



## SDG 11 IN PERSPECTIVE: A COMPARATIVE ANALYSIS BETWEEN CURITIBA AND ARANGUÁ

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### SUMMARY

This study aims to discuss the United Nations (UN) Sustainable Development Goal 11, intertwined with the arguments of renowned researchers on the subject, such as Cortese (2017), Jacobi (2003) and Nalini; Silva Neto (2017). Based on this analysis, the positive and negative characteristics of the environmental aspects of the capital of Paraná, Curitiba, considered the most sustainable city in Brazil, were compared with the municipality in which we live, Araranguá - SC. The problem that guided the research was: Based on documents and bibliographic productions, what could we propose and implement in Araranguá to promote effective sustainability as occurs in Curitiba? Methodologically, this research was characterized as qualitative, bibliographic and comparative. The results analyzed showed us that the municipality of Araranguá, although it is moving in the right direction through its Master Plan, still needs significant interventions to reach the level of sustainability of Curitiba, as indicated by Sustainable Development Goal 11.

**Keywords:** sustainability; SDG nº11, Araranguá, Curitiba.

### 1 INTRODUCTION

This study aims to discuss the United Nations (UN) Sustainable Development Goal 11, intertwined with the arguments of renowned researchers on the subject. Based on this analysis, we compare the positive and negative characteristics of the environmental aspects of the capital of Paraná, Curitiba, considered the most sustainable city in Brazil, with the city where we live, Araranguá - SC.

The problem that guided the research was: Based on documents and bibliographic productions, what could we propose and implement in Araranguá to promote effective sustainability as occurs in Curitiba?

Sustainability is a topic of constant research and concern across the planet. In this sense, in 2015, the 2030 Agenda was created and adopted by UN Member States. This document sets out 17 Sustainable Development Goals (SDGs) that aim to promote sustainable development in various areas, such as health, education, gender equality and the environment by the year 2030.

To develop this comparative analysis, we listed SDG nº11, whose theme consists of *"Making cities and human settlements inclusive, safe, resilient and sustainable"* focusing on the creation of urban spaces that offer quality of life and safety, promoting social inclusion and sustainability.

In discussions about the problems and challenges of the contemporary world in relation to sustainability, we list Cortese (2017), Jacobi (2003) and Nalini; Silva Neto (2017) among others.

Methodologically, this research is characterized as qualitative, bibliographical and comparative. Qualitative research, as stated by Gil (2008), is a type of investigation that focuses on understanding phenomena from the perspectives of the participants themselves. It is characterized by the collection of in-depth data.

ity, such as interviews, observations and document analysis, to explore meanings, experiences and perceptions in a more subjective way. (GIL,2008)

According to Gil (2008), bibliographic research is that which seeks to survey, analyze and synthesize the existing literature on a given topic or problem. This research uses sources such as books, scientific articles, theses, dissertations and other published materials to offer a general and critical view of

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the subject in question. The objective is to know what has already been produced and published, identifying approaches, concepts and results of previous studies.

In this sense, the author (2008) reinforces the idea when she states that “bibliographic research is developed with already prepared material, consisting mainly of books and scientific articles (GIL, 2008, p.44).

Comparative research consists of a method that examines the similarities and differences between phenomena, groups or variables, aiming to identify patterns and possible relationships. This type of research is common in social and cultural studies, where the aim is to understand how and why certain phenomena vary in different contexts, and can also be applied in historical comparisons between countries, cities and public policies.

According to Gil (2008), comparative research aims to analyze and compare phenomena that occur in different contexts, to identify similarities and differences that enable a better understanding of these phenomena (GIL, 2008)

This study is divided into five sections: the first section is occupied by the introduction of the work. It includes the research objective, the problem, the methodology adopted and the main theoretical foundations that supported this study. The second section includes arguments on the sustainable development goal (SDG) nº11. The third section presents the discussions of renowned authors on environmental problems and the challenges to make the world sustainable. The fourth section draws a comparative parallel in relation to sustainability between Curitiba and Araranguá and the analysis of the research results. The fifth section opens space for the final considerations followed by the references.

## 2 THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT: TRANSFORMING OUR WORLD

This document was created in 2015 and adopted by UN Member States. It contains the 17 (seventeen) Sustainable Development Goals (SDGs) that aim to promote sustainable development in various areas, such as health, education, gender equality and the environment by the year 2030.

