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ECO MARINAS – BEARERS OF SUSTAINABLE DEVELOPMENT OF NAUTICAL TOURISM

CASE STUDY MARINA TUČEPI

The Croatian coast has numerous smaller settlements situated around traditional historical ports. Those sites have significant cultural and historical heritage and a long tradition of maritime affairs. Local government has increasingly been attracting investments to traditional small ports by following modern trends in tourism. The intention is to ensure sustainable development of coastal and island communities through revitalization in all aspects, first of all, in socio-economic and cultural aspects. Recognizing trends on the nautical tourism market in Croatia, as well as in wider surrounding, a space has been created to preserve the tradition, use of natural characteristics and port infrastructure at the same time in order to achieve the development of nautical tourism in small coastal areas.

Endeavor in developing any tourist offer on the Croatian coast, including nautical, meets a large limiting factor: *space*. High-quality spatial management is of utmost importance because it directly influences the economic outcome of nautical ports and complementary activities in coastal and island settlements. Given various limiting factors, traditional ports should build their competitive advantage on nautical port management exclusively based on sustainable development.

This paper deals with the case study of Marina Tučepi to present advantages and threats of including smaller places into modern nautical corridors, and above all to present the possibility of preserving the natural basis through the application of the principle of sustainable development.

Key words: *sustainable development, nautical tourism, spatial management, eco marinas, traditional ports*

Introduction

As one of the fastest growing branches of tourism, nautical tourism has more and more influence on various aspects in the immediate and wider environment of its activity. In addition to the growth of measurable aspects of nautical tourism, such as: the number of tourists staying on the Croatian market, the number of berths and boats offered, and the growth of the economic results, there is also the growth of those difficult to measure, long-term effects of nautical tourism. For these reasons, an awareness of the importance of sustainable business development has begun to

develop. All parts of the business sector in the society focus on the sustainable development in order to preserve goods and resources for future generations.

Croatia, as a country rich in the natural diversity and indented coast, in terms of preservation and sustainable sharing, promotes decentralization of governance, i.e. strengthening local self-government. This mode of management is extremely important for small towns, with a small number of inhabitants and economic activity, because they can focus their development on solving problems they face. Numerous small settlements along the Croatian coastline have a long tradition of living by the sea. Therefore, it is no surprise that they want to profile as nautical tourism destinations. However, nautical tourism in Croatian tourism streams towards masses, and that would have a devastating effect on small destinations. The focus in this paper will be on the long-term effects of nautical tourism on the environment, i.e. to provide insight into one of appropriate solutions for sustainable development. The aim is to point out the importance of regulating the nautical tourism port on the principle of environmentally sustainable business in small places.

Nautical Tourism in Croatia

Nautical tourism in Croatia is one of the most profitable branches that grows every year and points to a further growth trend. The growth is recorded in capacity, increase in supply, and in economic results. The total realized revenue of nautical tourism ports in 2016 amounted to HRK 769 million, out of which HRK 539 million was realized from renting berths, and that is 70.1% of the total revenue. Compared to 2015, the total revenue is 2.1% higher, and rental income for 3.8%.

According to the research carried out in 2016, Croatia has 139 ports of nautical tourism at sea, including 71 marinas (of which 13 dry marinas) and 68 other nautical ports. The total area of sea surface is 3 764 124 m² and the number of berths is 17 428. The presentation of marinas by categorization is given in the table:

Nautical ports in Croatia, 2016									
County of	Total	Anchorage	Mooring	Marinas					Uncate- gorised nautical ports
				Land marina	Marina, 1 st category	Marina, 2 nd category	Marina, 3 rd category	Marina, catego- rised and marked by anchors	
<i>Republic of Croatia</i>	139	58	7	13	6	17	17	18	3
<i>Primorje- Gorski kotar</i>	26	8	3	5	1	2	3	4	-
<i>Zadar</i>	44	30	2	4	-	4	4	-	-

<i>Šibenik-Knin</i>	21	7	-	1	2	3	5	3	-
<i>Split-Dalmatia</i>	27	12	1	2	-	3	3	5	1
<i>Istria</i>	13	-	1	-	3	3	2	4	-
<i>Dubrovnik-Neretva</i>	8	1	-	1	-	2	-	2	2

Table 1: CBS: Port of nautical tourism for 2016

Source: http://www.dzs.hr/Hrv_Eng/publication/2015/04-03-04_01_2015.htm

Development plans and tourism development strategies of Croatia include further development of nautical tourism. Many smaller destinations strive to be involved in these processes. This paper seeks to highlight the importance of their development, but also to propose principles on what they should be developed.

