FOZ DO IGUAÇU: A PATH TOWARDS SUSTAINABILITY? A COMPARATIVE ANALYSIS WITH REFERENCE CITIES IN SUSTAINABILITY

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ABSTRACT

This article aims to critically analyze the characteristics of Foz do Iguaçu in comparison with cities globally recognized for their sustainable and smart practices, such as Curitiba, Osaka, Sydney, Geneva and Paris. From a literature review, it was possible to identify the main challenges and opportunities that Foz do Iguaçu faces in areas such as urban mobility, waste management, use of smart technologies, energy efficiency and social inclusion. The city has significant advantages, such as the Itaipu Hydroelectric Power Plant and the Iguaçu National Park, which offer solid foundations for sustainable development. However, it is necessary to broaden the scope of its public policies, investing in urban technologies and inclusive governance. The study concludes that, for Foz do Iguaçu to consolidate itself as a sustainable city, it must adopt more integrated strategies, based on successful examples from other cities, and strengthen community participation, technological innovation and environmental preservation. By combining these factors, Foz do Iguaçu can become a benchmark in sustainability and urban intelligence in Latin America.

Keywords: Sustainability. Smart Cities. Urban Mobility. Waste Management.

INTRODUCTION

The concept of sustainable cities has gained increasing relevance in global urban debates, driven by the urgent need to deal with the environmental, social and economic challenges posed by accelerated urbanization. Cities that adopt sustainable practices not only improve the quality of life of their inhabitants, but also contribute to ecological balance, mitigating the effects of climate change. In the videos "7 Most Sustainable Cities in the World" and "Green and Sustainable Cities", several cities that stand out for their innovative and sustainable practices are presented, such as Copenhagen and Curitiba, serving as an example for municipalities around the world.

In this context, Foz do Iguaçu, a city recognized for its tourist importance and for the triple border that connects it with Argentina and Paraguay, also seeks to adapt to the requirements of sustainability. The city faces considerable challenges, such as solid waste management, urban infrastructure and environmental preservation, while having positive characteristics, such as the abundance of natural resources and the potential to use renewable energy, due to the presence of the Itaipu Hydroelectric Power Plant. When comparing Foz do Iguaçu with cities such as Curitiba, Sydney, Osaka, Geneva and Paris, different approaches and levels of development stand out in terms of sustainability and urban intelligence. Each of these cities has specific practices that make them world references in sustainable urbanization and technologies applied to the urban environment. Below, we will make a critical analysis of these cities, highlighting their advances in sustainability and how Foz do Iguaçu positions itself in relation to these standards.

CURITIBA (BRAZIL): PIONEERING URBAN SUSTAINABILITY

Curitiba is widely recognized for its pioneering spirit in sustainable urban planning. The Brazilian city has implemented an efficient and innovative public transport system, the Bus Rapid Transit (BRT), which has reduced dependence on private vehicles and improved urban mobility. In addition, Curitiba has a high rate of green areas per inhabitant, with several parks and recycling initiatives that are models for other cities.

Comparison with Foz do Iguaçu: Although Foz do Iguaçu has advanced in terms of urban mobility, especially with the incentive to public transport and the recent bike lane project, it still lags behind Curitiba in terms of integration between transport, green areas and sustainable urban planning. Foz has a great natural wealth, such as the Iguaçu National Park, but it needs to intensify its efforts in environmental preservation and solid waste management.

SYDNEY (AUSTRALIA): PLANNING AND SUSTAINABLE ENERGY

Sydney stands out for its investments in renewable energy and sustainable construction. The Australian city is a global benchmark in the use of solar and wind energy, as well as adopting strict eco-friendly building standards. Urban planning also includes the integration of green spaces and solutions for climate change adaptation.

Comparison with Foz do Iguaçu: Foz do Iguaçu has a strategic advantage in relation to the production of renewable energy due to the presence of the Itaipu Power Plant, one of the largest hydroelectric plants in the world. However, while Sydney expands its use of solar and wind power, Foz do Iguaçu still relies predominantly on hydroelectricity. There is a potential for diversification of renewable energy sources in the region, which still needs to be better explored.

OSAKA (JAPAN): TECHNOLOGICAL INNOVATION AND ENERGY EFFICIENCY

Osaka has stood out as a smart city for its technological innovations aimed at sustainability. The use of efficient energy systems, such as smart grids, and the development of technologies to reduce carbon emissions are examples of its leadership in this field. The city also invests heavily in technologies that promote resilience in the face of natural disasters.

