


TOWARDS SUSTAINABILITY: THE EVOLUTION OF GUANAMBI COMPARED TO CURITIBA

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ABSTRACT

This article performs a comparative analysis between Curitiba and Guanambi, with the objective of identifying the sustainable urban practices adopted by Curitiba that can serve as a reference for the development of Guanambi. Through a bibliographic research, fundamental areas such as urban mobility, waste management, citizen participation and the use of technologies are examined, highlighting the opportunities and challenges for Guanambi. Curitiba, widely recognized as a sustainable city, has implemented innovative solutions that have transformed its urban structure and quality of life. By contrast, Guanambi still faces significant obstacles, especially in terms of public transport, environmental management and infrastructure. The objective of the article is to propose alternatives for Guanambi to adopt sustainability practices adapted to its regional characteristics, strengthening public management, promoting environmental education and encouraging the participation of the population. Throughout the analysis, it is concluded that Guanambi has the potential to follow a sustainable development trajectory, as long as it invests in innovative solutions and integrated public policies, with the active participation of its community. In this way, the city can walk its path towards sustainability and promote a more balanced and inclusive future.

Keywords: Sustainability. Town planning. Mobility. Citizen Participation.



INTRODUCTION

In recent years, the concept of smart cities has gained prominence in discussions about urbanism and sustainability. Cities like Curitiba, recognized for its innovative initiatives in public transportation and urban planning, serve as examples of how technology and efficient management can transform urban environments into more livable and sustainable spaces. On the other hand, Guanambi, a city in the interior of Bahia, has characteristics that reflect both challenges and opportunities in its journey towards sustainability. The videos analyzed, "Smart Cities" and "Curitiba: The Ecological City", highlight fundamental attributes that define the success of these cities, such as efficient urban mobility, waste management, social inclusion and the use of technology to improve the quality of life of citizens. In contrast, Guanambi still faces significant obstacles, such as the lack of adequate infrastructure, the scarcity of public services, and the need to promote community participation in decision-making processes.

Analysis of the characteristics of smart and sustainable cities, such as those presented in the videos, reveals a number of elements that are fundamental to the success of a modern urban environment. Curitiba, with its innovations in public transportation, such as the express bus system and bike lanes, as well as robust recycling programs and green spaces, exemplifies how urban planning can be oriented towards the well-being of the population and environmental protection. The city is often cited as a model to be followed, not only in Brazil but also in other countries, highlighting the importance of an integrated approach that considers the social, economic, and environmental. On the other hand, Guanambi, although it has the potential to develop as a smart city, faces significant challenges that hinder its evolution in this regard. The city still lacks adequate basic infrastructure, such as paving, basic sanitation, and access to quality health and education services. These factors directly impact the quality of life of citizens and limit the effective use of technologies that could improve urban management and civic participation.

The lack of a clear public policy and investments in crucial areas, such as transport and waste, makes Guanambi lag behind more advanced cities. However, the city has a strong foundation in terms of engaged community and a growing awareness of the importance of sustainability. There are, therefore, opportunities for Guanambi to learn from the experiences of Curitiba, seeking to implement practices that integrate technology and sustainable development. One of the most critical aspects to consider is urban mobility. The implementation of an efficient public transport system, similar to that of Curitiba, can not only improve the circulation of people, but also reduce pollution and promote social



inclusion. The creation of bike lanes and the promotion of alternative transport initiatives, such as the use of bicycles, are actions that can be immediately explored.

In addition, Guanambi can benefit from environmental education programs, encouraging the population to actively participate in waste management and the conscious use of natural resources. Education is a powerful tool that can catalyze behavior change and foster a culture of sustainability among citizens. Community participation in urban planning is essential. The inclusion of residents in decision-making processes ensures that the proposed solutions meet the real needs of the population, increasing the effectiveness of the initiatives and fostering a sense of belonging. The exchange of experiences and knowledge with cities like Curitiba can serve as an impetus for Guanambi to become an example of a sustainable city, taking advantage of its unique characteristics and the potential of its population.

