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A Smart Rural Project for Tourism of Madeira Island

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Abstract. Everywhere, there are cities, regions and countries which are struggling in order to reach a good position in terms of attractiveness, whether to catch more inhabitants or to get more visitants. All-over the world, cities like Bangkok in Thailand, Dubai in the United Arab Emirates or London in the United Kingdom, are witnessing, every year, a process of massive tourism. Many of these touristic places are very well-known as smart cities, because of their people, infrastructures, economy, governance, mobility, environment or simply their smart lifestyle. The rankings focused on the territories' performances are on the top of the agenda at the global scale. On the opposite side of the popularity coin, there are the small places, settled in rural areas, which are struggling to keep the few inhabitants who still remain there, and to attract visitors, as a way of boosting their social and economic dynamics. In this sense, this article is focused on the study of rural areas and tourism, to understand how small local communities in rural areas can use the smart cities knowledge and through tourism promote the economical local development. It will present a project solution for tourism purposes having as case study the tiny rural settlement of *Fajã de Baixo*, near to the Calheta in Madeira island, Portugal. The result shows that small rural settlements have an opportunity in touristic terms, using requirements of smart mobility and environmental solutions, promoting local identity, which is their main tourist attractiveness.

1. Introduction

This paper aims to present an urban design solution for a small settlement, *Fajã de Baixo*, in a rural environment nearby Calheta at Madeira island in the Atlantic sea, which is part of the Portuguese territory. This island is very-well known because of its touristic interest given its lovely landscapes, visited by thousands of tourists every year.

The main goal of the proposed solution is to promote better opportunities based on the tourism to the few inhabitants who still remain there, and at the same time to attract visitors. This place is a small rural settlement faraway for the most visited touristic places of Madeira island. Therefore, this proposal means a way of boosting its social and economic dynamics, promoting a smart mobility and environmental solution through tourism in order to provide the economical local development, preserving the local identity.

The solution includes a smart mobility and environmental proposal, focused on an architectural project for 6 touristic houses, having a pedestrian and cycling path as the urban design landmark, projected along to the sea shore, in order to allow the contact with nature and a view of the Atlantic Ocean.



2. The evolution of rural areas

2.1. Vanishing of ancient practices

Nowadays rural territories are going through a period of changings and transformations in terms of their social, economic, functional, territorial and identity structures. This transition involves the introduction of new dynamics and opportunities such as tourism and leisure activities, and also the revitalization of agriculture and other traditional activities. The rural territories are still associated with the idea of a poor and harsh lifestyles based on subsistence agriculture (Figure 1). Thus, these territories have been depreciated when compared to urban regions.

Urban modern people have an idyllic and nostalgic view of the rurality and its lifestyle, a kind of feeling related with the lost paradise, and the idea of experiencing the outside of cities is very appealing to them. They seek these rural areas in order to escape the stress and busy daily tensions and to spend their free time or to conduct leisure activities.

The tourism sector does not escape to this tendency. Through the years, the occupation of rural areas has been based on the needs of farmers to be closed to the crops fields. With the introduction of the industrial activity a process of rural exodus began, with consequences for both the rural and urban territories.

One of the outcomes of the previously referred process was the abandonment of rural territories in seek of better opportunities in the newly industrialized urban centers. The migration of young people to the cities has caused the over-densification and expansion of urban boundaries, intensifying the contrast between urban and rural realms. The rural became abandoned, aged, neglected and disregarded, marking the beginning of the decline of rurality as a way of living. In fragile territories, such as small islands like Madeira in the Atlantic sea, which is part of Portugal, the decline of rurality lead to the abandonment of practices like sheep shearing, this used to be a yearly event reuniting people from all over the island, today the degraded stone corals located in *Paul da Serra* are a vanishing memory of these practices and a part of the rural way of life.