Nautical Tourism in Small Coastal Towns in Croatia

Influence of nautical tourism on the domicile population

The problem of the Croatian economy is in its great dependence on tourism. Tourism and economic activities that are directly or indirectly linked to tourism are at present the only solution to economic existence in many small settlements and distant destinations. Nautical tourism, as one of the most profitable branches of tourism, has become an even more attractive form, on which many destinations want to base their offer.

In the coastal area of Croatia, life by the sea is a part of tradition, and in the past navigation was the only form of communication between coastal places, especially the ones on the islands.

Numerous towns located on the coast are struggling with a decline in the number of inhabitants, or the emigration of the population due to, generally, economic reasons. Therefore, the development of additional content and facilities in tourism, and in nautical tourism, new jobs are created that enable the population to remain in these areas.

Economic effects of nautical tourism

Economic effects are manifested in several spheres. First of all, it directly affects the growth of the income of all employees in nautical tourism. However, it also affects the growth of yields in indirectly related activities, as the growth of the city budget which can be directed towards the development of poorly developed segments of a destination.

Ecological influence

Although in nautical tourism attention is mainly focused on the significance of economic effects, it should be emphasized that other side effects are also present. Regulations and environmental laws in Croatia are not sufficient or precise, and the situation is even worse as they are not

implemented in the way they should be to prevent potential ecological infringements of the environment.

Nautical tourism in Croatia tends to massive development, which could lead to the overloading capacity and ecological devastation of available resources.

The development plans and strategies that have been implemented tend to highlight the importance of business sustainability as well as planning management in order to achieve numerous benefits (socio-cultural, economic ...) that would contribute to the creation of resources for further sustainable business.

Eco-nautical tourism

Although there is no definition of eco-tourism as such, it could be said that it should represent a business concept directed towards efficient ecological business sustainability and resource management.

Coastal and maritime tourism has become one of the main areas of tourism growth. However, over-exploitation of the coastline and excessive exploitation of natural resources threaten the sustainability of nautical tourism on many markets. At the international level, in recent years, the importance of preserving the maritime good has been discussed and the negative effects of mass tourism have been highlighted.

Unplanned construction, the overcrowding of the existing nautical infrastructure, and high demand lead to the overcrowding of the entire sector. In order to prevent this, efforts are made to raise awareness of the importance of long-term resource conservation.

The Charter on Sustainable Tourism also highlighted major dependence of tourism and tourism activities with natural resources and biodiversity, as well as the importance of tourism to spread awareness of environmental conservation. Endangering the environment compromises the prosperity of many coastal towns, especially small places. Uncontrolled management of tourism development impairs natural wealth, the authenticity of culture and tradition and it brings at risk the attraction of the destination.

In this context, nautical tourism comes as a strategic ally to society in emphasizing the value of natural and cultural resources of coastal areas.

Given the legal basis, there are certain standards that the eco-marina must satisfy:

- the construction and use of the nautical eco-marina port according to the world ecological standards (the establishment of the "Environmental friend", ecological standards - black and grey water, separated waste) is obligatory, and the maritime good would be exploited with the maximum degree of ecological awareness,

- the exclusive use of environmental materials in construction, the use of renewable energy sources and the solution to accept all types of wastewater, i.e. the entire infrastructure in accordance with ecology,
- obligation to use ecological colours for underwater parts,
- setting up solar power generators,
- it is mandatory to use saving lighting,
- a reduced impact on the environment due to the ability to take hazardous waste such as sewage from vessels or rigid waste.

Using these guidelines, the realization of the project planned in Tučepi would take on a general significance and it would be an example for further development of nautical ports on the Croatian coast.

Case study: Tučepi

Tučepi is one of the most attractive and most visited places of Makarska Riviera, and is therefore a favourite tourist destination for Croatian and European visitors. Tučepi developed in the '60 of the last century when construction of houses in Kraj area along the coast began. Since then, Tučepi has gradually evolved into a renowned tourist destination.



Photo 1 Marina Tučepi

Source: <http://dalmatia-travel-agency.com/2013/06/villa-tucepi/>

Tučepi is an ideal place for potential eco marina development due to several reasons. Firstly, due to the proximity of major destinations in the immediate vicinity. Tučepi Municipality has excellent road and sea connections for all potential visitors as it is only 80 km away from Split Airport and 22 km from Zagreb-Split-Dubrovnik Motorway.