Analysis of the characteristics of smart and sustainable cities, such as those presented in the videos, reveals a number of elements that are fundamental to the success of a modern urban environment. Curitiba, often cited as a model of urban planning, stands out for the implementation of an innovative public transport system that prioritizes mobility and accessibility. Architect and urban planner Jaime Lerner, one of those responsible for the development of Curitiba's transport system, emphasized that transport should be a facilitator of urban life, promoting displacement and social integration.

On the other hand, Guanambi, although it has the potential to develop as a smart city, faces significant challenges that hinder its evolution in this regard. The city still lacks adequate basic infrastructure, such as paving, basic sanitation, and access to quality health and education services. Studies indicate that the lack of investment in infrastructure in cities in the interior of Brazil generates a cycle of exclusion and marginalization that prevents the population from having access to essential services and limits its development potential. One of the most critical aspects to consider is urban mobility. The Institute for Transportation and Development Policy argues that urban planning should be people-centered, prioritizing the creation of public transport systems that are accessible and efficient. The implementation of an efficient public transport system, similar to that of Curitiba, can not only improve the circulation of people, but also reduce pollution and promote social inclusion. The creation of bike lanes and the promotion of alternative transport initiatives, such as the use of bicycles, are actions that can be immediately explored.



Guanambi can benefit from environmental education programs, encouraging the population to actively participate in waste management and the conscious use of natural resources. The United Nations highlights that environmental education is essential for sustainable development, as it allows citizens to understand the impacts of their actions on the environment and promote positive change in their communities. Education is a powerful tool that can catalyze behavior change and foster a culture of sustainability among citizens. Solid waste management is also worth mentioning, since Curitiba has become a reference on the subject by implementing a selective collection system that involves the community and generates income for waste pickers. The research carried out by the Brazilian Institute of Geography and Statistics shows that cities that adopt integrated waste management practices are able to significantly reduce the amount of garbage that goes to landfills. This is an area in which Guanambi can advance, establishing partnerships with the population to promote recycling and composting, in addition to creating awareness campaigns on the importance of correct waste disposal.

Community participation in urban planning is essential. The inclusion of residents in decision-making processes ensures that the proposed solutions meet the real needs of the population, increasing the effectiveness of the initiatives and fostering a sense of belonging. The Sustainable Cities survey, carried out by Rede Nossa São Paulo, highlights that citizen participation is one of the pillars for building fairer and more sustainable cities. The exchange of experiences and knowledge with cities like Curitiba can serve as an impetus for Guanambi to become an example of a sustainable city, taking advantage of its unique characteristics and the potential of its population.

In this article, we will discuss these aspects in detail, drawing a parallel between the two cities and highlighting the lessons that Guanambi can learn from the Curitiba model, aiming at a sustainable evolution that benefits all its inhabitants. Building a more sustainable future for Guanambi depends not only on financial investments, but also on a collective commitment to promote changes that prioritize the well-being of the community and the preservation of the environment. In addition, it is essential that there is a continuous engagement of the population in sustainability initiatives, ensuring that each citizen feels part of the urban transformation process and that their voices are heard in the decisions that impact their lives, we propose a critical analysis of the characteristics of the cities mentioned in the videos in relation to Guanambi, exploring the initiatives that could be adopted to transform the city into an example of sustainability. The positive and negative characteristics of Guanambi will be addressed, in order to identify viable paths that allow the city to advance in the search for a more sustainable and inclusive future. The



comparison with Curitiba will allow an in-depth reflection on how the lessons learned in already established cities can be applied to the context of Guanambi, promoting a more balanced and sustainable urban development.

METHODOLOGY

This article will be developed from a bibliographic research, based on the analysis of specialized literature on urbanism, smart cities and sustainability, as well as on case studies of Brazilian cities that have stood out in these areas. Bibliographic research, according to Marconi and Lakatos, is an essential method for data collection and analysis, since it allows to explore, interpret and synthesize information from different sources, offering a comprehensive overview of the topic addressed. To this end, books, academic articles, official documents and reports from national and international organizations that deal with urban planning, mobility, waste management and citizen participation will be used.