Figure 1. Sheep Shearing Corals, rural area of *Paul da Serra* - Madeira island in Portugal.
Google Earth, 30-09-2010

2.2. Urban sprawl in Madeira island

The rural exodus and the fast-urban growth led to the creation of peri-urban territories characterized by dispersion and disorder of constructions. For urban planning purposes, the difference between urban and rural is clear. The urban space is limited by the urban perimeter, containing built agglomerations, cities, towns or villages, for building or urban development purposes. The rural is for agriculture, forest or natural purposes. If in the past times the rural was focused on agriculture, forest, cattle raising, geological, nature or leisure activities, nowadays with the abandonment of agriculture, the urban sprawl has introduced new dynamics in rural areas, such as in Madeira island. Here, there are a multiplicity of simultaneous situations that makes difficult to separate urban from rural.

Therefore, the boundaries between urban and rural have vanished and there is no longer a strong differentiation between urban and rural (Figure 2). Thus, rural populations have an urban lifestyle.

The first urban development plan for Madeira is from 1997, Master Plan of Funchal (the main city of Madeira island). Until then, there was a weak control of building and urbanization processes. The planning process of rural areas requires solutions to advance their economic and social realms. Tourism can be a pivotal way of achieving these goals, ensuring the sustainability, preservation, identity and sociocultural features of rural areas, maintaining the harmony between locals and tourists.



Figure 2. Urban sprawl to rural areas – *Funchal*, the main city in Madeira island (Portugal).

3. Touristic opportunities

3.1. A sector in development

Tourism is the largest sector of activity worldwide, representing a strategic key in world economy, moving dozens of millions of people every year and it will keep increasing. It is a leisure practice and a phenomenon that characterizes the way of life of contemporary society, has a result of the needs of therapeutic and leisure breaks.

Europe is the largest touristic receptor worldwide. In 2015 it has received about 607 million tourists, more than half of all international tourists.

In Portugal, the tourism profits (in 2015) have reached 11.400 million euros. The main destination is the Algarve (35,1% of the overnight stays), followed by Lisbon (24,9%) and Madeira (13,6%). An awareness and sensitivity with ecology and sustainable practices are coming up at the tourism practices. Because of tensions in Mediterranean Middle East countries, and national campaigns of propaganda, tourists are rethinking their destinations and choosing Portugal (Figure 3).



Figure 3. Tourism campaigns of the Madeira islands destination, [1].

According to the concept of touristic experience, people seek customized events when they are going for touristic activities.

The globalized economy and territories competition promote new touristic products, better services, and diversified niches of products: beach and sun, culture, sports, adventure, religious or rural tourisms [1].

3.2. The use of ICT to promote a smart mobility

The touristic consumer profile is a well-informed, sophisticated and conscious user that has an active part in planning the vacations. The use of information and communication technologies (ICT) is a tool in capturing potential tourists, planning the trip, booking accommodation, buying tickets or seeing maps. Online promotions or digital marketing are pivotal factors to the success, allowing tourists to monitoring their choices.

The smart use of ICT is an essential factor to a region, country, place, establishment or touristic services' success. The marketing of Portugal as touristic destiny is focused on the digital marketing, targeting the specific necessities of each market. This allowed a more flexible and effective promotion of the diversity of the country as tourist destination.

Strategies such as the digital marketing, online features, low-cost companies and new airline routes make part of a diverse set of opportunities explored by the Action Plan for the Development of Tourism in Portugal [2].

3.3. Strategies in rural areas

In the last decades, rural areas have been consolidated as a trend of touristic product. Rural tourism is a complex reality, with several variables, motivations, types of experiences and accommodation categories, which goes beyond territorial features.

In Portugal (considering 2015 national data), rural and housing tourisms had an offer of 1298 accommodations, with about 22.000 beds, 29.9% of the total country offer. The North part of the country has the highest capacity of accommodation of rural tourism (37.8%), followed by the Center (23.1%) and the Alentejo (21.2%), which is the part of the country in between the Lisbon region and the Algarve [3].

