

# Ecological Evaluation of Cres – Lošinj Archipelago for the Purpose of Tourism

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## Abstract

*The topic of this paper is ecological evaluation of the Cres-Lošinj archipelago and the way it could be used for tourism purposes. Rapid growth of population and increasing human economic activity influence the quality of the environment. That is why the concept of sustainable development has been made, as well as new kind of tourism - eco-tourism or sustainable tourism. Today there is a small number of regions with preserved nature. The Cres-Lošinj archipelago is one of them. There is a large number of preserved plant and animal species on the archipelago, as well as some rural areas with preserved local architecture. With the development of eco-tourism, this archipelago would get the image of the area with preserved and authentic natural and cultural surroundings and healthy living environment.*

**Key words:** *The Cres-Lošinj archipelago, sustainable development, eco-tourism, environment quality*

## Introduction

Explosive population growth in the last one hundred years, increasing economic activity of mankind, development of international trade, and increasing need for energy and material goods have had and will have negative effects on the quality of the environment. Environmental problems assumed striking proportions because they directly influence human health, threaten the survival of life on Earth, and have negative effects on the environment. When it became clear in the 1980s that degradation of the environment had already become one of the main obstacles to the economic development, the concept of sustainable development was made. If we take a look at the definition of sustainable development according to which the development that will meet the needs of present generation should be realised without endangering the needs of future generations, we can see that there are three important elements in the concept of sustainable development, and they are:

- concept of the development – it is not identified with economic growth. Although these two terms are often identified, it has to be pointed out that economic growth refers to quantitative elements, and development represents qualitative concept of development of the society

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- concept of needs – deals with distribution of basic resources for realisation of high-quality way of life
- **concept of future generations** – points at the essence of sustainability that comes down to what we will leave to future generations (Črnjar, 1999).

Although ecology and tourism are two terms that are sometimes hard to connect because most of the times they are mutually exclusive, they can exist together as eco tourism. What is eco tourism? Unique, internationally accepted definition still does not exist, but one of the best known unofficial definitions reads it is tourism where tourist takes with him only memories, and leaves only his footprints (Sušić, 2000). Eco tourism can also be called “sustainable tourism” or “responsible tourism” because of its orientation toward programmes that connect the man with the nature, but also because it enables part of earned money to be used for environment protection. Eco tourism can also be defined as a kind of tourism that reflects historical, cultural, architectural, and natural heritage of the eco system. Eco tourist supply represents a significant breakthrough in relation to classic tourism, i.e. quality gains advantage over quantity (Prebanda, Ećimović, 1994). Eco tourism uses destinations where authenticity of surroundings has been preserved, in its natural form as well as in its cultural identity. Therefore it can be said that future in tourism belongs to those countries that will know how to preserve healthy living environment.

Today, regions with preserved nature are becoming rarer. That is the reason why special attention is being given to such areas with the purpose of their protection. One of those rare areas where mass tourism has not completely ruined the environment is the Cres-Lošinj archipelago. Islands, specific natural phenomena, are extremely sensitive natural, social, economic, and ecological ecosystems. According to that, every planning of island development can not be realized outside the framework of its ecosystem. Therefore it is desirable and necessary to develop various forms of selective tourism on islands. Therefore, in the last few years a movement to protect the environment on these islands has developed in order to improve islanders’ living conditions, and to encourage a new form of tourism that gives people more than mere lying on the beach, and that is enjoying in the preserved nature.

## Geographical position of the Cres-Lošinj archipelago

Spatially, the largest archipelago in Croatia is Kvarner archipelago that can be divided into two rows – western and eastern row. Western row of Kvarner archipelago is the Cres-Lošinj archipelago that, apart from two main islands – Cres and Lošinj, encloses smaller islands: Unije, Ilovik, Susak, Vele Srakane and Male Srakane, as well as many uninhabited islets, rocks, and rocks awash of insignificant area. The Cres-Lošinj archipelago is situated between eastern coast of Istria and eastern row of Kvarner islands (Krak – Rab – Pag). Islands Cres and Lošinj form the largest insular unity, and they are the central and unique part of the entire archipelago. That uniqueness was particularly important in the past when the town Osor, situated on the narrow strip between Cres and Lošinj, as the main centre of both islands of that period, defined their common name. In ancient history Cres and Lošinj were one island. It was only after artificial channel near Osor had been dug through, probably in the Roman period, that two island were formed.