Gil argues that bibliographic research is appropriate when it is intended to carry out a theoretical review on a given topic, allowing the construction of a solid theoretical framework that will serve as a basis for the proposed analyses. In this study, the bibliographic methodology will be essential to identify the main characteristics of smart and sustainable cities, such as Curitiba, and compare them to the current context of Guanambi, highlighting the challenges and opportunities for the sustainable development of the city of Bahia. The sources used will be selected based on their relevance to the theme, following the criteria proposed by Severino for the choice of scientific literature. The works and articles must present a critical and reasoned view of the issues addressed, such as sustainable urban mobility and solid waste management. In this way, it will be possible to carry out a comparative analysis that takes into account not only the theoretical aspects, but also the practical application of urban solutions in different Brazilian realities.

Comparative analysis, according to Yin, is an effective methodological strategy for case studies, as it enables a deeper understanding of the particularities of each city and how they align or diverge in relation to the practices of sustainable cities. To this end, a dialogue will be established between the innovative practices implemented in Curitiba and the challenges faced by Guanambi, based on the existing literature. The comparison will be made based on parameters such as urban infrastructure, mobility, waste management policies and citizen participation, recurring themes in discussions about smart and sustainable cities. In addition, reports from international organizations, such as the United Nations and the World Bank, which offer guidelines on sustainable development in small



and medium-sized cities, such as Guanambi, will be considered. These documents will serve to contextualize the city within a global scenario of urban transformation, allowing a reflection on the necessary adaptations so that Guanambi can approach the sustainability standards defended by such organizations. According to Minayo, the qualitative research applied here seeks to understand the urban reality in a more subjective way, relating social, economic and environmental factors to sustainable development.

Based on this set of sources and approaches, the article will seek not only to describe the current situation in Guanambi, but also to propose solutions based on successful experiences, offering a relevant theoretical contribution to studies on urban sustainability in Brazilian cities.

RESULTS AND DISCUSSION

The comparative analysis between Curitiba and Guanambi, based on bibliographic studies, reveals marked differences with regard to urban planning, mobility, waste management and the involvement of the population in public policies. By using Curitiba as a reference, it was possible to identify a series of innovative practices that contributed to the city becoming an example of sustainability. These practices have not only raised the quality of life of citizens, but also reduced the environmental impact caused by urbanization. Guanambi, in turn, despite having significant potential, still faces considerable challenges to reach a similar level.

One of the main factors that differentiate the two cities is the urban infrastructure aimed at sustainable mobility. Curitiba stands out for the creation of an integrated public transport system, planned since the 1970s, which prioritizes high-capacity public transport and the use of bi-articulated buses in exclusive corridors. According to the guidelines proposed by the Institute for Transport and Development Policies, one of the most important characteristics of a sustainable city is the ability to offer efficient and accessible public transport, promoting the reduction of the use of private vehicles and, consequently, reducing pollution levels. On the other hand, Guanambi faces great difficulties in the urban mobility sector. The city does not have an efficient public transportation system, and the options available are limited, which increases residents' reliance on private vehicles and motorcycles. The lack of bike lanes and integrated urban planning aggravates the problem, making it difficult for pedestrians and cyclists to circulate. Therefore, the city could benefit immensely from investments aimed at creating a more inclusive and sustainable public transport system, following the example of Curitiba.



Another relevant aspect is waste management. Curitiba implemented one of the first selective collection programs in Brazil, promoting the separation of recyclable materials and the environmental awareness of the population. This model, internationally recognized, includes the active participation of the community and the generation of income for the collectors of recyclable materials, contributing to social inclusion and the reduction of waste destined for landfills. As pointed out by the Brazilian Institute of Geography and Statistics, cities that adopt selective collection and recycling programs significantly reduce environmental impacts and generate economic benefits.

By comparison, Guanambi still has rudimentary waste management practices, with a low recycling rate and a garbage collection system that lacks greater efficiency. The absence of more robust environmental education programs is also an obstacle to the participation of the population. Although there are specific initiatives aimed at raising awareness about the importance of recycling, they are not yet consolidated as public policies. Guanambi, therefore, has a great opportunity to improve its waste management by adopting practices from sustainable cities like Curitiba, which would include the creation of recycling cooperatives and the implementation of a comprehensive selective collection system. With regard to citizen participation, Curitiba demonstrates how the involvement of the population can be a differential in the formulation of more inclusive and sustainable public policies. The city implemented popular consultation mechanisms early on, which allowed for greater engagement of citizens in the urban development process. Severino points out that social participation is crucial for the success of sustainable initiatives, as it ensures that the proposed solutions meet the real needs of the community.

