

SMALL FISH FARMS-FACTOR FOR RURAL TOURISM DEVELOPMENT IN THE REPUBLIC OF MACEDONIA WITH A FOCUS ON THE OHRID REGION

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Abstract

Purpose – The aim of the paper is to investigate and demonstrate the importance of the development of rural tourism, the development of cultivating, reproduction and nutrition of the fish in small fish farms (aquaculture) in Macedonia, as a new segment in the tourist offer that promotes it. The case study looks at the private fish farm „Paradise Valley", located in foothills of Mount Galicica in the locality Rashanec in Openica village, municipality of Ohrid, Macedonia.

Methodology – In the research following methods are applied: surveys, interviews, comparative method, qualitative method, quantitative method, statistical method, method of observation, SWOT analysis as an auxiliary method.

Findings – results show that the set target of labor is justified. By analyzing of results of the survey concludes that there is a connection between the development of rural tourism and other factors involved in that (contact with travel agencies, contact with educators on rural tourism as well as correlation with IPARD funds).

Contribution – The paper has contributed on theoretical and practical aspects. New in the paper is that it is proven that fish farm "Paradise Valley" as a small fish farm, is a successful example of the development of fishing and rural tourism. Ohrid trout as a relict and endemic species of fish can be grown in small fish farms like this.

Keywords: small fish farms, aquaculture, rural tourism, tourism offer, Ohrid region

INTRODUCTION

Trends in the development of international tourism are based on characteristics of tourism demands, and appropriate adjustments of the tourist offer. Tourism is in the process of permanent and strong changes, primarily resulting from changing of the structural tourism elements in general. Main changes that make tourism particular turbulent, are facts derived from the immediate environment (Marinoski 2008). Based on that, there is a need for a new concentration on the development of tourism in Macedonia, especially the relationship of tourism development and the protection and preservation of natural and cultural resources, as well as highlighting problems and costs of tourism development of this kind.

The development of tourism in the countryside, in unpolluted natural environment, with expressed individualisation of tourism demand and its continued concentration of non-tourism products, is one of the main changes to this concept of tourism

development. As with other selective types of tourism also for the development of rural tourism, it should start from the desire and need of the customer (Marinoski. 2009).

Tourists are attracted by unpolluted environment, pure mountain air, fresh spring water, which is impossible in urban environments and the fast pace of life. Macedonia has rich natural, historical, cultural and tourist goods and it is still almost untouched in its specific, unique beauty and diversity of lakes, high mountains, forests, rivers, springs, and many cultural monuments and archeological sites.

Rural tourism is a new activity in Macedonia, and efforts to develop it, are taken on higher and broader level. In Macedonia, very few sites are considered as main areas for development of rural tourism, and have a fully developed rural tourism. There is need of developing special legislation, with defined standards for rural tourism and without that it can't professionally developed.

In this paper, impact on small fish farms on the development of rural tourism in Macedonia is processed, focusing on the Ohrid region. Focus of the Ohrid region specifically covers small fish farm "Rajska Dolina" - "Paradise Valley", benefits of its operation, and the development of rural tourism in this region. A review of existing small fish farms in Macedonia is done, and effects of its impact to the development of rural tourism in the country. Ohrid region is an ideal place for investment for the development of rural tourism, for which contribute significant geomorphological, climatic, hydrographic and biogeographic factors. The area is influenced by the Mediterranean east-continental climate, with an average annual temperature of 11,9 °C.

Big River, aright tributary of River Sateska, springing northwest of Plake Mountain with an altitude of 1880 m³. On waters of the Big River was built a small fish farm "Paradise Valley"- in the locality Rashanec and it is analyzed in this paper. In this fish farm are breed native species of fish and Ohrid trout and carp.

The aim of the research is accomplished by making valorisation of Kosel area and determination of its potential for development of aquaculture, i.e. small fish farm "Paradise Valley" to create a new tourism product which will be found on the tourist offer and to contribute for the development of rural tourism in the area, and in the country.

