans**

Trondheim Kommune has a bold plan that showcases the municipality's local pursuit of energy and climate policies that aim to be in line with the Paris Agreement and UN sustainability goals. As mentioned, Trondheim is recognized as the technology capital of Norway, so there is a significant opportunity to take the lead in 'green change'. Several actions, such as those already mentioned above, aim to reduce emissions and aim to be implemented through collaboration between different actors, be they public, companies, organizations or civil society (Trondheim, 2021). The city has several objectives that guide projects to build a more sustainable society, including:

- To be a model and collaborative arena for creating green value and developing climate-friendly technologies and lifestyles;
- By 2023, reduce direct greenhouse gas emissions in Trondheim by 30% compared to 2009;
- By 2025, make the city robust enough to face future climate change;
- In 2030, maintain stationary energy consumption in construction at the same level as in 2013 (approx. 3.5 TWh);
- By 2030, reduce direct greenhouse gas emissions by 80% compared to 2009.

The main goals of the climate plan are to reduce direct greenhouse gas emissions in the city of Trondheim. In addition to this, the municipality of Trondheim has also decided to actively work to reduce its own climate footprint, among other things, by establishing environmental requirements for procurement. Therefore, in order to achieve these goals, adequate measures need to be taken. For that, the municipality seeks to increase the electrification of the car fleet, goods and transport of goods with the objective of zero-emission, in addition to replacing car trips with others travel modes. Physical constructions are also among the cities' goals, seeking zero-emission construction sites, in addition to carbon capture and storage of emissions from the incineration plant.

Because of this, the city sought to launch an environmental package that aims to stimulate and achieve the suggested goals and objectives. In addition, several initiatives are being developed that cover several areas and work in direct connection with the SDGs.

#### **4.5 Environment package**

Until 2029, the city of Trondheim has been implementing small and large measures intending to get as many people as possible to move around the city with a lower emission of polluting gases. For this, an environmental package was launched that seeks to build new roads, bridges, bike paths, sidewalks and streets. The idea is to reduce traffic in the city and neighbouring regions, associating the reduction of greenhouse gas emissions with the objective of a NET-Zero society. Half of the Environmental Package money went to road construction. The other half is split between public transport, cycling, traffic safety, noise protection and walking. Rising state

revenues mean that eco-friendly transport will receive a larger share of investments in the 2020-2030 period.

This measure is linked to objective 11 of having a more sustainable city because by making more people ride a bike, bus or walk, a better urban area is created for everyone. Furthermore, as the goals are interconnected, an improvement in goal 11 directly affects, for example, an impact on city dwellers' health (SDG 3, Target 3.9), as well as improved city resilience to natural and climate change-induced disasters. It is also related to SDG 6 (indicators 6.1, 6.2, and 6.5), SDG 12 (goal 12.4), and SDG 14. (target 14.3).

SDG 11 is also linked to SDG 13 on climate action since cities consume around 60–80 per cent of the world's energy and emit 75 per cent of their carbon emissions. An interconnected city helps to create, for example, a sustainable and cost-effective transportation networks that can help to reduce the carbon emissions (SDG 13), address low-income residents and other structural inequalities (SDG 10), and promote healthy lifestyles and well-being (SDG 3) (Trondheim, 2022).

#### **4.6 University City TRD3.0**

The idea of partnerships shows the importance of such an initiative when it comes to sharing information and expertise. SDG 17 seeks to "Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development" with this, the municipality of Trondheim is developing partnerships with several actors at multiple levels and, more recently, NTNU and the municipality signed a partnership agreement to jointly develop a University City. This project is a national pilot program that focuses on five main thematic areas:

Early childhood education and development;

- Health and wellness;
- Urban Development;
- Innovation;
- Smart cities.

Such a project is known as UniversityCity TRD3.0, with a duration of four years. The project builds on a long-standing partnership between the City of Trondheim and NTNU. It aims to take this partnership "a step further" towards a more holistic approach to education, research and innovation. The university city aspires to create a model of innovation and restructuring of the

public sector through research, innovation, education and participation in development projects of strategic importance to the public sector. Therefore, NTNU and the Municipality of Trondheim agreed to establish a national pilot project for "university city" during this period, in addition to proposing a future and permanent model for the continuation of the collaboration of the University City TRD3.0 seeking in the future a partnership permanent, a relationship between the municipality and NTNU, in addition to the search for the preparation of the bases for a national regulation on the use of the designation "university city", including funding mechanisms that will allow more municipalities and universities to meet the requirements and opportunities inherent to the status of "university city" (TRD3.0, 2022), (Trondheim, 2022).