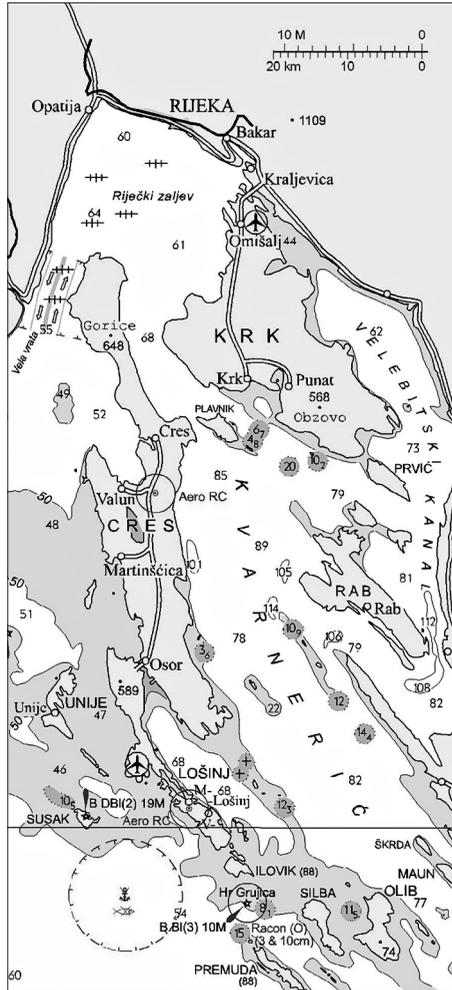


Fig. 1. Geographical position of the Cres-Lošinj archipelago

## Tourism development on the Cres-Lošinj archipelago

In the 19<sup>th</sup> century regular steamship lanes connecting Cres and Lošinj with other ports on our coast were established, and that was a necessary condition for tourism development. Tourism started developing in this area late in the 19<sup>th</sup> century when first tourists came to Mali Lošinj in search of healing power of the healthy climate of the Lošinj island. The first hotel was opened in Mali Lošinj in 1887. In 1889 famous Austrian doctors pointed out at health characteristics of Mali and Veli Lošinj, and they started to send their patients there. In 1892 Mali and Veli Lošinj were proclaimed health resorts. It can be seen that tourism on Lošinj island was winter and health tourism up to the beginning of the 20<sup>th</sup> century. At the beginning of the 20<sup>th</sup> century a swimming beach was built in Čikat and the interest for bathing in the sea developed. After World War Two a great number of hotels were built on Lošinj island, which is how mass tourism developed.

First visitors came to the town of Cres in 1845 when 200 excursionists arrived from Rijeka on steamships. Their motives were interesting historical parts of the town and culinary specialties such as lamb meat and cheese. However, the first hotel in Cres was opened at the end of the 19<sup>th</sup> century. Tourism on Cres was not developing as fast as tourism on Lošinj, so that other hotels were opened early in the 20<sup>th</sup> century. All those hotels were closed later, and it was only in the early 1960s that a new hotel was opened in Cres and that is when tourism on Cres began.

Geographical basis for tourism development on the Cres-Lošinj archipelago lies in good geographical position in relation to European countries that tourists come from and good natural conditions – indented coast with beautiful beaches and clean sea, Mediterranean flora and mild climate. That is the basis for development of all kinds of tourism – stationary, bathing, and nautical tourism. Tourism has already brought revitalization of old historical parts of coastal towns. In this way, developed tourist market can also be impetus for revitalization of traditional economic activities that are famous for their high-quality products (wine, olive oil, fruit, lamb meat, fish).

