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Jose Manoel Gandara
Department of Tourism, Federal University of Parana

Allan Scott Mills
Urban and Regional Planning - The Wilder School, Virginia Commonwealth University

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Jose Manoel Gandara  
Department of Tourism  
Federal University of Parana  
Curitiba, Brazil

Allan Scott Mills  
Urban and Regional Planning – The Wilder School  
Virginia Commonwealth University  
Richmond, Virginia USA

ABSTRACT
The purpose of this case study was to develop and in-depth understanding of the successful implementation of the Master Plan for the city of Curitiba, Brazil, and to document ways in which plan implementation has had a positive effect on tourism in this Brazilian city. The emphasis on green space, and the way in which the serious problem of flooding in Curitiba was attacked, contributed to the possibilities for increasing the city’s attractiveness for tourists. Three urban renewal innovations provided a major stimulus to tourism in the city: revitalization of the historic downtown area, a unique bus transportation system with dedicated lanes, and an environmental program which greatly increased the number of park and forested areas within the city. The unique ways in which new parks were beautified also adds to their attractiveness for tourists.

INTRODUCTION
Curitiba, Brazil is the capital city of the state of Parana, one of three states comprising the Southern Region of the country. According to the 1991 Brazil census, approximately 75% of Brazil’s population lives in urban areas, mostly in large metropolitan regions such as Curitiba. Historically these urban areas have all had serious environmental problems. In 1970 Curitiba’s environmental condition was unsustainable because its population had almost doubled every 10 years since 1950. This was due to a rural population migration to the cities, associated with labor needs of a national movement to industrialize the cities (Menezes, 1966). At that time in Curitiba’s history, urban planning assumed a strategic role in providing solutions to the environmental pollution, overcrowding, and other serious problems that it was experiencing (Gandara et al., 2008).

Successful implementation of Curitiba’s Master Plan has since improved the quality of life of its residents and has resulted in changing the its image from a city which previously offered few tourist attractions to one which is now popularly labeled the urban ecological capital of Brazil (Ramos et al. 2008). This change occurred due to inclusion of concern for the natural environment in its planning paradigm for a modern urban city.

As in many parts of the world, city plans in Brazil are often created but not implemented – particularly when big changes are called for. The master plan created for Curitiba called for some major changes in the city’s natural environment, its public
transportation system, and its central shopping district. Curitiba serves as an example of how a modern and progressive city plan can be successfully implemented, and the positive consequences of this for tourism in the city.

RESEARCH METHODS

The methodology used for this research was the case study method (Santos, 2004, p. 30), “studying a case example within a restricted research focus, with the objective of developing an in-depth understanding of its characteristic aspects.” Facts of the case were obtained from government documents, several books written about the planning of Curitiba, and interviews with key city planners – all brought together with disparate planning phenomena and normally isolated planning processes to provide an understanding of what made master plan implementation succeed in Curitiba; and also uncovering the probable reasons for why a major consequence of this successful city planning was growth of the tourism sector in Curitiba.

FINDINGS

The findings can be divided into two distinct parts: 1) the way in which Curitiba’s Master Plan was implemented, and 2) the tourism growth which resulted as a consequence of Master Plan implementation.

Curitiba’s Master Plan

The first city plan for Curitiba was completed in 1943, but was not completely implemented. It was a plan contracted from a Brazilian engineering firm by the mayor of Curitiba, Rozaldo de Mello Leitao. The engineering firm hired French urbanist, Algredo Agache, to elaborate the plan. The Agache plano of 1943 consisted of three major parts: 1) sanitation, 2) avenues to alleviate congestion in the center of the city, with a radial beltway around the city, and 3) specialized zones to separate different uses of the city (Ramos, 2008). Curitiba adopted some of Agache’s ideas, mainly those concerned with zoning, but rejected the others (Schwartz, 2004).

Preparation of the Master Plan: Mayor Arzua Pereira, who was elected in 1962, was “...troubled by what he characterized as the ‘urban degeneration’ of the city.” Therefore, as part of his request for a low cost housing office, Pereira requested “…funding for to incorporate a comprehensive analysis of urban development possibilities in the city.” The result was the Preliminary Plan of Urbanism, completed in 1965 by the winner of six firms bidding on the project. It was later revised with the addition of two chapters of action proposals, prepared by professionals from Curitiba who had participated in the analysis. This became known as the Master Plan or Guidelines, because it provided only a general set of guidelines for what needed to be accomplished. The Guidelines were approved in 1966 (Schwartz, 2004, p. 29).