Among these SDGs, we chose number 11 for the development of this study, whose theme consists of “*Making cities and human settlements inclusive, safe, resilient and sustainable*” focusing on the creation of urban spaces that offer quality of life and safety, promoting social inclusion and sustainability. (UN, 2015).

According to the 2030 Agenda (2015), this objective reflects the growing need to think about urban development in an integrated manner, since cities and urban areas are home to more than half of the world's population and face economic, social and environmental challenges that require human action to improve them. It describes several goals and highlights some key points: access to housing and basic services, safe and sustainable transport, inclusive and sustainable urban planning, cultural and natural heritage, reduction of urban environmental impact, green areas and public spaces, and resilience to disasters. (UN, 2015).

With increasing urbanization, cities face serious problems such as uncontrolled sprawl, lack of adequate infrastructure, marked social inequalities and environmental management. In many cities, especially in developing countries, people live in informal settlements or slums, where access to basic services such as sanitation, health, education and security is limited.

According to the United Nations Environment Programme (2011), cities are responsible for around 70% of global greenhouse gas emissions, which reinforces the urgency of developing environmental urban policies. (UNITED NATIONS ENVIRONMENT PROGRAM, 2011).

SDG 11 is crucial for sustainable development, as it allows cities to be the epicenter of economic growth, innovation and culture, but they are also areas where environmental and social problems are most visible and intense. This goal seeks to balance urban development with sustainability, so that cities can continue to be engines of growth and integrated human development preservation.

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To achieve SDG 11, a joint effort is needed between governments, international organizations, national institutions, private companies and civil society. Public-private partnerships can facilitate investments in sustainable infrastructure and social housing projects. In addition, local governments play a crucial role in implementing policies that promote urban sustainability, such as zoning regulations that encourage green areas and the construction of affordable housing. (UN, 2015).

In this sense, SDG 11 is a vital component of the 2030 Agenda for Sustainable Development.

of the UN. It confirms the importance of transforming cities into inclusive, safe, resilient and environmentally sustainable places, in order to guarantee the well-being of all citizens and minimize the negative impacts of urbanization on the environment.

The next section presents the main environmental problems that affect the contemporary world from the perspective of the main theoretical foundations that contributed to the development of this study and the solutions and challenges for man in the search for a more sustainable, dignified and humanized planet.

### **3 THE CHALLENGES OF CONTEMPORARY SOCIETY FOR A SUSTAINABLE WORLD: SMART CITIES AND THE ROLE OF ENVIRONMENTAL EDUCATION**

The pace determined by accelerated global economic growth has gradually caused significant pressure on the environment due to factors such as the intense demand for natural raw materials, the occupation of green areas resulting from population growth, soil, air and water pollution, waste generation, etc. (CORTESE et al., 2017). Furthermore, the accelerated urbanization process has numerous consequences, such as traffic congestion, violence, scarcity of resources, social and economic inequality, among many others (FRANCISCO JÚNIOR, 202).

In this context, rapid urban growth and emerging environmental challenges have led to the need for innovation in urban planning and city management. The idea of “smart cities” has emerged as a modern solution that uses technology to improve infrastructure, enhance quality of life and ensure sustainability. This concept encompasses the use of digital technologies and other innovative tools to improve resource management, and consequently reduce environmental impacts and promote sustainable urban coexistence.

Smart cities use advanced technologies to transform the way urban services are managed and resources are consumed. Technology allows local governments to monitor and improve energy use, transportation, waste management and public safety, creating a city that responds quickly to the needs of its inhabitants. This concept transcends the boundaries of large metropolises, also applying to medium and small cities seeking solutions to their urban challenges.

Technology enables more efficient management of public services, promoting greater community participation. Digital platforms, for example, allow citizens to actively engage, reporting problems in real time and monitoring the effectiveness of public actions. This makes the governance process more transparent and participatory.

One of the central premises of smart cities is a commitment to sustainable development. This includes practices such as the use of renewable energy, recycling waste, encouraging efficient public transport and creating green spaces.

According to Nalini; Silva Neto (2017):

“A sustainable city should consider the three components of sustainability in its planning: environmental sustainability, economic sustainability and social sustainability. This would include topics such as green bidding, sustainable buildings, public transport networks based on renewable energy sources and the appropriate disposal of solid waste and liquid effluents. It would also include the adoption of green certifications and the incorporation of evaluation indicators that prioritize the amortization of greenhouse gas emissions and an ongoing process of discussion that would result in periodic reviews of criteria, so that they would be increasingly rigorous”. (NALINI; SILVA NETO, 2017, p. 23).