It can be seen that Cres and Lošinj were not developing their tourism at the same speed. Due to mass tourism development on Lošinj and slow tourism development on Cres, Cres has more possibilities to develop alternative forms of tourism today, such as eco tourism and agricultural tourism. Development of numerous hotels and campsites and mass tourism significantly damaged natural environment on Lošinj, while environment on Cres has remained well preserved.

## **Areas of ecological evaluation on the Cres-Lošinj archipelago**

In order to rationally manage the environment of a certain area, it is necessary to single out areas that have great importance for it. According to that, there are two areas that can be singled out on the Cres-Lošinj archipelago – marine and land environment. Marine environment that encloses sea from the coast up to territorial waters boundary (12 nautical miles) and coastal zone maximum 90m wide is divided into two categories of management – sea reserves and sea. Land environment encloses the rest of the area and is divided into three categories – ecological zone, areas of social and spatial revival, and zone of urban development.

The most important areas for this paper are sea reserves and land ecological zones that are divided into two categories of protection: scientific (strict) reserves and special reserves. Scientific (strict) reserves are areas with limited access – access is allowed only to authorized researchers for the needs of scientific research. Special reserves are areas that are managed in order to preserve ecosystem. Man's interventions into natural resources are allowed only in those areas where those activities are needed to ensure optimal management. That means protected parts of the environment can be used only in the controlled and guided way. In this respect classic forms of tourism are limited, and preference is given to scientific tourism, day-trip tourism, rural tourism, health and recreational tourism, educative tourism (field trips), etc. (Plan gospodarenja, 1996).

Areas of social and spatial revival are also important. They are numerous and they could also be used for tourism purposes. They enclose private agricultural plots, and agriculture is important for balance and preservation of biological diversity. Traditional agricultural activities such as grape-growing, sheep breeding, bee-farming, traditional cultures cultivation are important here. These areas also enclose small plots bordered with drystone walls that are parts of cultural landscape of this area, as well as villages and small islands.

## *Land ecological zones*

Ecological zones contain various habitats of plants, animals or vegetation communities that are more or less endangered. In such areas structural characteristics of the landscape should be protected, ecological processes should be maintained, habitats, ecosystems and species should be preserved as much as possible, and natural environment should be preserved to serve the needs of the scientific research, environment monitoring and education.

Considering the fact that scientific reserves can not be used for tourism, we will mention some areas that have the best possibilities for the development of tourism and recreation.

On Tramuntana, in the village Beli, Eco centre *Caput Insulae* – Beli was founded in 1993 in order to protect Griffon vultures (*Gyps fulvus*), but also the entire natural and historical heritage of Tramuntana. In order to learn more about the entire heritage of Tramuntana, network of instructive trails (3 trails) was established as a unique exhibition “History and art in nature”. Apart from taking care for griffon vultures, Eco centre also implemented a project “Saving small marshes on the island Cres”. In that way, unique biological diversity has been preserved.

Various endangered and endemic plant and animal species inhabit several sites on the archipelago. We can find them on the eastern coast of island Cres, in Srem area on the SE coast of Cres, near Osor and on Osorščica mountain, on Susak island. Their habitats could be protected and proclaimed reserves, and used in tourism. Apart from that, there are caves of great natural, historical and anthropological value on the archipelago.

## *Areas of social and spatial revival*

Apart from ecotourism that has good conditions for development on the entire archipelago, the existence of areas of social and spatial revival is also important. These areas enclose private agricultural plots that are important for the development of traditional agricultural activities, then small plots bordered with drystone walls (important cultural landscape), villages and small islands. There is a great number of those areas on Cres because the island Cres has the lowest population density on the entire Mediterranean area. There are many areas on the archipelago that have exceptional conditions for rural and agricultural tourism. These areas are still autochthonous enough so that this kind of development makes sense. These areas are Tramuntana (with Beli, Predošćica and Dragozetići as central settlements), Pernat peninsula (Valun and Lubenice as central settlements), Srem plateau (Belej and Ustrine as central settlements), Punta Križa-Osor-Osorščica area (Punta Križa, Osor and Sv. Jakov as central settlements) and islands Unije, Susak and Ilovik. In these areas nature and culture should be protected by protecting landscape characteristics and by supporting traditional use of the land (traditional agriculture). Encouraging traditional architecture and development of new economic activities appropriate for those areas would prevent the abandoning of rural areas. This implies the development of agricultural tourism through which products of traditional agriculture could be marketed. Marking the trails (hiking, cycling) and preservation of cultural heritage is also stimulated. It is also necessary to make tourist brochures that would point out at specific natural and cultural-historical values of the area, and that would at the same time emphasize the need for nature protection.