Comparison with Foz do Iguaçu: Foz do Iguaçu is still in the early stages in relation to the implementation of smart city technologies, especially with regard to the use of smart grids and innovations aimed at energy efficiency. Although there are projects to modernize the city, such as the implementation of urban monitoring systems, the integration of technologies to optimize energy consumption is still not as advanced as in Osaka.

GENEVA (SWITZERLAND): SOCIAL AND ENVIRONMENTAL SUSTAINABILITY

Geneva is a model city in social and environmental sustainability, with a strong emphasis on inclusive governance practices and public policies aimed at social equality. The Swiss city also prioritizes the use of electric public transport and invests significantly in clean energy sources such as hydropower and solar power.

Comparison with Foz do Iguaçu: Although Foz do Iguaçu has the advantage of producing clean energy on a large scale through Itaipu, the city still faces challenges regarding social inclusion and the provision of affordable public services. Geneva serves as an example for Foz with regard to the integration of sustainability policies with the reduction of social inequalities, something that can be further worked on in the reality of Foz do Iguaçu.

PARIS (FRANCE): SUSTAINABLE MOBILITY AND DECARBONIZATION

Paris has invested massively in sustainable mobility strategies and decarbonization policies. Encouraging the use of bicycles, expanding electric public transport and creating car-free zones in the city centre are some of the initiatives that have made Paris a model city in the fight against carbon emissions.

Comparison with Foz do Iguaçu: Foz do Iguaçu has made efforts to improve its infrastructure for cyclists and encourage the use of more sustainable transport. However, Paris is at a much more advanced stage in promoting green urban mobility and reducing CO2 emissions. Foz still needs to expand its efforts in offering alternatives to automotive transport, especially in the urban center, and invest more in renewable energy for transport, such as the electrification of its bus fleet.

FOZ DO IGUAÇU: WAYS TO BECOME A SUSTAINABLE AND SMART CITY

Foz do Iguaçu, with its privileged natural characteristics and its renewable energy production infrastructure, has great potential to become a sustainable and smart city. However, challenges such as solid waste management, social inclusion, and the expansion of smart urban technologies still need to be overcome.

Cities such as Curitiba, Sydney, Osaka, Geneva and Paris offer valuable lessons for Foz do Iguaçu. The city needs to continue investing in integrated urban planning, sustainable mobility and diversification of its energy sources. In addition, it should take advantage of the potential of its energy production technologies, such as the Itaipu hydroelectric plant, to serve as a basis for the development of a more modern, efficient and sustainable urban infrastructure. With a governance more focused on sustainability, which combines technological advances and social inclusion, Foz do Iguaçu can consolidate itself as a reference in urban sustainability in Latin America, aiming for the title of smart and sustainable city in the near future.

This article aims to critically analyze the characteristics of the cities mentioned in the videos in comparison with the reality of Foz do Iguaçu. We will discuss how the city has responded to the main aspects of sustainability, evaluating positive and negative points of its urban management, in order to reflect on its potential to become an example of a sustainable city.

METHODOLOGY

The methodology adopted for the construction of this article is of a bibliographic nature, based on a critical and comparative analysis of secondary sources that deal with

sustainable urban development and smart cities. Bibliographic research is essential to support the discussion, as it allows the collection of relevant and consolidated information on the urban practices of cities that are already global references in sustainability, such as Curitiba, Sydney, Osaka, Geneva and Paris, in addition to offering subsidies for the critical analysis of Foz do Iguaçu in relation to these examples. Academic articles, international reports, publications from multilateral organizations, such as the UN and the World Bank, as well as case studies and audiovisual documentaries, including the videos analyzed on sustainable and smart cities, were consulted. This methodological choice is justified by the wealth of data and information in the literature on sustainable urbanization, which allows for a robust comparative analysis of different urban realities. The methodology seeks to extract from the examples of these cities the elements that can be applied to Foz do Iguaçu, evaluating how the city can adopt similar practices and policies.

The comparative approach between cities is a central strategy, as it allows us to observe not only the sustainability characteristics of each one, but also to identify the specific potentialities and challenges of Foz do Iguaçu. In addition, the theoretical concepts of sustainable and smart city were considered, which involve multidimensional aspects, such as urban planning, energy efficiency, mobility, governance and social inclusion. The analysis of these elements aims to build a critical understanding of how Foz do Iguaçu positions itself in the context of urban sustainability, based on examples of cities that lead this global movement.