Rural tourism is oriented to consumption, experience, observation and appreciation of natural, physical, environmental and cultural resources. It is a heterogeneous market in terms of age group, motivations or demands, but includes the contact with nature, pleasant sights, escaping the stress or daily tensions, quietness, traditional and popular heritage, food and unusual lifestyle. The implementation of rural tourism can be a strategic way for social and economic rural developments, in order to preserve and enhanced natural and built heritages. It can generate employment related to accommodation and other support facilities.

Tourism in rural areas has the potential of boosting the preservation of traditional architecture and the identity of the places. In this process, there is the need of avoiding its adverse aspects, such as the destruction of physical and natural landscapes or built heritage, such as is happening in many places in Madeira island (Figure 4). Thus, there is the need of planning strategies in order to avoid the bad aspects and to develop the good, revitalizing rural areas.



Figure 4. Rehabilitated house for tourism side by side with degraded house, *Madalena do Mar* in Madeira island – Portugal.

3.4. Local accommodation phenomenon

Tourism is a growing market in Portugal and an opportunity for entrepreneurship. Local accommodation offer has growing all over the country. It's quite easy to open a local accommodation keeping the following requirements: to have electric, water and sanitation networks, to ensure ventilation through windows, to be properly furnished, to have secure doors, and to be properly.

There are three types of local accommodations: houses, apartments and lodging (including hostels). Their maximum capacity is nine rooms and thirty guests, except hostels that have no limit of guests. The latter can have dormitories instead of rooms, with a minimum of four beds, except bunk beds, common social areas, kitchen, dining area and common sanitary facilities.

4. The case of Madeira island

4.1. Tourism planning program contents

Madeira has a tourism planning program which includes the guidelines, strategies and rules to consolidate, develop and promote the tourism in this region. It is focused on the authenticity and genuine local features, its economic, social and environmental sustainability [4-6]. It defines that Madeira is an all year destiny, of unique natural beauty, secure, easily accessible, cosmopolitan, recognized as a 'must visit' of Europe, with sun and mild weather, strong tradition in well-receive and a wide variety of experiences, able to exceed the most demanding expectations (Figure 5). A novelty in this program is the introduction of rural tourism establishments. This means something because in Madeira there are many regions with strong and traditional rural features.



Figure 5. Geographic localization of Madeira island – Portugal, [7, 8]

4.2. Rural tourism typologies of accommodation

In the rural areas of Madeira, the tourism planning program proposes the following typologies of accommodations: rural hotels, touristic farms, touristic villages, resorts, housing tourism ventures, rural tourism ventures, and camping and vans parks. The rural tourism ventures are organized in the three following categories: country houses, agro-tourism and rural hotels.

The rural touristic project solution proposes a local accommodation complex based on the features of the vernacular and traditional architecture of Madeira island in a contemporary approach (Figure 6). This complex is developed side by side with a number of existing buildings, housing and agricultural warehouses, seeking the dynamization of this settlement with the introduction of tourism.

Thus, the project includes 6 touristic houses, in a plot of about 1000 m², using traditional construction materials such as the local stone and wooden structures, combining the traditional and the modern. This low-density solution aims to be able to attract only a few number of users, keeping the previous standards of a low-density place, in order to be an answer not only for visitors but also regarding the traditions and features of local people (Figure 6 and Figure 7).



Figure 6. Rural touristic project proposal (water front / some architectonic details)
Fajã de Baixo – Madeira island, Portugal.



Figure 7. Rural touristic project proposal (some architectural details of the buildings)
Fajã de Baixo – Madeira island, Portugal.

With this project the small rural settlement of *Fajã de Baixo* will be save from a massive touristic occupation, keeping its natural, cultural and architectural identities. At the same time, there is the opportunity for locals to have a job and to keep their traditional way of living and gastronomy.

One landmark of this rural project [9] is the promenade, alongside to the sea shore, comprising 800 meters long. It has green public spaces for leisure, furniture such as wooden benches, a cycling and a pedestrian path complementing the tourist use. It ends at a view point in order to allow the visitors to have a wonderful view over the ocean, where they can rest for a while, having a conversation with friends or just observing the Atlantic sea (Figure 8 and Figure 9).