### *Programme of revitalization of cultural values and areas on the Cres-Lošinj archipelago*

Marijan Vejvoda, PhD of Faculty of Architecture in Zagreb initiated “Project of Revitalization of Cultural Values and Areas on Cres and Lošinj Islands” in 1986. The aim of the project was to restore integral rural areas on the islands of Cres and Lošinj in accordance with ecological

and specific architectural conditions and social interests. That revitalization should have triple character: economic, cultural, and scientific.

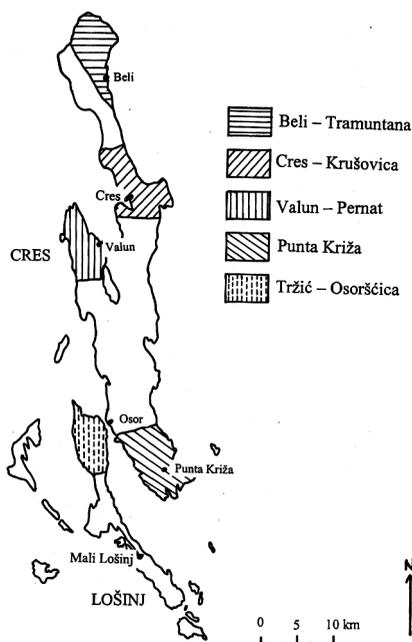
Basic ideas of the project are:

1. Inherited cultural value as new economic value – cultural heritage is a resource of labour that should be re-assessed so that it becomes production category;
2. Development of ecological awareness through production practice – production practice that would be in accordance with ecological prerequisites should be developed;
3. Restoration of traditional trades as an element of revitalization – revitalization of trades has become common in various programmes of cultural action, especially in those that aspire to evolution of ecological awareness and reconstruction of the life of particular local community;
4. Self-sufficiency and development of existential values – questions of minimal self-sufficiency, especially in food, energy and development of existential values are becoming more and more topical.

Preliminary research of the islands of Cres and Lošinj has shown that this project could enclose five rural areas. They are:

1. Beli – Tramuntana,
2. Cres – Krušovica,
3. Valun – Pernat,
4. Punta Križa,
5. Tržić – Osoršćica.

This project would not only revitalize cultural values in those five areas, but it would also improve tourist supply of the archipelago through the development of ecological agriculture and agricultural tourism. That would also improve the life of islanders.



*Fig. 2. Rural areas designed for revitalization*

### *Eco-park Pernat*

The only area where progress towards such social and spatial revival can be seen is the Pernat peninsula on the island of Cres. Eco park is being established on that area. In a larger sense, concept of eco park encloses the research of basic relationship between man and space. Three crucial factors that enable vernacular architecture exist in one place: type of agricultural production, local materials, and accumulated building experience (tradition) (Duić-Kowalsky, 1997).

The Pernat peninsula is situated on the western side of the central part of Cres island. The main settlements there are Lubenice, Zbičina, Pernat and Podol. As a mountain block Pernat rises steeply from the sea, therefore it is very difficult to access the sea. That is one of the reasons why settlements are oriented towards agriculture more than towards fishery and maritime affairs. Since the border between sub-mediterranean and mediterranean climate passes through the peninsula, all plant species are represented there. Among the basic characteristics of the peninsula are rocky pasture grounds that are protected as valuable landscape near Lubenice. On the beach below Lubenice there is an attractive cave called Plava grota (Blue cave) to which boat excursions take tourists.

On the Pernat peninsula there are traces of cultures from prehistory up to today. The area is marked by autochthonous rural architecture, created for centuries, whose origins can be traced back to prehistory. Considering the origin of settlements, there are settlements that have been established in prehistory and still exist, such as Lubenice, and younger settlements connected with cattle breeding and agricultural tradition of their inhabitants.