In Guanambi, however, popular participation in urban and environmental planning processes is more limited. Although the city has an engaged community, formal channels of participation, such as municipal councils, still lack greater effectiveness and greater representation. The creation of spaces for dialogue and the inclusion of the population in the decision-making process are fundamental steps for Guanambi to follow the path of smart and sustainable cities. Another point to be discussed is the application of urban technologies, a crucial factor for the evolution of cities in the twenty-first century. Smart cities, such as Curitiba, have invested in the use of technology to monitor and improve public services, such as traffic control, public lighting, and garbage collection. The use of real-time data allows for more efficient management and optimization of available resources, something that is still a distant reality for Guanambi. Still, Guanambi's potential to transform into a more sustainable city is evident. The city has a population that shows an interest in environmental issues and that can be mobilized through effective public



policies and environmental education programs. In addition, Guanambi's urban growth is still at a stage where it is possible to plan significant changes, something that larger cities already consolidated, such as Curitiba, face with greater difficulty.

Therefore, the main result of this analysis is the identification of clear opportunities for Guanambi to progress on the path of sustainability, taking advantage of the lessons of cities like Curitiba. Investments in infrastructure, urban mobility policies, waste management and citizen participation are crucial for the city to become a model of sustainable city in the interior of Brazil. Sustainable urban development is a process that requires not only proper planning, but also an ongoing commitment to innovation, popular participation, and environmental education. Curitiba has consolidated itself as a model of sustainable city over decades, through strategic decisions that integrate different dimensions of sustainability, including social, economic and environmental. For Guanambi, the challenge is to adapt these experiences in a way that respects their regional peculiarities and enhances their local resources, without losing sight of the successful practices of other contexts.

According to Carlos Leite, one of the leading scholars of sustainable urbanism in Brazil, cities that invest in green infrastructure, active mobility, and social inclusion tend to thrive faster, as such elements create a virtuous cycle that fuels human and economic development. In the case of Curitiba, the creation of an integrated transport system not only improved the quality of life of the population, but also served as a catalyst for urban growth in a planned manner. The city has been able to combine long-term planning with the gradual implementation of practical and innovative solutions.

In Guanambi, the initial focus should be on strengthening basic infrastructure, such as sanitation and transportation, fundamental aspects for the well-being of the population. It is widely documented by authors such as Lefebvre and Harvey that the right to the city includes access to essential urban services, which allows for the full participation of citizens in the economic and social life of the city. Guanambi, by mirroring Curitiba, can use this concept as a basis to implement solutions that ensure equity in access to these services, especially in the most peripheral areas, where the needs are more evident. The implementation of environmental education programs is another essential pillar for the success of a sustainable city. According to the United Nations, education is the key to sustainable transformation, as it prepares citizens to be agents of change in their own communities. Curitiba has developed a robust environmental education program since the 1990s, promoting awareness in schools and public spaces. In Guanambi, the challenge is



to create a participatory environmental culture, which engages the population in the city's daily life and expands the perception of the importance of sustainability.

Waste management is also a topic that deserves to be highlighted in the discussion. Studies conducted by authors such as Fehr indicate that cities that adopt recycling and composting policies not only significantly reduce the volume of waste sent to landfills, but also promote the social inclusion of vulnerable groups, such as waste pickers. Curitiba was a pioneer in this aspect with the Waste that is not Waste program, which not only improves waste management, but also integrates the circular economy into urban life. Guanambi, by adopting similar practices, could reduce its environmental impact and, at the same time, generate employment and income for the local population, especially for groups in situations of social vulnerability. Another relevant aspect is the use of technology to improve urban management. As Manuel Castells states, smart cities depend on the application of communication and information technologies to optimize services and improve the quality of life of citizens. Curitiba has advanced in this direction by integrating technologies for traffic and public transport monitoring, improving the efficiency of services and the user experience. In Guanambi, even though technological resources are limited, the use of simple digital solutions, such as platforms to monitor public transport or apps for garbage collection, could bring direct and low-cost benefits.