With this, it is possible to observe that the ambition of TRD3.0 is to play a leading role at the national level in the development of public sector models for both innovation and sustainable development. These new approaches to city-university collaboration are being tested, and results are being documented, using technology and digitization tools as essential components of all development efforts. Interconnected through open standards and data service areas and research fields, aiming to create conditions for sharing and mutual learning.

Finally, the project experiences are intended to be shared with other municipalities, universities and national authorities in order to lay the foundations for a sustainable public sector through common standards, innovative, collaborative models and new services.

#### **4.7 Sustainable Center**

As presented earlier, the UN designated Trondheim as a great city for sustainable development in 2019. Several actions are carried out by the Centre in Trondheim, including supporting the work developed by the UN concerning evaluating various cities and reporting on innovative sustainable development at the local level in Norway. One of the strategies used is the analysis through KPIs<sup>4</sup> (Key Performance Indicators) that are managed and developed by the UN

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<sup>4</sup> "Key Performance Indicators (KPIs) are the critical (key) indicators of progress toward an intended result. KPIs provide a focus for strategic and operational improvement, create an analytical basis for decision making and help focus attention on what matters most. As Peter Drucker famously said, 'What gets measured gets done.'" (KPI, 2021)

under the support of U4SSC<sup>5</sup> (United for Smart Sustainable Cities). In all, about 50 cities in various regions of the world are making use of the KPIs since they can cover several areas, including universal access to the internet, energy distribution and the construction of more modern governments (U4SSC, 2021).

Another highlight is the continuity with regard to development as well as the testing of the "SDG City Transition Framework", which uses a knowledge-based approach in order to better structure sustainable development at both municipal and local levels. Promoting the exchange of "best" practices between cities and their partners as part of a National Network of Excellence in Smart Sustainable Development (Trondheim, 2021) is also part of the framework developed by the Centre. Another point that is also important to mention is the incentive for cooperation between partners on multiple levels, be it local, municipal, national or international, thus making it possible for the transfer of knowledge to strengthen the capacity to implement public policies that are in accordance with the goals sought by both the UN and Norway.

Today, the Sustainability Center has several partners, both in the public and private sectors. These partners develop roles and activities at different levels. During the internship, we were given the opportunity to act directly and indirectly with these partners (the activities will be better described later).

#### **4.8 Activities description**

Based on my experiences in the internship at the Sustainable Center in Trondheim, I will seek to show and connect with the activities I performed. Undoubtedly the Center is fully connected with the Globalization and Sustainable Development course. As it has been described throughout this research, the activities executed by the Kommune are related to the theme of sustainability. Since the Center is linked to Trondheim Kommune and the UN, several spectrums are observable from decision making as in the execution of the same.

Thus, sustainable development can be understood as a way to put into practice sustainability, whether of environmental, economic or social nature. I could undoubtedly observe this in the practices developed in the Sustainability Center. The activities permeate several sectors,

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<sup>5</sup> United for Smart Sustainable Cities (U4SSC) is a global smart sustainable city initiative which provides an international platform for information exchange, knowledge sharing and partnership building, with the aim of formulating strategic guidance to achieve the Sustainable Development Goals (U4SSC, 2021).

going beyond environmental issues or "good practices" that can often characterize a "greenwashing". Thus, for implementing these concepts presented above, the Sustainable Development Goals have a significant role in guiding the activities performed by the Center.

Activities linked to mobility, research, business practices and dissemination of the environmental agenda are part of some of the topics worked on by the Sustainability Center.

As discussed throughout this research, Trondheim has been addressing several initiatives that aim to implement the SDGs following the guidelines designed by the UN by the Norwegian government, and the Sustainability Center in Trondheim is one of the actors that supports a practical approach to implementing the SDGs, seeking to innovate, either through new energy and mobility systems or using the city and the region as a test case for sustainable projects (such as the Positive City Exchange, Smartby, University City, etc), thus attracting partners from the public and private sector. Moreover, as an intern at the Center, I was able to participate in one of the projects called SDG Clinic.