Thus, the bibliographic methodology adopted allows a detailed and systematic study of the factors that promote sustainability in contemporary cities, providing a solid basis for reflection on the advances and gaps of Foz do Iguaçu on the path towards its transformation into a sustainable and smart city.

RESULT AND DISCUSSION

The comparative analysis between Foz do Iguaçu and the cities of Curitiba, Sydney, Osaka, Geneva and Paris reveals both positive points and challenges for Foz to approach the status of sustainable and smart city. By exploring the characteristics that make these cities global examples, it is possible to identify aspects that are already present in Foz do Iguaçu, as well as areas in which the city needs to advance significantly to achieve higher levels of sustainability and urban innovation.

One of the strengths of Foz do Iguaçu is its dependence on renewable energy, mainly due to the Itaipu Hydroelectric Power Plant. This infrastructure places the city in a privileged position when it comes to the production of clean energy, one of the fundamental

pillars of any sustainable city. However, cities such as Sydney and Geneva have diversified their energy matrices with the use of alternative sources, such as solar and wind. Foz do Iguaçu is still strongly focused on hydroelectric energy, which, although sustainable, does not explore the full potential of complementary sources, such as solar energy, which could be a viable alternative, given the high incidence of solar radiation in the region.

In terms of urban mobility, Foz do Iguaçu has made progress, especially with the creation of bike lanes and the encouragement of public transport. However, when compared to cities like Curitiba and Paris, which have highly efficient and sustainable public transport systems, such as the BRT (Bus Rapid Transit) and the electrification of their bus fleets, Foz still faces significant challenges. Local public transport still needs further modernization, both in terms of infrastructure and frequency and coverage, to match more advanced models. In addition, policies to encourage the use of bicycles, as in Paris, could be more aggressive, encouraging the use of non-polluting transport in the urban center.

With regard to solid waste management, Foz do Iguaçu still has limitations that need to be addressed. While cities like Osaka and Curitiba are examples of innovation in recycling and reuse of materials, Foz still needs to improve its selective collection and waste treatment practices. Curitiba, for example, has implemented programs that integrate garbage collection with social incentives, such as Lixo *que Não é Lixo*, an initiative that could be replicated in Foz, especially considering the social inequalities present in the city. The issue of green areas is another point of emphasis. Foz do Iguaçu has the presence of the Iguaçu National Park, a natural heritage of immense value, which places the city at a high level with regard to environmental preservation. However, when compared to Curitiba, which has an extensive network of urban parks integrated into city planning, Foz still lacks greater integration between its green spaces and the urban fabric. In addition, the accessibility of these natural areas needs to be rethought so that citizens can enjoy them in a more inclusive and sustainable way.

In the field of technology and innovation, Foz do Iguaçu still lags behind cities like Osaka, which stands out as a smart city, using smart grids and urban monitoring technologies to optimize resources and increase energy efficiency. Although Foz has initiatives related to the use of urban technologies, such as traffic monitoring, there is still a long way to go to implement integrated technological solutions that make the city smarter and more efficient. Cities like Osaka offer important lessons for Foz on how to use technology to improve governance, optimize urban infrastructure, and promote resilience against natural disasters, something especially relevant given climate change.

Social inclusion is an aspect that cannot be neglected in any debate on sustainability. Geneva, with its strong emphasis on inclusive governance, has urban policies that ensure access to essential services for the entire population, something that Foz do Iguaçu still needs to improve. The social inequality present in the city is reflected in the difference in access to basic services and infrastructure, a challenge that needs to be solved so that the city can achieve higher levels of social and environmental sustainability. The analysis of the results shows that Foz do Iguaçu has great potential to advance towards the title of sustainable city, but still faces significant challenges in terms of urban planning, mobility, technology and social inclusion. The exemplary practices of the cities analyzed, such as Curitiba, Sydney, Osaka, Geneva and Paris, serve as models for Foz to develop a more integrated and strategic vision in relation to its future. Taking advantage of the abundant natural resources and energy infrastructure already in place, while drawing inspiration from the innovative solutions of these cities, can guide Foz do Iguaçu towards sustainability and urban intelligence, but this process will require a greater commitment to governance and social innovation.