Key technologies used in smart cities may include smart metering, sensors, web access, and city information models, and discuss the associated benefits and challenges. **3** to its implementation. Smart metering refers to digital equipment that allows for more accurate measurement of the consumption of resources such as water and energy. These devices provide real-time data to both consumers and utilities. This technology not only improves consumption monitoring by users, but also encourages a more conscious use of natural resources. (SANTOS, 2018).

Furthermore, the data collected can be used to adjust consumption estimates per consumer unit, correcting possible oversizing present in initial master plans (Siddiqi; Weck, 2013).

Internet connection is essential for the operation of smart cities. Digital access to Public services, known as e-government, is a central feature that allows citizens to interact with the municipal administration more efficiently. However, it is crucial to ensure that all citizens have access to these technologies; otherwise, the phenomenon of the digital divide may occur. This concept refers to the disparity between those who have access to digital technologies and those who do not, which may limit the effectiveness of smart city initiatives (Abu-Shanab; Khasawneh, 2014).

The article "Accessibility and Technology in the Construction of the Smart City" explores how technology can be used to solve urban accessibility problems and promote inclusion in smart cities. The authors point out that population growth and urbanization without adequate planning have generated social exclusion and difficulty of access for people with reduced mobility (ALPERSTEDT NETO, DE ROLT, & ALPERSTEDT, 2018). Even with Brazilian legislation, such as Law No. 13,146 (Statute of Persons with Disabilities), infrastructure is still insufficient, especially in public spaces and urban transportation.

The study highlights the potential of collaborative technologies, such as crowdsensing, for collecting and disseminating information on accessibility. According to the authors, "technology allows for a review of this problem, helping not only with accessibility, but also making cities more human and intelligent" (ALPERSTEDT NETO et al., 2018). The research used the Design Research methodology to develop an application focused on Florianópolis, which allows users to evaluate and share data on accessibility in public and private places. This app provides information on ramps, adapted bathrooms, parking spaces and other essential aspects. The authors emphasize that the creation of an accessible and collaborative database can not only inform citizens, but also provide "inputs to improve urban public policies" (ALPERSTEDT NETO et al., 2018).

For researchers, a smart city must promote equal rights and social well-being, with equal participation and contribution from all citizens, favoring a more democratic and sustainable society.

Despite the advances, the implementation of smart cities still faces significant challenges, especially in developing countries where urban infrastructure and financial resources are limited. In Brazil, the public and private sectors need to work collaboratively to develop sustainable policies and projects to meet the growing demands of urbanization without compromising the environment.

Another important challenge is citizen awareness and engagement. Creating a smart and sustainable city depends on the active participation of residents in adopting environmental practices and promoting a culture of sustainability.

In this context, there is a need for environmental education that transcends the physical environment. It should become a practice of active citizenship, raising awareness among the population about the collective responsibility in preserving natural resources and building sustainable development.

Environmental education is presented as an essential response to confront the ecological and socioeconomic crises that have intensified in recent decades. According to Jacobi (2003), the role of environmental education goes beyond teaching isolated ecological practices, seeking to transform values, attitudes and social behaviors to promote sustainability. Inspired by the principles of interdisciplinarity, this education proposes a critical approach that questions the traditional economic development paradigm, warning about the limits of natural resources and the human impact on the planet.

According to the author (2003)

"Reflecting on environmental complexity opens up a stimulating opportunity to understand the development of new social actors who are mobilized to appropriate nature, for an articulated educational process committed to sustainability and participation, supported by a logic that favors dialogue and the interdependence of different areas of knowledge. But it also questions values and premises that guide prevailing social practices, implying a change in the way of thinking and transformation in knowledge and educational practices." (JACOBI, 2003, p.191).

Ulrich Becks, in his theory of the "risk society," describes a scenario in which environmental risks,

5 German sociologist, whose main theory, that of the Risk Society, sought to highlight the passage from the modern to the post-modern era in terms of socio-environmental impacts caused by decisions taken without considering what the sociologist called risks.



Social and economic risks are increasingly complex and global. Major environmental disasters, such as nuclear accidents and toxic pollution, exemplify this reality, requiring strategic thinking to manage these risks. In a risk society, according to Beck (1992), uncertainties are difficult to predict and control, especially in areas such as ecology, chemistry and genetics. Environmental education, in this sense, should prepare individuals to understand the complexity of risks and promote sustainable practices that minimize negative impacts.