The SDG Clinic's objective is to bring sustainability-related topics to the city's companies that are rarely discussed or on the rise. In the first year, the topic covered was the Circular Economy<sup>6</sup>. In the second year, the topic worked on was Net Zero, a topic that has been gaining ground in debates on sustainability. Net-Zero generally can be understood as a search for neutrality in carbon emissions. This objective can be achieved through the balance in carbon dioxide emissions, either with its removal or elimination of society's emissions. Basically, for each molecule of CO<sub>2</sub> emitted, another molecule must be withdrawn. The purpose of this work with companies is to seek to present a solution for the respective business models of the companies, doing how they can adapt to the changing world and also be active agents of this change.

Another project that I could take part in was the construction of a database that aims to analyze and acquire data regarding the SDGs and their respective indicators in different sectors such as Strategic Priority, Development Sector, and Evaluation. It was possible to analyze the global indicators of the SDGs from a Norwegian perspective so that this work can be used to feed a database used by Trondheim Kommune (this work is in progress, so there is no conclusion yet). Along with the global indicators for the SDGs, the OECD and the national indicators (Norway) were also analyzed, in addition to the U4SSC indicators. One of the methods used to classify the

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<sup>6</sup> The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products as long as possible (Europe, 2021).



indicators was the taxonomy. It is a tool developed in commission by KS and aims to classify, evaluate and compare different sets of indicators. Applying the same taxonomy to all indicators helps clarify their focus and compare their uses and usability. The taxonomy development idea seeks emphasis to accommodate the relevant subnational perspectives and can be used in a way that makes it equally suitable for users in the international, national and local levels (Statistics Norway, 2021). The work developed around the Database serves for more technical work so that Kommune can translate your wishes more precisely and concretely at the time of decision making.

#### **4.9 Positive City exchange and Smartby**

According to the +CityxChange, in a broader sense, the development of innovative city strategies is directly linked to the UN Sustainable Development goals and targets. Big Data analytics derived from intelligent sensors and linked devices are already being used in cities worldwide. Using technological solutions to solve broader community challenges can assist governments in improving various urban operations and services by establishing intelligent and inclusive urban systems that minimize waste, costs, and environmental impacts. It is in line with the UN's Sustainable Development Goal 11 (Sustainable Cities and Communities), which focuses on "making cities and human settlements inclusive, safe, resilient, and sustainable" (UN, 2022). In this case, digital technology can also serve to support the successful implementation of other SDGs in a more direct or indirect way. In order to generate the correct atmosphere for sustainable economic development, it is critical to address not just direct technical solutions but also the interaction and integration between buildings, users, cities, and the more extensive energy system.

The Trondheim Kommune also shows that an entirely new energy system is now being developed in the city, allowing electricity, in this case, to be sold to nearby structures. Furthermore, in view of this initiative, it is possible to see that partnerships are being built in order to put into practice the planned solutions based on the SDGs, in which researchers from NTNU, the business community and the municipality have collaborated to build this system and energy solutions (Trondheim, 2022).

Trondheim Smartby is a collection of projects that aim to make Trondheim Municipality more sustainable by utilizing (smart) technology and (open) data (Trondheim, 2022). Technology provides us with new opportunities and a greater understanding of the world around us. When it

comes to developing a sustainable city and finding new solutions to societal challenges, both technology and the data it generates can assist us. Trondheim municipality works in a variety of areas to capitalize on the opportunities presented by large amounts of data, technology, and new solutions. Simultaneously, we still have a lot to learn about how this affects us and society.

Norway's smart city network has collaborated to develop a roadmap for smart and sustainable urban development. According to the report, "smart cities and local communities put residents at the centre and use new technology, innovative methods, collaboration, and co-creation to become more sustainable, attractive, productive, and adaptable." Smart and sustainable urban development is based on the United Nations' sustainability goals, and the roadmap prioritizes the environment and climate. Norwegian municipalities can make significant contributions in this area, where technology, business models, and forms of collaboration can accelerate the green shift and help us overcome climate challenges. In 2018, the EU selected Trondheim and Irish Limerick as European pioneering cities - lighthouse cities - to help develop and test smart, green energy solutions for the future - for Norway and for Europe. (Trondheim, 2022).