Eco park Pernat project proceeds from the concept of revitalization of traditional economic area and settlements. The Pernat peninsula was created by human centuries-old shaping of the environment into economic area with scattered settlements. Elaboration of the concept of eco park follows, and it implies revitalization of the local economy, arranging the landscape, returning of the settlements' identity and finally arranging houses and public surfaces. Returning existential autonomy to the abandoned settlements should be connected with traditional ways of earning, such as agriculture, cattle breeding and old trades. By their revival, ecological balance will be preserved. That is also the most reliable way to protect and arrange wider autochthonous landscape. Old baker's oven in Lubenice has already been restored, as well as former elementary school in Lubenice that has become an exhibition area. The visitors can get acquainted with the history of Lubenice, with old trades and customs of that area. In summer "Lubenice musical evenings" are held in Lubenice, and that brings another form of tourist supply to visitors and local inhabitants.

In the area of Lubenice the hiking trail "Hibernica" was established with 26 interesting stops enclosing public objects, sacral objects, architectural and ethnographic elements of architectural heritage, views, and elements of the landscape (hurdle-gate, drystone wall, ponds, etc.).

### *Marine ecological areas*

In 1987 researchers of Tethys Research Institute started to research biology, ecology and social structure of the community of dolphins in the waters east of the Cres-Lošinj archipelago. The dolphins are one of the best known dolphin groups in the entire Mediterranean Sea. The area of the research is situated between eastern coast of Cres and Lošinj and western coast of Pag. There is an estimate of 100-150 dolphins within the community. Most of them are photo-iden-

tified, and there are also data on their calls, distribution, behaviour, feeding habits, breeding, social connections and movements inside the area.

This area has exceptional ecological and tourist value. Excursions and dolphin-watching could be organized. There already is a project of “adopting” a dolphin where people can “adopt” a dolphin. They receive all information on “their” dolphin, and by symbolic fee they help further research. Excursions should be done with expert surveillance in order not to disturb dolphins. This is a good example how animal species can become a part of tourist offer.

## Guidelines for future development

Special place in tourist development and its movements belongs to space. Tourism needs to use it, but it also demands its quality. Therefore it goes deep into the most beautiful areas that are the most attractive for tourists. Tourism carries in itself the danger to destroy its own basis, and that is natural environment. Today tourism asks for more contact between man and nature. It is not the most important any longer to have exotic landscape and good climate conditions, today destinations become popular for their preserved environment. This shows us that future in tourism belongs to those countries that will have preserved environment and protected nature.

One of such areas with preserved environment is the Cres-Lošinj archipelago. Due to inadequate economic development this area remained the area with vast natural resources and testimony of historical coexistence of man and nature. The price for that slow development was drastic loss of inhabitants of the archipelago. However, wise centuries-long management of natural resources should be the guideline for sustainable development for future generations. Because of its biological diversity on a small area, known natural heritage of the Cres-Lošinj archipelago represents an exceptional value both in local and international framework. Due to the lack of systematic care natural and cultural heritage are underused as a basis for various ecological forms of economic activities. Such areas could be protected and then used for tourism. However, protected parts of nature can be used only in controlled and guided way.

In this respect classic forms of tourism are limited, and preference is given to scientific tourism, day-trip tourism, rural tourism, health and recreational tourism, educational tourism (field trips) etc.

There is a strong connection between eco tourism and ecological agriculture. High-quality agricultural products improve the quality of the entire tourist product. Although the Cres-Lošinj archipelago is deficient in agricultural area, that area is unpolluted agricultural area ideal for ecological agriculture. The offer of such autochthonous specialties is a tourist attraction that contributes to expansion of tourist supply and recognizes the archipelago as the area with healthy preserved nature and healthy food. In that way, ecological agriculture on the one side and rural tourism and catering on the other side can produce great results for tourism.