In this scenario, sustainability emerges as an alternative development paradigm that seeks to harmonize economic needs with environmental preservation and social justice. This vision proposes a reformulation of production and consumption methods, advocating responsible use of natural resources and fair redistribution of the benefits generated by development. As Jacobi (2003) points out, environmental education plays a fundamental role in promoting active citizenship, empowering communities to participate in decision-making and sustainable management of resources.

The relationship between environmental education and citizenship is highlighted by the need to transform social practices, so that education promotes awareness of rights and duties in relation to the environment. According to Jacobi (2003), citizenship is not limited to the understanding of legal rights, but expands to the construction of a community committed to the common good and environmental preservation. Environmental education, in this sense, is not only a pedagogical tool, but a political practice that encourages citizen participation in solving socio-environmental problems.

It is in this sphere that education takes on a transformative role, by raising awareness among people about their role in environmental preservation and in promoting inclusive and sustainable development. Schools, NGOs and communities have the role of educating, raising awareness and encouraging commitment to ecologically responsible practices, oriented towards collective well-being and the protection of natural resources. Jacobi (2003) also highlights the crucial role of NGOs and social movements in strengthening innovative environmental practices, especially in contexts where the State is limited in its actions.

Therefore, the educational system must approach environmental education not only as a discipline, but as an interdisciplinary practice that permeates all areas of knowledge. Furthermore, social transformation towards sustainable development requires that governments, institutions and civil society are committed to creating spaces for public participation. Public authorities must encourage inclusive and environmentally responsible educational policies, ensuring that communities have access to information and channels of participation that allow them to be involved in decisions that affect their lives and the environment.

In the following section, we present a comparison between Curitiba, the most sustainable city in Brazil, and Araranguá, the city in Santa Catarina where we live. These comparisons, followed by the analysis of results, are based on SDG 11 and the theoretical foundations that contributed to the execution of the research.

#### **4 CURITIBA AND ARARANGUÁ: A PARALLEL ON ENVIRONMENTAL ISSUES.**

Curitiba, the capital of the state of Paraná, has a rich history that reflects the development of southern Brazil and the cultural influences brought by various groups of immigrants. Officially founded on March 29, 1693, the city was initially a transit point for cattle drivers, who crossed the region in search of gold and other resources in the interior of the continent.

In the 19th century, the city began to receive European immigrants, including Germans, Italians, Poles and Ukrainians, who played a crucial role in the cultural, economic and architectural formation of Curitiba. These groups brought new farming techniques, contributed to agricultural development and established colonies that became important neighborhoods of the city. (PREFEITURA MUNICIPAL DE CURITIBA, 2024).

5 Curitiba stood out nationally and internationally from the 1970s onwards, when it implemented an innovative Master Plan. This plan included the development of the public transport system known as BRT (Bus Rapid Transit), which created exclusive bus lanes and improved urban mobility, making the city a model for public transport. In addition to the BRT system, the Master Plan encouraged the creation of parks and green areas, such as Barigui Park, the Botanical Garden and the Bosque Alemão, which helped to preserve the environment and offered leisure spaces for the population. (PREFEITURA MUNICIPAL DE CURITIBA, 2024).

In recent decades, Curitiba has maintained its reputation as an innovative and environmentally conscious city. The city has continued to invest in sustainability projects, including the creation of bike paths,

incentives for recycling and social programs such as “Câmbio Verde” and “Lixo que não é Lixo”. Curitiba has also become a center of innovation, with the creation of Vale do Pinhão, an ecosystem of startups and technology companies that supports entrepreneurship and the development of new urban solutions. (PREFEITURA MUNICIPAL DE CURITIBA, 2024).

Today, Curitiba faces the challenges of growth and modernization, especially with the increase in population and the need to improve housing and transportation infrastructure. However, the continued commitment to sustainable urban planning and the integration of economic development and environmental preservation reinforces Curitiba's status as a reference in urban planning.

Curitiba has stood out on the Brazilian scene by incorporating the UN's 2030 Agenda through several initiatives aligned with the Sustainable Development Goals (SDGs). The actions aim to address social, environmental and economic challenges, driving sustainability in areas such as urban mobility, the environment, education and social inclusion.

According to a document produced by the City Hall of Curitiba (2024) on the Sustainable Development Goals (SDGs) of Curitiba, the initiatives associated with SDG 11 focus on creating a more inclusive, safe, resilient and environmentally sustainable city, through integrated and innovative policies.