Subject of this research is the fish farm "Paradise Valley" and specific research is trying to answer the following research questions: Existing of conditions for the development of aquaculture in this region, accessibility to this region, existence of conditions for construction of bungalows, existence of interest by travel organizations for inclusion of this region in tourist offer, the existence of other tourist attractions beside aquaculture with which the tourist offer could enrich. Answering the question is the cultivation of Ohrid trout and carp in this fish farm can increase number of visitors, is indigenes population which perform rural tourism in the area is educated, as well as local self-government, Ministry of Agriculture, Forestry and Water Economy, Ministry of Environment and Physical Planning, all these factors are interested for the development of aquaculture in the region.

According to the defined problem and purpose of the research it should be proved that the development of aquaculture directly influence the development of rural tourism.

1. AQUACULTURE IN THE REPUBLIC OF MACEDONIA

Aquaculture is breeding, reproduction and feeding of fish that naturally or primarily live in particular fishing water (Law on fishery and aquaculture). Aquaculture production is a complex technological process that deals with the production of quality food for human consumption on the one hand, but also the production process that achieve broader social and economic effects, such as the ability to produce material ranching in strictly controlled conditions intended for stocking open waters intended for commercial or recreational sports fishing, aquariums and production of ornamental fish species for gardening fountains, parks, etc. (Stefanovski 2011).

Fishing as a part of the economy in Macedonia has very old and long tradition. Near lakes in Macedonia, and flood areas in Pelagonia Katlanovo and Strumenshnica (Monospitovo Swamp), until the Second World War, this activity was a good source of food and a place where a good part of the population found employment and subsistence. During this period fishing settlements are known: Dojran on Dojran Lake, Pestani, Trpejca, Kalista, Ljubanista, Tashmarunishta on the Ohrid Lake, Stenje Asamati on Prespa Lake and some villages along swamps and marshes, where a good part of the inhabitants were fishermen who lived exclusively from fishing.

The modern way of life, accompanied by a steady increase in population on the one hand and the promotion of the Macedonian economy in the current economic conditions on the other hand, requires an intensive production of fish meat and fish processing products, including improving of its quality.

The fish in the human nutrition has a special place because of its favorable chemical composition of meat, particularly with animal protein, with the favorable relation of the essential amino acids and essential fatty acids, in particular vitamins A, D and E and oligo-elements (Rechkoska 1993, 2012).

Fishing can be a development factor, from which needs for its intensification are resulting, based on the natural resources of the Republic of Macedonia, which unfortunately are not yet sufficiently exploited. However, fish production in the country does not meet the needs of the population and therefore are imported every year certain amounts of fish.

Table 1: Total Production of fish in registered fish farms in the Republic of Macedonia, period 2003-2014, in tons

Year	Trout	Carp	Catfish	Total Production
2003	672	174	5	851
2004	711	248	15	974
2005	471	316	2	789
2006	377	150	4	531
2007	728	204	21	953
2008	874	222	25	1121
2009	1101	307	31	1439
2010	1188	178	41	1407
2011	1069	183	40	1292
2012	1036	176	38	1250
2013	1036	176	38	1250
2014	956	173	45	1174

Source: State statistical office of the Republic of Macedonia, 2014

All aquaculture facilities in Macedonia are in rural areas and open the possibility for new jobs also possibilities of keeping young people in the villages, and on the other hand to fish producers open the possibility for development of rural tourism.

1.1. Fish Farms in Macedonia

In 2008 in the country there were only 7 fish farms, and in 2015 there are 77 fish farms located in certain regions.

In Bitola and Demir Hisar region, Babino fish farm which is located in the village of Babino. Fish farm is filling with water from Bazernichka river and it is a fish farm for trout production. It is visited by domestic and foreign guests especially in summer, and is quite attractive.

In the area of village Nezilovo on the Babuna River, fish farm Nezilovo is located, actively working since 1998. The fish farm is completely private investment which is engaged in production and breeding of californian, gold and mavrovo- zlatovchican trout.

The first fish farm for breeding californian trout was built in 1962 in Vrutok, Gostivar Area. Vrutok fish farm today is known for producing golden trout and silver trout.