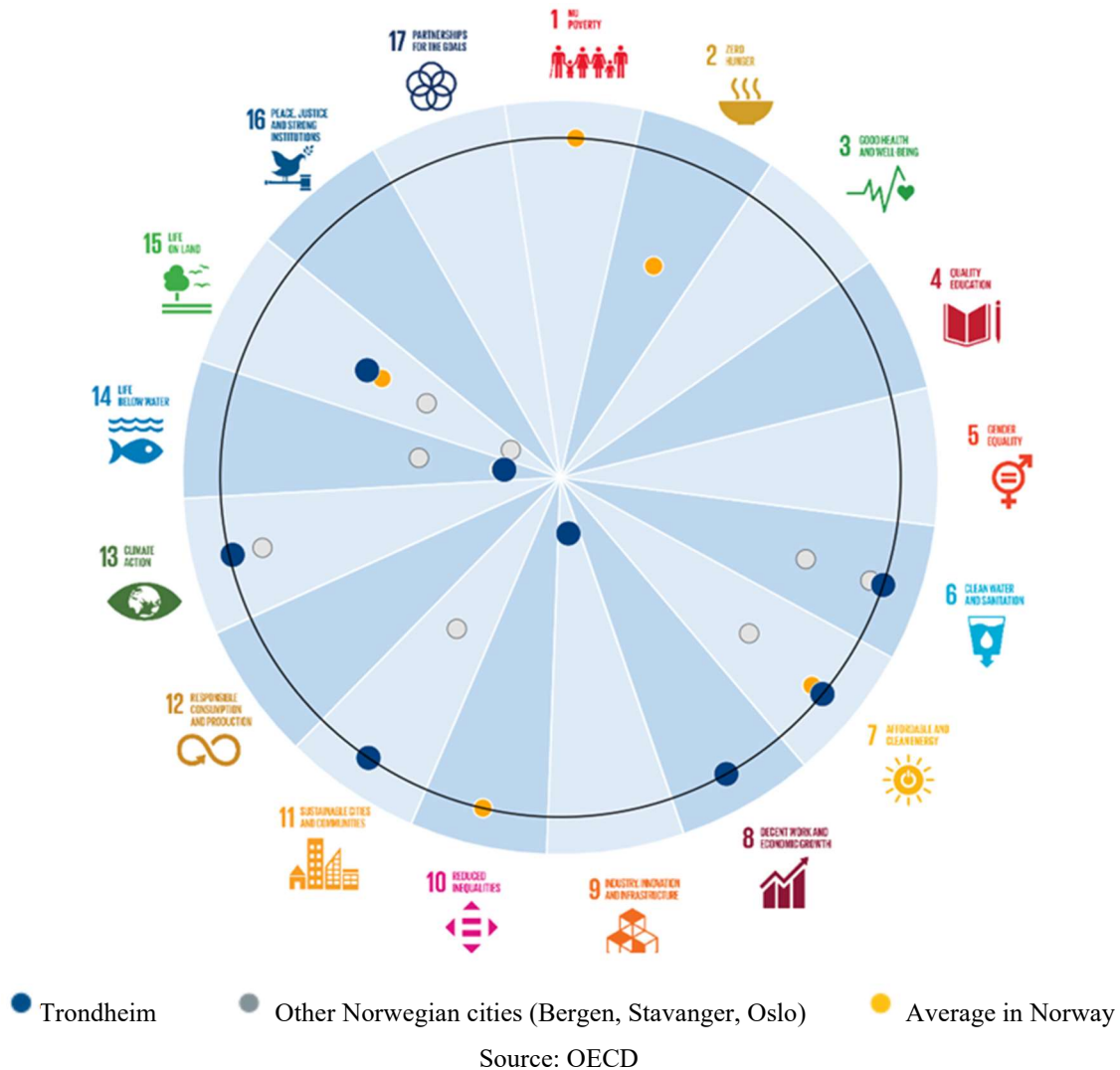
#### **4.10 Development of SDGs in Trondheim face other Norwegian cities**

As presented in the methodological part, obtaining data on the evolution of SDGs both in countries and cities can often be tricky. As the implementation of the goals is something that is happening in real-time, much information is still being unified and acquired. Therefore, it is important not only to observe the effectiveness of the implementation of the SDGs through the existing numbers but also through the activities and initiatives that help and facilitate such a proposal. This is where an important actor in Trondheim comes in as an agent in the construction and dissemination of sustainability, the Sustainability Center, which will be discussed further on.

Nevertheless, still looking at the development of Trondheim in the pursuit of achieving the SDGs, it is possible to see in figure 7 below how the city of Trondheim is ahead of other Norwegian cities and even with the Norwegian average in some goals. However, not all goals have accurate data on this, and there is no concrete data from many Norwegian cities, which makes a more in-depth analysis difficult. However, to better understand the paths taken by the city of Trondheim (or some of them), it is important to observe the practices and initiatives adopted by the

municipality since, in this way, it is also possible to see the impact that such activities can generate on the local environment.