### **Main Initiatives of Curitiba in the Context of SDG 11:**

**Sustainable Urban Mobility:** The city has invested in the Bus Rapid Transit (BRT) system, which improves travel on bus-only lanes and improves air quality by reducing dependence on private vehicles.

**Preservation and Expansion of Green Areas:** Curitiba stands out for its significant number of green areas and urban parks, which are essential for the quality of life of its citizens. These spaces serve as places for leisure and recreation, in addition to promoting the preservation of local biodiversity and mitigating the effects of urban heat islands.

**Resilience to Natural Disasters:** Urban planning includes the recovery of risk areas, control of slopes and implementation of infrastructure that allows for the adequate drainage of rainwater, reducing the impact of heavy rains and protecting the population from possible environmental tragedies.

**Social Inclusion and Urban Accessibility:** The city has policies that aim to adapt urban spaces to ensure that people with disabilities and older people can move around safely and independently. Universal accessibility is an essential aspect of SDG 11.

**Efficient Waste Management:** The city encourages the population to actively participate in the waste separation process, contributing to the reduction of the volume of waste sent to landfills. This not only reduces environmental impacts, but also promotes the circular economy, in which materials are reused and recycled, reducing the demand for natural resources.

**Housing and Land Regularization:** To ensure a more inclusive city, Curitiba develops housing policies that aim to regularize land tenure and provide access to decent housing for the low-income population. These efforts ensure that more citizens have access to adequate housing, which is crucial to creating a safe and resilient city, as proposed by SDG 11.

Although Curitiba is at the forefront of many aspects of urban sustainability, population growth and climate challenges require the city to continue innovating and improving its practices. Climate change intensifies the need for cities to adapt, and Curitiba stands out for being attentive to these challenges, promoting public policies that ensure a city prepared for the future. These actions are concrete examples of how Curitiba is committed to the principles of SDG 11, with the goal of creating a more just, sustainable and accessible urban environment for all. (CURITIBA CITY HALL, 2024).

Araranguá is known as the City of Avenues, as it was designed with wide streets by the engineer Antônio Lopes de Mesquita in 1886. The work developed by the engineer was entitled suggestive of the “Plan of the Future City of Araranguá”, which modernized the place, with large public spaces and large, wide avenues with rectilinear symmetry

The occupation of its first inhabitants was by the Sambaquis indigenous people. Later, the Jês and Guaranis potters. Between 1748 and 1756, the Azoreans arrived and explored the entire coast of Santa Catarina. Araranguá was separated from the city of Laguna on April 3, 1880 and elevated to the category of municipality, with its establishment in 1883. During the 20th century, the municipality underwent several significant transformations in several areas, including transportation, health and education. Of note was the creation of the Bom Pastor hospital, which is currently a reference for several health services in the region. In addition,

Schools were established to improve local education, and the economy was strengthened with the development of agriculture, the creation of industries and the growth of commerce. The city has a rich variety of tourist attractions that delight visitors. Its beaches, dunes and well-structured lagoons are true natural treasures. Among them, the Serra lagoon and Praia Morro dos Conventos stand out. (FABRIS, TR; WA-TANABE, M.; LOPES, 2023).

The Araranguá Development Plan was carried out concurrently with the other municipalities of the Association of Municipalities of the Extreme South of Santa Catarina - AMESC, as a result of collaborative and democratic work between UNESCO, AMESC and the government of the state of Santa Catarina. UNESCO, a community higher education institution, was the mediator responsible for preparing the work carried out during 2022. Frey (2004) values local knowledge as an input for urban management, which, in this way, makes its governance more inclusive and more interactive, with the actors involved.

Fabris, Watanabe and Lopes (2023), organizers of the document "The Araranguá Socioeconomic Development Plan (2023-2033)" point out the **Araranguá's main initiatives in the context of SDG 11:**

**Social Inclusion and Community Participation:** One of the pillars of SDG 11 is social inclusion, which the Araranguá Plan addresses by emphasizing the importance of integrating the community into decision-making processes and the implementation of local projects. During the diagnostic and workshop stages, the municipal administration encouraged the participation of residents, representatives from various sectors of society, community leaders and the productive sector. Promoting social participation in public decisions not only increases the legitimacy of actions, but also reinforces transparency and co-responsibility in urban management, so that the population plays an active role in building a more inclusive and sustainable city.