Fish farm Belica that started in 1993 is the largest fish farm for trout in Macedonia, and is located near the village of Belica. In his fish farm different kinds of fish is produced, such as golden, red, mavrovo and river trout.

Dosnica fish farm is located in the municipality of Demir Kapija, 5 km distance from the highway Skopje-Gevgelija. It exists more than 60 years and has a long tradition of growing californian and river trout, and for the first time fresh salmon.

At the foot of the mountain Stogovo from which springs the River Treska, the same named fish farm Izvor-Spring for growing Californian and golden trout. Fish farm is managed by PE "Macedonian Forests". The capacity of the fish farm is 100-110 tons of californian trout, and the young fishes from farm are used for their own needs and the needs of other farms in the country that bred californian trout.

Fish farm Strezevo operating for 20 years, since 1995, as fish farm for californian trout, and has a production capacity of 60 tons of fish annually, but unfortunately this fish farm doesn't make own spawning of fishes, and fish stocking material - fertilized roe is imported from the USA.

In Ohrid region number of fish farms is not satisfying and it should be improved. There are only two fish farms in region, one is "Paradise valley" and one smaller nearby this fish farm, in Openica village, but with smaller capacity, and because all that we recommend to develop fish farms, especially in Ohrid Region because there are very convenient natural and social conditions for this activity.

1.2. Methodology

In this research more research methods are applied. Comparative method is used in order to compare data for achieving to relevant conclusions. The method of observation is used with which observing of different phenomena and elements, in the environment is done, and as an auxiliary method SWOT analysis is done of the fish farm "Paradise Valley". Besides that, other instruments for achieving data are used: surveying and interviewing which performs attitudes and opinions of domicile population are gained, in a particular area of research, as well as the opinion and views of domestic and foreign tourists.

2. CHARACTERISTICS OF SMALL FISH FARM "RAJSKA DOLINA"- "PARADISE VALLEY"

Fish farm "Paradise Valley" is owned by a company for manufacturing, construction, trade, service and hospitality "Paradise Valley" Import Export Ltd - s.Openica and is situated on the northwest hilly foot of the mountain Galicica, in non-rural area around villages Openica and Kuratica on private land in the locality named Rashanec. There is asphalt road to the fish farm.

The fish farm is actually a facility for production of native salmon fish and is located north of the Ohrid Lake, about 16 km from Ohrid, next to Big River. The idea of building this fish farm is supported by Hydro-biological Institute from Ohrid, for exploitation of natural resources in the mountain area without disturbing the natural regime of the flora and fauna of this location, and because of the ideal conditions for growing endemic Ohrid trout, which as a type on year by year exists less in the Ohrid Lake. As a result of that, it was concluded contract for business and technical cooperation between Hydro-biological Institute - Ohrid and "Paradise Valley".

Waters of the Great River which flows into Kosel River which is a tributary of the Ohrid Lake, belong to the secondary salmon area, which waters belong located at an altitude from 600-1200 m³. This part of watercourses is rich with trout from family *Salmonidae* and therefore the fish farm is planned for the production of native salmon species of fish - trout.

Fish farm "Paradise Valley" belongs to a group of cold-water fish farms and for typical production of trout belongs to the group of trout fish farms.

The location where fish farm is situated is influenced by Mediterranean and east-continental climate with average annual air temperature of 12⁰C.

2.1. Fish breeding

In this fish farm trout and carp are grown for consumption and also for other purposes such as stocking and sport fishing.

Fish farm "Paradise Valley" is provided with cool, clean, clear and unpolluted water which is rich with large amounts of oxygen. Initially fish farm operated as a not all-systematic or semi-systematic model for which it's characteristic that in it only particular technological procedures or breeding of trout were implemented, while the young fishes are derived from specialized hatchery from Hydro-biological Institute-Ohrid. In 2010 the fish farm "Paradise Valley" made its own hatcheries where successfully spawning of trout was performed. The work in the hatchery is laborious and requires considerable commitment, after performing of spawning immediately begins with cleaning and nurturing of the roe, which is very sensitive and which require a lot of attention in order to survive until to the exact time until the larva appears.