On the other hand, Tučepi Municipality, unlike other small municipalities in the vicinity, has recorded population growth, including working-age population, in the period from 2001 to 2011,

when population censuses were conducted. Thus, according to the latest list (2011) there is a total of 1270 working people, i.e. 1.14% more than according to the 2001 census. Although this percentage seems insignificant, in a small place like Tučepi it is of great importance. This indicates the potential increase of the working-age population, who, for the purpose of further development of this place, should have existential basis for staying. Otherwise, Tučepi will meet the same destiny as numerous other small places, i.e. emigration of the population.

Population of the Municipality of Tučepi				
	Total population 2001	Working-age population 2001	Total population 2011	Working-age population 2011
M	890	606	970	644
F	873	538	961	626
Total	1763	1144	1931	1270

Table 2 Croatian Bureau of Statistics, 2011 and 2001 Census of population

Source: <http://www.dzs.hr/Hrv/censuses/census2011/results/censustabshtm.htm>

The last reason for the development of nautical tourism in Tučepi is a long maritime tradition, which is common for all destinations on the Croatian coast, but also for existing resources. The planned development of nautical tourism, i.e. the nautical tourism ports, is already in the development plan of the area as a Strategic Development Plan of Tučepi Municipality for the period 2016-2020, and it should take place in the area of the existing marina in the same place. The planned project refers to the expansion of the existing marina, so that it becomes a modern port of nautical tourism turned towards ecology.

Existing Condition

The Municipality of Tučepi bases its development on tourism, but today its space is largely characterized by the lack of a clear development concept. Also, the delays in designing and making adequate spatial plans, insufficient protection from unplanned construction, lack of parking area, uniform catering offer, and poor condition of the communal infrastructure, particularly sewage drainage, as well as many others, have contributed to weaker development capacities of the marina and the whole town.

The marina is located in the center of Tučepi, so it is close to the post office, municipality, Tourist board, church, numerous restaurants and cafes, shops, supermarkets, Internet access, parking area, etc. All berths available at the marina are in the concession of Tučepid.o.o.

(Tučepi Ltd.) in charge for communal activities. Most berths are for smaller vessels. The marina has 25 commercial berths for yachts and 125 berths for domestic vessels and an operating quay. At the present time, there is a port in this area, which is partially open to public traffic, and partly it is used for the purpose of marina, i.e. as a nautical tourism port (NTP), and to a small extent as a sport marina (SM). There is also a single pontoon mooring, and there is also a quay in the marina that serves primarily as an additional protection from the waves smashing against the shore. There is a space in the center of the breakwater that is in the function of the marina.

The current offer is insufficient for any business expansion, and it is ideal for potential development and focus on the business concept.

Plans for the future

Since it is a small town, which is strongly connected with the sea and maritime activities, it is very important that this project focuses on the construction of a nautical tourism port oriented towards ecology. Eco business is the goal that local authorities want to achieve with the future marina. They are primarily focused on this type of nautical tourism development due to an easier ecological sustainability of the entire destination. As well, ecological awareness gives an extra value and creates an excellent image of the destination.

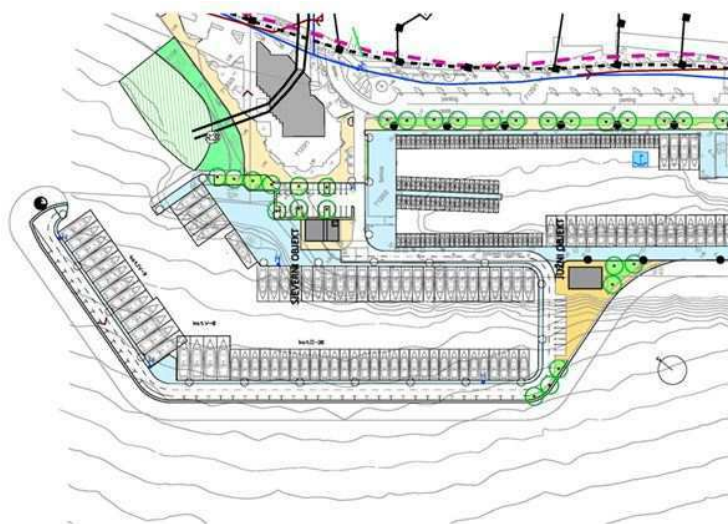


Photo 2 Spatial planning of eco marine Tučepi

Source: Spatial planning of Tučepi Municipality

Likewise, as the destination is located in a spatially limited area, it is extremely important that the future construction is planned. The space limits the range of the marina's business itself, and its management. In the development plan, it should be taken into account which parts of the marina will be intended for particular activities. Similarly, waste disposal, sewage, preservation of sea quality and purity of the maritime area should be specially planned. If the business is directed towards the principle of the well-known management of nautical ports, in small places a general collapse may happen, as well as an increase in pollution and spatial overload.