All buildings used for tourism purposes (and others as well), if they are in the protected area, must be in accordance with aesthetic, ecological and spatial regulations. That means that they have to adapt to the landscape. Passing through the protected areas should also be ecologically adapted. Considering big number of days with sunshine throughout the year, the use of solar energy should be encouraged. Cycling trails could be developed, especially in those areas where there are not many settlements. Those trails would pass through natural environment so that visitors could enjoy riding through nature.

Based on this, we can say that the Cres-Lošinj archipelago is still expecting its true tourist evaluation. Mass tourism has boundaries of its development, and its further uncontrolled development could endanger sensitive insular ecosystems. Therefore it is necessary to plan various forms of selective tourism, and ecotourism is only one of the options.

## Conclusion

On the Cres-Lošinj archipelago there is a great number of areas with preserved environment. However, most of them are still not evaluated. Effort can be seen in some areas, e.g. on Tramuntana and in Lubenice. Apart from these two areas, other areas are still not being used. They should be protected first, and then evaluated for tourism. Some of the areas could be arranged for the needs of agricultural tourism. In that way, visitors could stay in preserved environment and would eat healthy autochthonous food.

The archipelago also has many various plant and animal species. Great number of those species is rare or protected, which contributes to the attractiveness of the archipelago. It is very important to educate local inhabitants and visitors about the importance of those species and the need for their preservation.

Based on all this it can be said that the Cres-Lošinj archipelago should not run away from its natural resources and look for an alternative in its development. Those advantages that come from preserved natural and cultural heritage have to be holders of the insular tourism. Therefore, various forms of selective tourism should be gradually planned, and ecotourism is the most important among them. It also should not be permitted that tourism destroys its basis of development, and that is the environment.

## Bibliography

- Blažević, I. (1987): Povijest turizma Istre i Kvarnera, IRO Otokar Keršovani, Opatija
- Bošković, D. (1998): Mogućnosti razvoja selektivnih oblika turizma u Istri, *Hotelska kuća '98*, vol. 1, Opatija, 77-90
- Črnjar, M. (1999): Znanstveno traganje za održivim razvitkom, rad sa konferencije *Economics and Ecology in Function of Tourism Development*, 447-459
- Duić-Kowalsky, N. (1997): Polazne odrednice eko-parkova – primjer eko-parka na otoku Cresu, *Muzeologija*, 34, Zagreb, 178-185
- Kušen, E. (2002): Međusobna ovisnost ekološke poljoprivrede i turizma, *Turizam*, vol. 50, br. 1/2002, 79-84
- Kuvač, I. (1989): Mogućnosti razvoja ekoturizma na jadranskim otocima, *Pomorski zbornik*, vol. 27, br. 1, 603-612
- Muraj, A. (1995): The Ecological Awareness of the Villagers of Cres, *Narodna umjetnost*, 32/1, Zagreb, 171-182
- Prebanda, Lj., Ećimović, T. (1994): Program poljoprivreda-turizam-ekologija i njegova provedba na području srednjodalmatinskih otoka, *zbornik radova sa simpozija Strategija održivog razvitka hrvatskih otoka*, Hvar, 289-294
- Schneider-Jacoby, M. (2000): Turizam i zaštita prirode: osnovne ideje za suradnju u Hrvatskoj, *Turizam*, vol. 48, br.4, 385-396

- Stražičić, N. (1975): Cresko-lošinjska otočna skupina, Otočki ljetopis Cres – Lošinj, vol. 2, 143-190
- Sušić, G. (2000): Ekoturizam – jedina šansa za revitalizaciju i održivi razvoj Tramuntane?, Tramuntana – nasljeđe za budućnost, Beli
- Sušić, G., Perinčić, T. (2000): Tramuntana – povijest i umjetnost u prirodi, Eko-centar Caput Insulae Beli, Beli
- Plan gospodarenja okolišem Cresko-Lošinjskog otočja (1996), Državna uprava za zaštitu okoliša, Odjel za zaštitu Jadrana, Rijeka
- Vejvoda, M. (1986): Projekt revitalizacije kulturnih dobara i prostora na otoku Cres-Lošinj, Arhitektonski fakultet Sveučilišta u Zagrebu, Zagreb