**Infrastructure and Urban Mobility:** Araranguá faces challenges in terms of basic infrastructure, including a lack of sanitation and deficiencies in selective waste collection. The Plan highlights the urgency of modernizing and expanding basic sanitation systems, which are essential to improving the quality of life of the population and protecting the city's water resources, such as rivers and lakes that play a crucial role in both the environment and local tourism. In addition, mobility infrastructure also requires attention. With a significant increase in the vehicle fleet, the city faces traffic problems, especially during peak hours, which directly impact the quality of life of its residents. To mitigate these challenges, the plan suggests measures to encourage non-motorized transportation, such as the creation of cycle paths and the implementation of an efficient and integrated public transportation system, with sustainable transportation options.

**Urban Planning and Disaster Resilience:** Araranguá's geographic location makes it susceptible to natural disasters, especially floods. This risk is a central concern in the context of SDG 11, which establishes urban resilience as one of the priority objectives. The municipal plan proposes the adoption of strategies aimed at adapting to and reducing natural disasters, including constant monitoring of vulnerable areas and the development of an early warning system. The creation of environmental protection zones in areas at risk of flooding and the recovery of riverbanks are actions indicated as fundamental to reducing the impact of floods, protecting biodiversity and ensuring the safety of the population. The use of georeferencing technologies for monitoring and preventing disasters is an example of how innovation can be used to strengthen the city's safety and resilience. By adopting these strategies, Araranguá would not only be protecting the population and ecosystems, but also ensuring the continuity of its economic activities, such as ecotourism.

**Environmental Sustainability and Quality of Life:** The plan also highlights environmental preservation as an urban sustainability strategy, which is intrinsically linked to the quality of life of citizens. The document proposes the creation of new parks and leisure areas, in addition to the maintenance of existing green spaces. The inclusion of policies that encourage the reuse and conservation of resources

7 Natural resources, such as rainwater collection and rational use of water, are measures that reinforce the municipality's commitment to environmental sustainability. The plan also includes awareness campaigns on the importance of preserving these resources, not only for their beauty and ecological function, but also for the role they play in the local economy, by attracting tourists and providing recreational activities.

**Governance and Partnerships for Sustainability:** Governance is an essential element for achieving the SDG 11 targets, and the Araranguá plan identifies the need for an inclusive and efficient governance model for the management of its public policies. Strengthening public-private partnerships is an aspect emphasized, as it allows the municipality to take advantage of the resources and knowledge of the private sector.

to improve its infrastructure and promote sustainable development.

#### 4.1 Analysis and results

A comparative analysis between Araranguá and Curitiba in the context of Sustainable Development Goal 11 (SDG 11) reveals different stages and approaches to sustainable urban development. SDG 11 aims to make cities more inclusive, safe, resilient and sustainable by promoting improvements in urban mobility, environmental preservation, resilience to natural disasters, housing and governance. The following highlights the main aspects that differentiate and bring together Araranguá and Curitiba in relation to these goals:

**Urban Mobility and Infrastructure:** Curitiba is a reference in Brazil and worldwide for its innovative public transportation system. The Bus Rapid Transit (BRT) system, implemented in the 1970s, offers exclusive bus lanes, facilitating travel and reducing pollutant gas emissions.

Araranguá, on the other hand, still faces challenges related to infrastructure and urban mobility. The city's development plan recognizes the need to expand the sanitation system and adopt solutions that reduce traffic, encouraging non-motorized transport, such as bicycles. Although the city is committed to promoting more sustainable mobility, this is an area where Curitiba already has advanced and consolidated solutions.

**Resilience to Natural Disasters:** Araranguá is located in a location that makes it susceptible to natural disasters, especially flooding. The development plan includes adaptation and mitigation strategies, such as environmental protection zones and the use of monitoring technologies to reduce the impacts of flooding. This focus on disaster resilience meets a critical need for the city, and the proposed actions align with SDG 11, which aims to prepare cities to face natural hazards.

Curitiba has strategies for disaster resilience, but due to its consolidated and well-planned urban development, the city is less exposed to some types of risk. However, Curitiba continues to invest in green infrastructure and solutions to mitigate the impact of climate change, such as increasing green areas that help regulate the microclimate and reduce the risk of heat islands.

**Environmental Sustainability and Green Areas:** Curitiba is widely known for its management of green areas, with parks such as Barigui and Jardim Botânico, which provide leisure and preserve biodiversity. This management of green spaces helps reduce pollution and promotes the well-being of the population.