For Foz do Iguaçu to move towards sustainability, it is crucial to adopt practices based on successful examples from other cities. The integration of mobility, energy, technology and social inclusion solutions has already proven to be effective in cities such as Curitiba and Paris. Studies show that sustainable urban planning requires not only a technical approach, but also a strategic vision that involves community participation and social equity (Sachs, 2015). Thus, it is necessary for Foz do Iguaçu to broaden its scope of action, incorporating public policies that not only promote economic growth, but also prioritize the inclusion of all citizens, as seen in Geneva, where equitable urban governance has been fundamental to the city's sustainable success (Baker, 2020).

In the field of energy, Foz do Iguaçu already has an important advantage, but the diversification of renewable energy sources, as is the case in Sydney, is essential to reduce dependence on a single energy matrix and increase the city's resilience in the face of environmental crises (Newman, Beatley & Boyer, 2017). The use of solar energy, still underexplored in Foz, could be implemented on a larger scale, following the example of cities that combined different renewable sources to ensure greater sustainability in the long term. In addition, energy efficiency initiatives, such as the smart grids used in Osaka, could be adapted for Foz do Iguaçu, increasing the city's ability to manage its energy resources in a more efficient and integrated way (Pomeroy, 2018). With regard to mobility, Curitiba's experience with the BRT system is widely recognized as a solution that combines efficiency and sustainability with public transport (Rabinovitch, 1996). This model could be expanded

in Foz do Iguaçu, complementing recent efforts in the construction of bike lanes and the improvement of public transport, aiming to reduce carbon emissions and improve the quality of life of the population. Paris' experience with the electrification of public transport vehicles also offers an important lesson for the city, encouraging the use of cleaner and more efficient transport alternatives (Rosenzweig, Solecki, Hammer & Mehrotra, 2018).

In addition, solid waste management is another aspect in which Foz do Iguaçu can benefit from observing successful examples, such as Osaka, which invested heavily in recycling and waste reduction technologies (Pomeroy, 2018). The implementation of selective collection and recycling policies, such as those implemented in Curitiba, can be expanded in Foz do Iguaçu, promoting a circular economy and reducing the city's environmental impact. This also requires a cultural change, with the population's awareness of the importance of correct disposal and reuse of materials, something that was essential for Curitiba's success in this field (Rabinovitch, 1996).

Finally, social inclusion, a fundamental dimension of sustainability, needs to be more strongly considered in urban policies in Foz do Iguaçu. As Baker (2020) points out, a truly sustainable city is one that offers equal opportunities and accessibility to all citizens, regardless of their socioeconomic condition. Geneva stands out in this regard, with policies that aim to ensure that the benefits of sustainable development are shared equitably among all inhabitants. In Foz do Iguaçu, this approach could be reinforced through public policies that ensure greater access to essential services, such as transportation and education, in more vulnerable areas.

In short, the analysis demonstrates that, for Foz do Iguaçu to achieve the status of a sustainable and smart city, a coordinated effort on several fronts is needed. By learning from cities that are already leading this process, such as Curitiba, Sydney, Osaka, Geneva and Paris, Foz can adopt innovative practices and integrated policies that allow for sustainable growth. At the same time, the city must invest in its governance, to ensure that these changes are inclusive and improve the quality of life for all its inhabitants. Only with a collective commitment and solid public policies, Foz do Iguaçu will be able to become a reference in urban sustainability in Latin America. When deepening the comparative analysis between Foz do Iguaçu, Curitiba and some of the smartest cities in the world, several differences and similarities emerge with regard to sustainability and the implementation of urban technologies. The main points of comparison between these cities are highlighted below, always based on data and concepts of urban sustainability present in the literature.

SUSTAINABLE URBAN MOBILITY

Curitiba stands out worldwide for its innovative public transport system, the BRT, which contributes to the reduction of carbon emissions and improves the mobility of citizens. According to Rabinovitch, the Curitiba model has served as an example for several cities around the world, demonstrating that efficient public transport is essential for urban sustainability. In Foz do Iguaçu, although there is a recent effort to expand bike lanes and improve public transport, the system is still not comparable to that of Curitiba. Cities such as Paris and Copenhagen, recognized for their extensive sustainable public transport systems and their policies to encourage the use of bicycles, could serve as a model for Foz do Iguaçu to expand its urban mobility options (Rosenzweig et al.).