The first pool is for breeding of young fishes that is set to the highest point and which first gets water from the canal. The second and third pool are designed for sorting fish by size, while the fourth pool is intended for cultivation of carp (Aganovic 1979, Jovanoska 2015). The capacity of the pool for growing Ohrid trout is up to 4000 kg and the pool for carp to 3000 kg.

2.2. SWOT analysis of overall operation of fish farm "Paradise Valley"

Based on the stated above, SWOT analyze of a small fish farm "Paradise Valley" gives the following results:

1. Strengths
 - Good road connection with the environment
 - Ecological clean environment
 - Ideal Climatic conditions for the development of rural tourism
 - Hospitality of indigenes people
 - Clean and unpolluted river
 - Nurturing culture and traditional customs
 - Different forest fruit berries and herbs
 - Ideal conditions for the development of aquaculture
2. Weaknesses
 - Lack of educational and professional cadres for Tourism and Hospitality
 - Lack of proper education of subjects included in tourism activities
 - Lack of promotional material for the region
 - Insufficient awareness of the population for development of rural tourism
 - Low level of investment in the region
 - Reckless dumping of waste materials
 - Weak interest of local self-government
 - Reckless and over-exploitation of forest wealth
 - Insufficient using of IPARD funds
3. Opportunities
 - Interest for investment in the region
 - Encouraging of population for producing organic food
 - Encouraging of population to restore of traditional crafts
 - Encouraging of population for making domestic handicraft
 - Organizing of traditional events
 - Using of European funds for development of rural tourism
 - Interest for investment for development of winter tourism
4. Threats
 - Migration of rural population to urban areas
 - Elementary disasters
 - Losing of the traditional identity of rural areas

From this SWOT analysis for overall operation of the fish farm "Paradise Valley", it can be concluded that the fish farm is a successful example, primarily for the development of aquaculture, and thus to the development of rural tourism. Strengths are used as good road connectivity, clean and unpolluted river, and ideal conditions for the development of aquaculture. With the development of rural tourism in this area threats as migration of rural population and the loss of traditional identity of rural areas will be reduced.

2.3. Gastronomic tourist offer „Paradise summer terrace“

Tourists are increasingly looking for food offer that is characteristic of this place which highlights the culture and heritage of the place.

After the construction of the farm "Paradise Valley" in 2012 was opened a small restaurant, where fish lovers can taste the fresh fish produced in it, cooked in the traditional way, and old domestic specialties known from the region as traditional Macedonian cuisine .

The restaurant is situated in a beautiful scenery beside the river, in an extremely picturesque place, surrounded by fresh mountain air and untouched nature. Built from natural materials, authentic for rural environment - stone and wood.

2.4. Rural conditions as a component of tourist offer

Fish farm "Paradise Valley" and the restaurant "Paradise summer terrace" are made since 2008 until now. Fish farm and the restaurant are made from materials authentic for rural environment. Pools are built of stone, terraces are made exclusively of wood and stone, the paths are with gravel, and the entire equipment is of wood. The ambient is rural. There are: old costumes, mortars, other old tools, old tubes, barrels, cart, and whole look of the fish farm is in a rural ambient.

Clean river, clean air, mountains that surround it, forest flowers and everything other which surrounds this fish farm is far from the urban world, from the noise, from the air pollution. Everybody requires a place where everybody can escape from the everyday crowds, requiring a place where you can enjoy the choir of birds, the sound of the river. Also characteristic for this rural restaurant is serving in earthenware bowls. All domestic or traditional sauces are served in earthen pots placed on wooden planks (Rechkoska 1995).

2.5. Perspectives of fish farm “Paradise Valley”

It is planned to construct a lake for sport fishing, on which it could be organized a competition in sports fishing, then to build bungalows in an authentic rural ambient, and with that guests will be able to extend stay there, expanding the list of many traditional dishes that would be served in the restaurant besides fish specialties, and thereby increasing cooperation with the local population, where almost every woman can prepared many food specialties such as: gjomleze, pitulici, different pies and other domestic traditional dishes from this region.