The goal of the future development is certainly the avoidance of the previously mentioned scenario because Tučepi is directly dependent on tourism activities. Therefore, the design of the future marina should be based on the spatial and ecologically functional transformation of the existing infrastructure and on the enabling new construction within the range, with adequate infrastructural and communal equipment. It is planned to build another 80 commercial berths in Tučepi Marina so that the total number of commercial berths is 105.

The aim of the project is to increase the offer of nautical tourism in this area as a result of the increase of the number of berths and the improvement of the maritime infrastructure of Tučepi in an environmentally responsible manner. The purpose of this project is ultimately to create conditions for the development and optimization of nautical tourism that is of great importance for small places like Tučepi.

Business on the principle of ecological sustainability

With the realization of the eco marina project, Tučepi would become the first place in Croatia with such business concept. Since the awareness of the importance of environmental protection is one of the main topics in directing sustainable development, and for which Croatia also is advocated, such business concept would contribute to the image of Tučepi, and it would become a model for all other places in the area.

The costs of eco-marine operations are much lower than the regular marina business, known to us. Also, a good management of marketing would create a brand of this small place that would attract a significantly larger number of tourists, which would ultimately result in higher profits. However, taking into account the limiting factors, such as the working-age population, the limited space in which the business will take place, it is possible that the expected results of business success will indicate ineffectiveness of the investment.

Taking into account the research conducted in 2016 for the eco-marina Tučepi project, for the purpose of static evaluation of this project, a budget based on the total values was implemented over the entire duration of the project and the following results were obtained for the mentioned indicators:

No.	INDICATOR	STRUCTURE	TOTAL VALUES FOR THE PERIOD OF 2017
1	Profitability of total invested funds	profit after taxation / investment level	0,27
2	Profitability of own resources	profit after tax / own funds	1,47
3	Profitability of traffic	profit after tax / total income	0,12
4	Shift total invested funds	total income / investment level	2,28
5	Profitability from the point of view of funding sources	(profit after taxation + interest) / (total assets in principal)	0,21
6	Net profit per employee	profit after tax / number of employees	42.938,82
7	Relationship of other sources to total resources	liabilities / investment amount	0,15
8	Investment return time	total investment / (net profit + depreciation)	100,87

Table 3 Key indicators

Source: Own research

The table shows the following:

- the indicators of the profitability of total invested funds, own funds and border traffic are acceptable, and in accordance with the limit values of the above mentioned indicators,
- the indicator of the investment return time indicates that the project is unacceptable.

Selected static efficiency indicators point out border justification for the performance of an investment project, but viewed solely from the point of view of the financial viability of the investment.

In other words, the results of the research carried out suggest a non-viability of a project based on the input parameters, which are taken from the existing documentation. However, a small place like Tučepi, along with its surroundings, is a project of great importance in the socio-demographic context.

Conclusion

In accordance with the planned strategies for the development of nautical tourism of the Republic of Croatia for the period 2009-2019 and the Action Plan for the Development of nautical tourism of the Split-Dalmatia County, which foresee management of nautical tourism ports in all marina areas along the coast, Tučepi Municipality recognized the opportunity to raise the quality of receptive capacity of nautical tourism in its sea area. Also, keeping up with global trends

and leader's recommendations on the market, they try to focus its development and future business on an ecologically sustainable principle.

In this way, Tučepi wants to become a market leader and an example of how the growth and development should be planned, directed and realized in small places which progress directly depends on one economic activity.

Applying this model, the development, i.e. the development of marina's ecological management, can have negative economic outcomes in small places. Cost-effectiveness of the investment in the short term will not have a positive result, but in the socio-economic aspect in small places such as Tučepi ensures long-term sustainability. State and local authorities should encourage such projects for future generations and future sustainable development. This would reduce the negative trends of emigration, abandonment of activities, etc.

This form of tourism has significant multiplicative effects on the narrower and wider segment of the destination. Likewise, the development of nautical tourism should focus on ecologically sustainable business for the purpose of protecting and preserving resources for future generations, which will have greater economic benefits than today's investments.

It should also be emphasized that numerous studies of market-oriented business preference as well as various long-term business researches have shown that the implementation of an ecological component in nautical tourism represents an argument for the application of a premium pricing strategy. In the conditions of strengthening global tourism competition, highlighting the ecological component in a specialized nautical tourism product contributes to greater recognition and competitiveness.