Figure 8 - Performance of the biggest Norwegian cities on the SDGs



The city of Trondheim, in several reports, is taken as an example in the implementation of sustainable initiatives. According to the report by The United Nations Economic Commission for Europe (UNECE), the results showed that the strong economy of the city is grounded in the availability of and access to ICT infrastructure, innovative facilities, electricity supply for all, and rates very strong, which make significant contributions not only to the economic development but also the quality of life of Trondheim (UNECE, 2020).

The report also shows that it is also possible to see that the development priorities of the city are several supporting innovations, plus developing the public transport infrastructure and

improving the urban planning of the city as a whole. Moreover, it is also important to mention that a well-designed and efficient public transport system is the pillar of sustainable and smart urban development. The equal distribution of the benefits of urbanisation facilitates the reduction of spatial socio-economic inequalities. Nowadays, of all travels, only 12% are made by public transportation, because of that, the actions taken by the city to improve this share of travel are important since currently about half of all journeys made in the city are taken by private vehicles, and in 2019 Trondheim was recognised, by the Ministry of Local Government and Modernisation, as the most innovative city in Norway (UNECE, 2020).

All of this puts Trondheim at a great advantage when implementing the SDGs, and thus being able to be used as a model at strategic points regarding the implementation of the Goals. Such leadership results from intense investment not only in infrastructure but also in research, which allows for the construction of an innovative community. In my experience at the Sustainability Center in the city, I was able to have a greater perception of the strategies addressed and how such initiatives fit with the local reality, whether in the civil or business sector.

## Chapter 5

### 5. Discussion and Findings

As presented, both in the methodology and in the analysis, the critical paths to be followed to reach the goals outlined by the SDGs are not easy. There are several points that need attention and investment around the world. What motivated me to start this research was precisely the observation of these challenges and how they are addressed at global and local levels. Being inside one of the institutions that represent the city of Trondheim allowed me to have insights that I would never have been on the “outside”.

The theory is essential to understanding the reality in which we are inserted. It is important to understand the historical context and the paths that led to the decision-making that guides modern human life. Much of what can be seen in this research (not only the results but the decision-making and partnership-building processes) is part of a context that has been built for centuries and that today finds its point of conversion. Therefore, before understanding what is being done in the city of Trondheim, it was necessary to observe the theory and history that explain how the city has been transforming its public policies to connect with global sustainability issues.

It is necessary to understand that decision-making is not always easy, and there are often long paths to be covered. The impressions I was able to have, in general, are positive and hopeful for the city of Trondheim and for Norway as a whole. Some criticisms will be addressed further on, but they are specific comments since, as can be seen in the previous point, the city of Trondheim is managing to get ahead of other cities in relation to the application of the Objectives.

Most of the time, when studying the ideals behind development discourses, it is possible to see that they do not reflect a homogeneous reality and that there are differentiations and distinctions concerning how these discourses approach specific themes. More recently, we have seen the emergence of themes that escape the traditional scope of approaching development and add more information and possibilities for transformation than what is known so far from the "mainstream" forms of development. Although Norway still follows some points of the traditional way of development with the exploitation of natural resources currently being discussed, such as oil, for example, it is possible to see that the country is at the forefront when talking about sustainable development as a whole. As shown before, according to The Sustainable Development Report, Norway is among the ten most sustainable countries in the world, a fact that explains the

importance of a Sustainability Center capable of promoting sustainable ideas that can go against the commonly known type of development.

Local and regional governments in Norway have taken significant steps in recent years to collaborate with and toward the SDGs. In fact, according to a recent survey related to the Voluntary Subnational Review (VSR), 95% of municipalities and all regional authorities that responded report that they have begun working with the SDGs. When asked to assess how far they have come, municipal responses are more modest, and there are apparent differences in who has made significant progress in working with the SDGs at the local and regional levels. The paragraphs that follow will elaborate on these variations as well as outline another key, overarching findings pertinent to describing the status and progress of working with the SDGs in a local and regional context (Norwegian Ministry of Local Government and Modernization, 2021).

## **5.1 Local initiatives**

Local governments play an important and fundamental role in achieving the goals of the SDGs. To achieve them, efforts are needed that involve not only articulation but also mobilization and integration between governments and civil society as a whole, aiming at promoting public policies and improving those that already exist in the city.