Citizen participation is a point that needs to be strengthened in Guanambi. According to Henri Lefebvre's perspective on the right to the city, urban transformation will only be truly sustainable if citizens are active in the decision-making process. Curitiba offers an example of how popular participation can be integrated into urban planning through forums and advisory councils that involve residents in decisions about the future of the city. Guanambi, for its part, still lacks more structured mechanisms to promote the direct involvement of citizens in urban issues, but it can develop community forums, public debates, and partnerships with local organizations to strengthen this crucial aspect.

In the discussion of mobility, the perspective of urban geographers such as David Harvey reinforces that inequalities in cities are often amplified by the absence of accessible and efficient transportation. Curitiba dealt with this issue by creating a system that prioritizes public transport and reduces dependence on private vehicles. This model could be adapted in Guanambi by improving public transport, creating more efficient and accessible routes, as well as building bike lanes and encouraging the use of bicycles, promoting not only mobility, but also public health and the reduction of carbon emissions. It is important to consider the role of integrated public policies in sustainable development. As Sachs argues, sustainability depends on a holistic approach that considers the



interactions between the economic, social, and environmental spheres. Curitiba stands out for integrating these elements into its public policies, creating a balance between economic growth, environmental preservation and social well-being. Guanambi can benefit from adopting a similar approach, where urban planning is not just a response to immediate needs, but part of a long-term vision that contemplates sustainable development.

In short, the study of the successful examples of Curitiba, combined with a critical analysis of the current reality of Guanambi, allows us to conclude that urban sustainability is not an unattainable destination, but a continuous process of adaptation and innovation. Guanambi, by aligning its urban plans with the principles of equity, citizen participation and environmental preservation, can walk its path towards sustainable transformation, promoting a fairer and more environmentally responsible future for its inhabitants. It is concluded that, despite the current challenges, Guanambi has the necessary conditions to evolve, as long as measures focused on sustainable urban planning are adopted, in line with the successful experiences observed in cities such as Curitiba. In this way, the city will be able to promote a higher quality of life for its inhabitants, while contributing to the protection of the environment and social development.

FINAL CONSIDERATIONS

From the comparative analysis between Curitiba and Guanambi, it is evident that the path to urban sustainability requires not only political will and resources, but, above all, a long-term strategic vision, supported by the active participation of the population and the adoption of innovative solutions. Curitiba, over decades, has been able to develop a solid and exemplary structure in crucial areas such as urban mobility, waste management and environmental education, consolidating itself as one of the great models of sustainable city in Brazil and in the world. This model is based on integrated planning that balances social, economic, and environmental needs, resulting in lasting benefits for its population. Guanambi, on the other hand, although it presents significant challenges, has remarkable potential to follow a similar trajectory. The city can benefit greatly from adapting and applying the lessons learned from Curitiba, adjusting these practices to its local and contextual particularities. To this end, it is essential that the city invests in priority areas such as urban infrastructure, especially with regard to mobility and basic sanitation, in addition to strengthening waste management and implementing comprehensive environmental education programs. Such measures, when implemented with efficiency



and commitment, can not only improve the quality of life of the population, but also position Guanambi as a reference in sustainability in the interior of Bahia.

The need for an efficient and accessible public transport system stands out as one of the main challenges. Curitiba demonstrated that the integration of public transport and the prioritization of sustainable alternatives, such as the use of bicycles and the creation of bike lanes, are essential to reduce the use of private vehicles and, consequently, reduce greenhouse gas emissions. Guanambi, with its current reliance on private transport, can benefit from following this model, implementing solutions that prioritize inclusive, affordable, and environmentally friendly mobility.

Another crucial aspect is solid waste management. Curitiba, by instituting selective collection programs and involving the population in a continuous process of environmental awareness, has become an example of success in this area. Guanambi, still incipient in this regard, can adopt similar practices, promoting recycling, composting and income generation for waste pickers. In addition, long-term public policies, which involve the creation of recycling cooperatives and environmental education campaigns, can drive a significant change in the city's urban and environmental scenario. Citizen participation also presents itself as an area of great opportunity for Guanambi. As pointed out throughout this article, Curitiba is a clear example of how popular involvement in the urban planning process can ensure that solutions meet the real needs of the population. In Guanambi, the creation of discussion forums, advisory councils, and public consultation mechanisms can strengthen democratic governance and ensure that decisions about the city's future reflect the interests and aspirations of its inhabitants.