SOLID WASTE MANAGEMENT

Curitiba is also a reference in terms of solid waste management, with programs such as "Garbage that is Not Garbage", which involves the population in recycling and selective collection practices. Curitiba's approach aims not only at environmental sustainability, but also at social inclusion, generating income for waste pickers' cooperatives and raising awareness among the population (Rabinovitch). In comparison, Foz do Iguaçu still has waste management with challenges to be overcome, such as the low recycling rate and the need to improve the selective collection infrastructure. Cities like Osaka, which have implemented advanced recycling and waste management technologies, offer important lessons about the need to invest in efficient systems and innovative technologies to mitigate environmental impact (Pomeroy).

USE OF SMART TECHNOLOGIES

In the field of smart cities, Foz do Iguaçu is still in an early development phase. The city has urban monitoring initiatives, such as surveillance systems and traffic control, but it does not reach the level of cities like Osaka, which uses smart grids to optimize energy consumption and improve the efficiency of public services (Pomeroy). According to Newman, Beatley and Boyer, the implementation of urban technologies is crucial to reduce waste and increase energy efficiency in cities. While Curitiba also does not reach the technological level of the smartest cities in the world, such as Barcelona and Tokyo, the capital of Paraná has invested in smart city initiatives that integrate transport, health and safety data, creating a more efficient and interconnected service network. This type of technological innovation can be fundamental for Foz do Iguaçu to advance on the path of urban sustainability.

RENEWABLE ENERGY AND ENERGY EFFICIENCY

Foz do Iguaçu has a notable advantage in relation to the production of renewable energy, since it is home to the Itaipu Hydroelectric Power Plant, the largest generator of clean energy in the world by volume. This characteristic is a great differential in terms of energy sustainability, placing the city in a position of global prominence. On the other hand, cities such as Sydney and Geneva complement their energy matrices with sources such as solar and wind energy, demonstrating the importance of diversifying renewable energy sources (Newman et al.). While the Itaipu hydroelectric plant offers a solid foundation, Foz do Iguaçu can still expand the use of other clean energy sources, such as solar, which would increase its resilience to potential energy crises.

GREEN AREAS AND ENVIRONMENTAL PRESERVATION

Foz do Iguaçu has an enormous natural heritage with the Iguaçu National Park and the Iguaçu Falls, one of the biggest tourist and environmental attractions in the country. However, when compared to cities like Curitiba, which integrate green areas into the urban environment in a planned way, Foz can still advance in the creation of accessible green spaces for the entire population (Rabinovitch). Curitiba is recognized for its urban planning that prioritizes the presence of parks and preservation areas within the city, promoting the well-being of citizens and environmental protection. Cities such as Copenhagen, recognized worldwide for the integration of green areas and bike paths, show that access to natural spaces within the urban environment is crucial for sustainable development (Rosenzweig et al.).

SOCIAL INCLUSION AND GOVERNANCE

Geneva and Curitiba are examples of cities that treat social inclusion as a central part of their sustainability strategy. According to Baker, inclusive governance, which promotes equal access to basic services, is essential for the development of a sustainable city. In Curitiba, for example, initiatives that link the environment to social inclusion, such as the exchange of recyclables for food in needy communities, serve as a model for other cities. Foz do Iguaçu, despite its advances, still needs to improve its social inclusion policies, especially in vulnerable areas. A key challenge is to ensure that the benefits of sustainability are accessible to all sections of the population. Lessons learned from cities like Geneva, where social equity is at the center of public policies, can guide Foz in the development of a more inclusive and socially just governance.

CULTURAL AND EDUCATIONAL CHALLENGES

Ultimately, any city's success in achieving sustainability and becoming smarter depends largely on citizen awareness and participation. Cities such as Copenhagen and Paris have invested heavily in environmental education and cultural initiatives that involve the population in sustainable practices (Rosenzweig et al.). Curitiba also has a history of mobilizing the population for sustainability through awareness campaigns on recycling and public transportation.

In Foz do Iguaçu, despite the relevance of preserving the environment due to the Iguaçu National Park, there is still much to be done in terms of environmental education. It is necessary to intensify awareness campaigns that involve citizens in sustainable practices, promoting a cultural change that sustains technical and political advances towards sustainability. Based on these points of comparison, Foz do Iguaçu has enormous potential to grow as a sustainable and smart city, but it still needs to adopt more robust measures, taking advantage of the lessons of cities such as Curitiba, Sydney, Osaka and Geneva to overcome its challenges and move towards more efficient, inclusive and technological urban governance.