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1 This is an English translation of the following partial sentence from page 30 of Santos’ Portuguese text: “…estudar um caso e selecionar um objeto de pesquisa restrito, com o objective de aprofundar-lhe os aspectos caracteristicos.”
**Key Elements of Plan Implementation:** Several factors contributed to successful implementation of the master plan, known then as the *Guidelines*. There was a military government at the time which favored the plan and provided financial support. An institute for research and planning in Curitiba (IPPUC) was created with the mission of assisting with implementation of the *Guidelines*. One enthusiastic supporter of the *Guidelines* was a technician by the name of Jaime Lerner. Lerner became the mayor of Curitiba from 1979 to 1983, and again from 1989 to 1992 (Schwartz 2009).

An important antecedent impetus behind the way that the Master Plan was implemented was the dramatic collapse of coffee cultivation in the state of Parana. Parana had been the state that was the most important source of coffee in Brazil. This emphasis on coffee production collapsed after several occasional freezes, resulting in increased migration of rural residents to the city and aggravating the urban problems of crowding and traffic congestion. It was the way in which these urban problems were then tackled that provided the basis for the later successful implementation of the Master Plan (Schwartz 2009).

There was concern for Curitiba’s future among the Architecture and Urban Planning faculty of the Federal University of Parana, and a group of professionals with a background in architecture and urban planning had emerged in Curitiba. The work of that group led to the decision to create a huge industrial park, removing Curitiba’s existing industry from the downtown area as well as attracting new industry to the city. A significant degree to which the industrial park had green space was influenced by input from Jaime Lerner and the group of architects and city planners (Schwartz 2009). The industrial park transformed Curitiba’s economy by providing a large and stable industrial base. The result was a sustainable source of funding for implementing important elements of the Master Plan.

The involvement of the local city planners and architects in implementation of the Master Plan was mainly through the establishment and staffing of the IPPUC. Many in this group had been involved in preparing the *Guidelines*, and they remained active in the municipal process from that period in the mid-1960s until Jaime Lerner was named mayor in the 1970s and beyond (Schwartz 2006).

“From the outset, major attention was paid to various private interest groups, informally as well as by their official membership in municipal commissions, and this led to modifications to some of the planners’ proposals (Schwartz 2006, p. 6).” During implementation a marketing effort was also conducted to educate citizens on what was being done, stressing contributions to the quality of life in the city as well as how investors could profit financially. “The result was an extraordinary private response to public initiatives…(Schwartz 2006, p. 5).”

“An (other) important aspect of Curitiba’s success has rested in the city’s accomplishments in infrastructure and the provision of services, even as the population of the city tripled …with respect to the access to electricity, clean water, sewerage and public health facilities. (This was also important to new industry.) The key to
sustainability would seem to have been the attention given to increasing the economic base, inasmuch as it provided most of the funds necessary to enable what the city of Curitiba has succeeded in doing to make itself a more livable community (Schwartz 2006, p.5).”

Planning Innovations and Tourism

Several urban renewal innovations resulting from implementation of the Master Plan provided a stimulus to tourism in the city, in addition to improving the quality of life for city residents. Three of the most important innovations were the revitalization of the historic downtown area, a new and efficient public transportation system, and an environmental program which greatly increased park and forested areas within the city.

Revitalization of Downtown: “One of the first major innovations was the revitalization of historic downtown at a time when that area of most Brazilian cities was in decline. The five most important blocks of Curitiba’s commercial area were transformed – dramatically (in a period of 72 hours) and controversially – into an attractive pedestrian mall, extended since then, and less controversially, to twenty blocks (and copied, in smaller versions in other Brazilian cities). This has been accompanied by the restoration of many historic buildings, (and) the rehabilitation of former industrial and commercial sites for cultural purposes… The result has been to make for a unique urban landscape and to help maintain much of the focus of curitibanos on the city center (Schwartz 2006, p 8).” Instead of turning its back on the downtown area, the orientation of the Master Plan was to revive the city’s center as a place to come to and congregate in, a safe and attractive place for tourists to visit and go shopping.

Public Transportation: One of the main urban renewal objectives of the Master Plan was to do something about the congestion and traffic jams in the city. What was implemented was a modern bus transportation system with one price for all. “Financial and ecological considerations led to a decision against a subway or a light rail system and in favor of bus transportation…(with the) use of dedicated lanes combined with passenger loading platforms and unique vehicle design modifications that were accepted by Brazilian and foreign owned bus producers, and have greatly reduced transport time. .Two dozen bus terminals have been placed at points around the city, dramatically reducing the proportion of those going from one extreme of the city to another who travel through downtown. That has alleviated problems of congestion and has contributed to the preservation of the historic district (Schwartz 2006, p. 7).” There are some express buses, color-coded yellow and used mainly by commuters. There is also a special bus route for tourists which includes many popular city attractions.