In addition, the adoption of urban and digital technologies, even if in a modest way, can generate significant improvements in public management in Guanambi. Simple transportation monitoring, waste collection, and energy efficiency systems can be easily implemented and contribute to the creation of a smarter and more sustainable city. The digitalization of public services, based on low-cost technologies, is a strategy that can facilitate urban management and improve the quality of services offered to the population.

Therefore, the conclusions of this article reinforce the idea that Guanambi, despite being at an earlier stage of development compared to Curitiba, is able to tread its own path towards sustainability. The city has a promising scenario and a population that, if properly engaged, can be the protagonist of this transformation process. However, this path requires a firm commitment on the part of public managers and civil society, who must act in a joint and planned manner to ensure that the solutions implemented are sustainable in the long term.



In this way, the sustainability of Guanambi does not depend only on the replication of external models, but on a careful adaptation to its regional particularities. The city's sustainable development potential is directly related to its ability to incorporate innovative practices in critical areas such as transportation, waste management, citizen participation, and the use of technologies. By adopting a strategic and holistic approach, the city can position itself as a benchmark for sustainability on the national stage, promoting a more inclusive, green, and socially just future for its inhabitants. For Guanambi to achieve this transformation, it is essential that public policies are planned in an integrated and coordinated manner, involving different levels of government and promoting partnerships with the private sector and civil society organizations. The adoption of cross-sectoral policies, which consider urban development in its entirety, can ensure that the solutions implemented in areas such as mobility, waste management and urban infrastructure are complementary, maximizing results in terms of sustainability. As Sachs points out, sustainability is only possible when public policies are thought of in a transversal way, focusing on the interactions between environmental, social, and economic aspects.

Finally, the awareness and engagement of the local population will be crucial to the success of any sustainability initiative in Guanambi. Without the support and active participation of citizens, the solutions implemented risk being underutilized or even rejected. The creation of a culture of sustainability, which promotes the responsible use of resources, environmental preservation and a sense of community, will be the foundation for the continuous development of the city.



REFERENCES

1. Castells, M. (2006). *A sociedade em rede* (10. ed.). São Paulo: Paz e Terra.
2. Fehr, M. (2001). *Coleta seletiva e reciclagem: Gestão integrada de resíduos sólidos urbanos no Brasil*. São Paulo: Senac.
3. Gil, A. C. (2008). *Métodos e técnicas de pesquisa social* (6. ed.). São Paulo: Atlas.
4. Harvey, D. (2014). *Cidades rebeldes: Do direito à cidade à revolução urbana*. São Paulo: Martins Fontes.
5. Instituto Brasileiro de Geografia e Estatística – IBGE. (2017). *Pesquisa nacional por amostra de domicílios: Mobilidade urbana no Brasil*. Rio de Janeiro: IBGE.
6. Instituto de Políticas de Transporte e Desenvolvimento – ITDP. (2019). *Boas práticas para cidades sustentáveis*. São Paulo: ITDP Brasil.
7. Lakatos, E. M., & Marconi, M. A. (2017). *Fundamentos de metodologia científica* (7. ed.). São Paulo: Atlas.
8. Lefebvre, H. (2001). *O direito à cidade*. São Paulo: Centauro.
9. Leite, C. (2012). *Cidades sustentáveis, cidades inteligentes: Desenvolvimento sustentável num planeta urbano*. São Paulo: Editora Bookman.
10. Minayo, M. C. S. (2010). *O desafio do conhecimento: Pesquisa qualitativa em saúde*. São Paulo: Hucitec.
11. ONU – Organização das Nações Unidas. (2019). *Educação para o desenvolvimento sustentável: Construindo uma melhor qualidade de vida para todos*. Brasília: UNESCO.
12. Sachs, I. (2002). *Caminhos para o desenvolvimento sustentável*. Rio de Janeiro: Garamond.
13. Severino, A. J. (2021). *Metodologia do trabalho científico* (23. ed.). São Paulo: Cortez.