CONCLUSION

The comparative analysis between Foz do Iguaçu, Curitiba and some of the smartest and most sustainable cities in the world shows that, although Foz do Iguaçu has some natural and structural advantages, such as the presence of the Itaipu Dam and the Iguaçu National Park, the city still faces several challenges to achieve a high level of sustainability and urban innovation.

The city needs to invest in integrated mobility solutions, such as more efficient public transport systems and clean transport alternatives, following successful examples from Curitiba and international cities such as Paris. Solid waste management also requires significant improvements, both in terms of infrastructure and environmental education of the population, so that recycling and the circular economy can be more widely adopted.

The use of smart technologies in Foz do Iguaçu is still in its early stages. However, the adoption of technologies aimed at energy efficiency, urban monitoring and resource management, inspired by cities such as Osaka and Sydney, can transform the city into a model of urban innovation. The diversification of the energy matrix, taking advantage of the potential of solar energy, is also an area of great opportunity for the city. Another crucial point is social inclusion, which needs to be more integrated into the urban policies of Foz do Iguaçu. The development of a sustainable city cannot be separated from social equity, and

policies aimed at ensuring access to essential services in an inclusive and fair manner are essential.

Foz do Iguaçu has great potential to consolidate itself as a sustainable and smart city, but this depends on more integrated and innovative urban planning, public policies that promote social inclusion, and the adoption of advanced technologies. With a coordinated effort between the government, the private sector and civil society, the city will be able to follow in the footsteps of great global examples and make significant progress towards sustainability. For Foz do Iguaçu to advance on the path of sustainability, a continuous commitment to the development of long-term public policies will be necessary. The city already has some solid foundations, such as its clean energy infrastructure and its natural potential, but it is essential to broaden horizons and adopt more effective practices in the areas of mobility, waste management, use of technologies and social inclusion.

Governance will be a determining factor in this process, because only with an efficient public administration, which involves multiple actors – such as government, the private sector, non-governmental organizations and the community itself – will it be possible to implement the necessary changes. Environmental education also plays a vital role. In order for sustainability not to be limited to government projects or isolated initiatives, it is essential that the population feels part of the process and adopts sustainable habits in their daily lives. In addition, Foz do Iguaçu must look to the future and prepare to face global challenges, such as climate change, which already impact several cities around the world. Implementing urban resilience systems, which prepare the city for extreme weather events, should be a priority. The use of smart technologies and the modernization of urban infrastructure will also contribute to the city functioning more efficiently, reducing waste and increasing the quality of life of its citizens.

Finally, it is necessary to remember that the process of transforming a city into a model of sustainability and urban intelligence is not immediate. It is a gradual path, which requires constant innovation, adaptation to new realities and a firm commitment to sustainable development. By drawing inspiration from the successful experiences of cities such as Curitiba, Osaka, Sydney, and others, Foz do Iguaçu has the opportunity to become a benchmark in sustainability in Latin America, serving as an example of how the balance between the environment, technology, and social well-being can be achieved.

FINAL CONSIDERATIONS

In the final considerations of this study, it is clear that Foz do Iguaçu has great potential to become a sustainable and smart city, but it also faces significant challenges in

key areas such as urban mobility, waste management, use of technologies and social inclusion. Comparisons with cities such as Curitiba, Osaka, Sydney, Geneva and Paris show that sustainability is not a single path, but an ongoing process that requires an integrated and multidimensional approach.

Foz do Iguaçu already has natural and structural advantages that can be leveraged, such as the presence of one of the largest hydroelectric plants in the world and its vast environmental heritage. However, to reach a new level, the city needs bolder public policies that prioritize both technological innovation and social equity. Urban planning must be conducted in an inclusive and participatory manner, involving all sectors of society in the search for sustainable and intelligent solutions. From the lessons learned from the cities analyzed, Foz do Iguaçu can adopt strategies that have already proven successful in other locations, adapting them to its reality. This includes everything from the modernization of public transport systems and the expansion of green areas to the adoption of smart technologies that optimize the use of resources. In addition, environmental education must be strengthened to engage the population and ensure that sustainable practices are part of the local culture.

Finally, the prospects for the sustainable development of Foz do Iguaçu are promising, as long as the city invests in solid governance, innovative policies, and the promotion of economic development that is compatible with the preservation of the environment and social well-being. Only in this way will the city be able to not only preserve its rich natural heritage, but also stand out as an example of a sustainable and smart city on the global stage.

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