Parks and Tourism: The environmental innovations of the Master Plan, particularly the parks, have provided the greatest contribution to increased tourism visitation for Curitiba. Unlike the majority of major metropolitan areas in Brazil, Curitiba is not located on the seacoast. Therefore, the planning vision which was realized was to make the parks of Curitiba as attractive as are the beaches of seacoast cities, for
both the city residents and tourists visiting the city. In addition to the beautification of Curitiba parks, the Master Plan resulted in a large increase in the number of park and forested areas within the city and in the planting of several hundred thousand trees. This has changed the image of Curitiba to its now being known as the “ecological capital” of Brazil.

Both the magnitude of the environmental transformation and the innovative way in which several parks were beautified has made the city parks major tourist attractions. Public parks and forests were expanded more than twenty times in size per capita under the Master Plan. Special attractions within the parks, such as an opera house amphitheatre transforming an abandoned quarry, also help to draw tourists. As many as 350,000 people now visit Curitiba parks on a summer weekend. Attendance figures from 2000 to 2005 show the parks as ranking number one among tourist attractions in Curitiba. One survey showed that 46.5% of Curitiba’s tourists visited the parks in 2003 (Gandara et al. 2008).

These environmental benefits to tourism and to Curitiba residents’ quality of life were actually an indirect effect of the attention given by the municipal administration to the problem of flood control. Former efforts to control flooding consisted of cementing the sides of river beds, which was expensive and did not solve the problem. Master Plan implementation created large runoff areas as man-made lakes in newly established parks. The tree planting mentioned above was also done to help control the amount of runoff resulting from torrential rains. Other flood control efforts were also undertaken to protect river basins in the major metropolitan area (Schwartz 2006).

APPLICATION OF RESULTS

The results of the Curitiba experience have possible implications for planning theory. Schwartz (2004) calls the methods used in implementing the Master Plan the basis for a possible “Theory of Implementation.” Applied applications of the results include being a model for plan implementation in other cities, as well as for marketing Curitiba as an environmentally friendly destination – promoting its image as the ecological capital city.

The case of Curitiba could also be instructive for U.S. cities undertaking urban renewal and seeking similar results. What happened in Curitiba “…was undertaken by a group that had begun, as so many urban renewal planners, with largely aesthetic objectives. However, unlike those in Baltimore, Maryland (and) New Haven, Connecticut, and other metropolitan areas, Curitiba’s urban planners, while seeking to beautify the city, were induced to modify their objectives sufficiently to provide a major new economic thrust (Schwartz 2006).

Agencies in the U.S. federal government responsible for flood control projects, such as the U.S. Army Corps of Engineers, could also benefit from this Curitiba example. Curitiba demonstrates how a flood control project within an urban area can result in new park and forest areas in such a way as to make them tourist attractions as well as contributing to the quality of life of local residents.
CONCLUSIONS

Curitiba has flourished since implementation of the Master Plan. Several factors combined to make possible the sustainable implementation of the plan. Heuristic incrementalism appears to best describe the principal driving force behind successful implementation. Various private interest groups and other influential stakeholders were involved at the outset and the planners were willing to modify their proposals, when necessary, to maintain public support. However, those in charge also apparently recognized when rapid authoritarian actions were necessary, such as the creation of the downtown pedestrian mall in a period of 72 hours - before store owners could react. The key factor in the sustainability of the plan’s implementation appears to be the attention given to first establishing a strong industrial base for the city, through creation of a large industrial park on the outskirts of the city – moving all existing industry to the park and creating sufficient infrastructure to attract new industry.

The original environmental vision for the city has been realized through substantial additions to city park and forest areas. In addition to increasing the quality of life for city residents, this environmental emphasis on city parks and forests appears to be the major factor increasing tourist visitation to the city. However, the revitalization of the downtown area, and the establishment of a world-class public transportation system that includes a special tourist route, also enhances the tourism attractiveness of the city.

REFERENCES


**Contact information:**

Dr. Allan S. Mills  
Room 1049 Oliver Hall, Box 842020  
Virginia Commonwealth University  
Richmond, VA 23284-2020  
(804) 827-9346 voice  
(804) 828-1946 fax  
ASMILLS@VCU.EDU

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