When looking at the process of applying the SDGs locally (analyzing national, regional, economic, social and environmental contexts), it is important that the whole of society not only participates in decision-making processes but also benefits from such decisions. As a result, local governments play a key role when translating national and global goals and indicators into the local reality, as it is through actions that consider the SDG goals in their respective planning and budgets, including mechanisms for participation and engagement of the civil society. As a result, a balance between bottom-up and top-down support remains essential, with funding allocated for municipal and regional SDG activities. In all countries, it is imperative that the roles and responsibilities of municipalities, national government, are clear and in harmony.

As can be seen, both Norway, but more specifically the city of Trondheim, are succeeding in translating debates from global levels to local realities. By creating partnerships with different actors (public and private), Kommune allows more people to be part of the process of building a more inclusive and less unequal society. Even observing the implementation of the 2030 Agenda

taking place mainly at the national level, the realization of the SDGs depends on the efforts and progress made at the local level (KS, 2021).

It is possible to see that since 2015, with the implementation of the SDGs, cities and regions have gained prominence in the translation of these debates from the global agenda to the local scope, thus bringing the SDGs closer to people and communities, making use of a collective structure as a tool for planning and local development.

The local dimension of the SDGs shows that municipalities and cities are not mere implementing agencies, as their challenges generate opportunities to achieve the SDGs more efficiently. The concept of location also needs to be adapted and transformed in a holistic way, aiming to include all local actors from civil society, in addition to academia, the private sector and others. It was also possible to see that Trondheim and Asker were the first Norwegian municipalities to present VLRs, which shows the protagonist of the city of Trondheim when seeking to report the paths that are being taken by the city (KS, 2021).

## **5.2 Critics**

To better understand the effectiveness of the SDGs, it is also necessary to identify the problems and difficulties in their execution. So, bringing it to the analysis, I was able to observe some problems that need to be mentioned throughout my experience at the Trondheim Sustainability Center.

As discussed in the methodology, the difficulty in obtaining data is recurrent in several countries and locations. Even though the city of Trondheim has more data about the SDGs and their effectiveness, important information is still lacking in general. For example, I bring the report of activities developed by the Center in the year 2021. The report itself provides important and necessary information on the paths taken by the Center that year. However, one factor that I observed was the lack of concrete data regarding the activities carried out and the actual impact on society. As also mentioned before, the activities are relevant and necessary. However, at least in this report, there is no measurable data that allows the visualization and evidence of the effectiveness of such activities.

Therefore, in this case, qualitative analysis joins quantitative analysis. Both go together and are not antagonistic. Therefore, the lack of this information can make it challenging to visualize local needs and can lead to a misdirection of public policies.



## Conclusion

The thesis sought to observe and analyze the paths taken by the Trondheim Kommune to implement the SDGs in the city, taking into account the strategies and partnerships adopted. As observed throughout this research, with an increasingly globalized and interconnected world, it is possible to see the growing importance of debates around sustainability and sustainable development, which have direct importance in our daily lives. Human activities over the centuries have had significant effects on our daily lives. With that, since the problems have reached global proportions, it is necessary to join global efforts to solve such problems. Today, it is possible to observe the emergence of the UN as one of the main actors in the search for debating and finding solutions involving the environmental, social and economic areas. Because of this, it was also possible to observe the need for efforts on the part of countries and local governments to translate global debates according to the reality of each region.

Therefore, taking into account the historical process of sustainable development and the application of the SDGs through partnerships and projects, it was possible to see that Trondheim is on track to achieve most of the SDGs for 2030. With the partnerships that are being developed, the city tends to co-opt even more expertise to guarantee the maintenance of the Goals achieved and the realization of those that have not yet been achieved. The partnership with the UN has shown positive results. The creation of the Sustainability Center in the city gives more guarantees and credibility to the work carried out.

By creating projects and activities that bring together civil society and the public and private sectors, Trondheim Kommune can integrate the population as a whole, allowing more people to be part of the decision-making processes. The Norwegian Government called for the SDGs to be integrated into all social and land use plans of all Norwegian municipalities and municipal authorities, and this was observed in the Trondheim municipal plans, especially those focused on Climate.

Some of the problems that the city faces are the lack of more precise and concrete data concerning some Goals, which can make it challenging to visualize better the effectiveness of the projects and initiatives adopted by the city.

The initiatives adopted by Trondheim Kommune can and should be used as a guide for other cities worldwide that aim to obtain more efficiency when putting into practice the Sustainable Development Goals

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