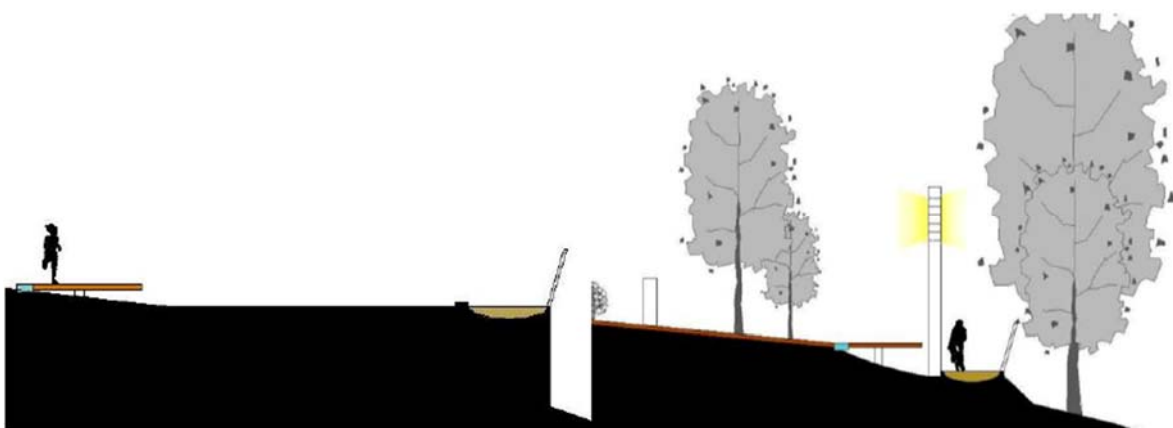


Figure 8. Rural touristic project proposal (promenade near to the sea)
Fajã de Baixo, Madeira island - Portugal



Figure 9. Rural touristic project proposal (promenade near to the Atlantic sea – as the urban design solution main landmark)
Fajã de Baixo, Madeira island - Portugal



Figure 10. Rural touristic project proposal (final solution) – *Fajã de Baixo*, Madeira island - Portugal.

Green spaces are pivotal designing elements along to this proposal [9] in order to keep present the contact of the visitors and users with the nature in a unique environment. The idea is to offer some jobs to local people, preserving their presence in this settlement.

At the same time this rural project aims to have a sophisticated framework, using traditional construction materials designed and organized in a modern way (Figure 10).

5. Conclusions

As this article aimed to show, there are still many opportunities to explore in order to promote the economic and social developments and the revitalization of rural areas such as in the case of *Fajã de Baixo*, in Madeira island. The growth of local accommodation and the boost of touristic market have led to many actions of rehabilitation of previously degraded or abandoned buildings, improving infrastructures mainly focused on the accessibility issues. However, there are still several points ahead, considering the lack of facilities, services or commercial offers for touristic purposes, in small rural villages, far away from the main attractive cities. The introduction of new activities such as commerce or facilities using the small scale of project, i.e. thinking about the demand of a few number of users, will attend both the locals and the visitors.

Given that tourism is increasing in *Calheta* but there are still there, traditional activities such as agriculture, this project idea is to avoid the tourism overcome the village as its main activity. The purpose is to keep local people living there, to catch some new residents and visitors, based on the touristic opportunities without expel the traditions, the vernacular architectural features, or other identity aspects. Rural territories such as *Fajã de Baixo* in Madeira island are going through a period of changes with the introduction of activities such as tourism. Therefore, there is the need of having spatial planning strategies focused on the features of rural areas, allowing a diversity and multifunction activities, in order to boost local economy, keeping the physical, natural and local identities. These strategies should include online tools such as digital marketing which has an important impact on touristic market, whether by the spread of touristic destinations by capturing visitors, or assisting in planning and booking the trips.

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