Araranguá has a strong natural potential, with beaches, lagoons and dunes that can boost eco-tourism and leisure. The municipal plan proposes the creation of new parks and the maintenance of existing ones, as well as regulations to protect these resources. However, Araranguá still needs investment in environmental education and preservation, which places it at a stage of development in terms of environmental sustainability that is still trying to reach the consolidated level of Curitiba.

**Social Inclusion and Governance:** Curitiba has been working for decades to make its urban spaces accessible to people with reduced mobility and the elderly, ensuring a more inclusive environment. The city promotes accessibility policies and actively participates in waste management and recycling programs, with governance focused on sustainability and social inclusion.

Araranguá has invested in social inclusion, encouraging community participation in urban planning decisions, which reinforces transparency and co-accountability in public management. The creation of councils and committees to monitor the progress of public policies is an approach aligned with SDG 11.

In short, Curitiba is at a more advanced stage in relation to the SDG 11 targets, with consolidated urban infrastructure, a strong focus on sustainable mobility and recognized environmental practices. Araranguá, on the other hand, presents promising plans for sustainable development, but still faces structural challenges, such as sanitation and mobility, which Curitiba has already largely overcome.

## FINAL CONSIDERATIONS

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This research allowed an in-depth analysis of the UN Sustainable Development Goal (SDG) No. 11, aimed at promoting more inclusive, safe, resilient and sustainable cities and human settlements. By comparing the city of Curitiba, a national reference in sustainable urban practices, with Araranguá, the municipality in which we live, it was possible to identify the different stages of development and the specific challenges faced by both locations in the implementation of policies aimed at urban sustainability and, thus, answer the problem of this study: Based on documents and bibliographic productions, what were we able to propose and implement in Araranguá to promote a



effective sustainability as it occurs in Curitiba?

Over the past few decades, Curitiba has built an innovative urban management model that is recognized worldwide for its efficient public transportation system and the creation of extensive green areas. The city stands out for its consolidated infrastructure, with sustainable mobility policies and social inclusion projects that serve as inspiration for other Brazilian cities. This success is the result of pioneering urban planning and governance committed to the well-being of the population and environmental preservation, aspects that position it as an example of a sustainable city.

On the other hand, Araranguá is still in the early stages of implementing the goals proposed by SDG 11, facing significant challenges in the areas of sanitation, urban mobility, and resilience to natural disasters. However, the municipality has demonstrated a growing commitment to sustainable development, especially since the development of the Araranguá Socioeconomic Development Plan (2023-2033). This plan seeks to align itself with global objectives, proposing specific measures for the local reality, such as the creation of cycle paths, the improvement of sanitation systems, and the implementation of social inclusion policies. By integrating the participation of civil society and different sectors of the community in the decision-making process, Araranguá adopts a more democratic and participatory governance, which strengthens the engagement of the population and increases the legitimacy of the proposed actions.

One of the strengths of Araranguá's approach is its encouragement of social inclusion and environmental education, which are fundamental to building an active and conscious citizenship. By engaging the community in sustainable practices and promoting access to green spaces, the municipality is making progress in creating a healthier and more inclusive urban environment. Furthermore, environmental education is a central pillar for developing a culture of sustainability, preparing new generations to face global and regional environmental challenges.

The comparison with Curitiba also highlights the need for continued investment in infrastructure and technology so that Araranguá can achieve higher standards of sustainability. The city of Curitiba has invested in a system for monitoring risk areas and in mechanisms for resilience to natural disasters, elements that are still incipient in Araranguá. Thus, the implementation of monitoring technologies and the strengthening of urban resilience policies are essential for the city to more effectively face the impacts of climate change and ensure the safety of its residents.

Thus, this research reinforces the importance of integrating public policies and social participation to build sustainable and resilient cities. The case study of Araranguá illustrates the potential for urban development based on sustainability, while also highlighting the challenges and opportunities for the transformation of Brazilian cities.

Therefore, achieving the SDG 11 goals depends on a joint effort between government, civil society and the private sector, where each actor plays an essential role in promoting urban sustainability. Araranguá is moving towards a more sustainable and inclusive future, but the success of its policies will depend on a long-term vision, with consistent investments in infrastructure, education and democratic governance. This commitment will be essential for building a city that offers quality of life to its inhabitants and contributes to a fairer and more sustainable planet.

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