There is a business plan to build greenhouses for organic food production, production of all types of vegetables and fruits. Foreign tourists and domestic, could, by themselves to get fruit from which they would like to make a salad. For the winter is planned to serve homemade pickles-zimnica and Macedonian fruit and fruit preparations: sweet from wild strawberries, sweet from blackberry, sweet from wild figs, quince jam, sweet of prunes. Walks with donkeys will be organized, which are particularly attractive for foreign tourists and for collecting fruits of nature.

The content for children's animation should be enriched. Although there is a ping pong table, swings, various toys for children under 7 years of age, the plan is to make small houses, small tables and benches, a place of sand figures, slides and similar.

3. DISCUSSION OF THE RESULTS

In this research 100 people are surveyed, of which 61% are male and 39% are female and most of respondents are of the age 26-45 years. Regarding the educational structure of the local population, the highest proportion of respondents are with secondary high education 62%, and in terms of employability, it can be concluded that even 50% of respondents are working, and for the rural area is quite good percentage. There is a chance that this percentage can increase with the development of rural tourism and creating new jobs.

On the question, whether small fish farms in this area can contribute for increased rural tourism development, 77% of respondents answered with yes.

Although the local population believes that their area is attractive for development of rural tourism, although it considered that rural tourism is developed in their area and that pretty much visits by foreign tourists are needed to develop rural tourism in the true sense of the word. For that cooperation between local people, local self-government is needed, 42% answered that local self-government is engaged in this, and cooperation with travel agencies have 36% of respondents. Unfortunately in this case cooperation is on low level. If this collaboration works to start in terms of meetings with locals trained people in the field of tourism (for which the survey shows that only 40% said they need), expression of ideas by locals, accepting suggestions by travel agencies, joint formation of an attractive offer which could be found in the program of travel agencies as a suggestion to visit, all that will increase and thus the development of rural tourism will go upwards.

On the question, whether development of aquaculture and building of bungalows and other facilities can increase visits, and open new jobs, 85% of respondents answered with yes.

72% of respondents answered that this place is visited by foreign tourists.

The questionnaire shows that tourists in the study area are offered only one day off because this area does not have accommodation. If accommodation capacities would be built, than creation of tourist offer will be enriched with additional services and attractions, and the length of stay of tourists in this rural area would increase.

Regarding awareness and utilization of IPARD funds for development of rural tourism, from results obtained through the questionnaire it can be concluded that the awareness of the population to use these assets is 57%. The local population is not informed how and why to use these resources and what is needed to be done to get to it. To overcome this lack of information the state should properly inform locals trained by people from the Ministry of Agriculture, Forestry and Water Economy, who will organize meetings

with the natives. Regarding the use of IPARD funds, 79% of respondents did not answer the question, and 21% were unable to collect documentation, which is not a good indicator.

On the other hand as the second reason for the weak utilization of these funds, is legislation and documentation which should be attached with the application. 58% of respondents applied for IPARD funds, but failed to obtain funds for objective reasons. Specifically in this case, for "Paradise Valley", it can't apply for utilization of funds from IPAD program for development of rural tourism because the documentation required building permit and this permit can't be provided. On the application to the Department of Urbanism to issue building permit, notification that can't be issued a building permit because there is no detailed urban plan and urban documentation for the settlement was received. With the Law on legalization of illegal constructed buildings Law on Treatment of Illegally Constructed Buildings form 2011, with later amendments from 2012, 2013, 2014 and 2015, the opportunity to legalize existing built facilities is got, and elaborate and all required documentation are done and applied to the Department of Urbanism, and this process of law legalization will be achieved. With simplification of this procedure relating to the application documentation for legalization of buildings, big part of the local population will take steps in investing in accommodation, which would accelerate the development of rural tourism in this area, and would open new jobs.

Regarding reasons for visits of this region, most of the respondents think that mountains, river and clean, unpolluted environments are crucial for the selection of the area as a tourist destination. It should be noted that in this area a lot of churches should be a part of the tourist offer. There is the Church of St. Nicholas dating from 1937, St. Demetrius 1997, the Church of the Assumption of the Virgin Mary 2001, the Church of St. Symeon, Very interesting event that have number of visitors is Kurajca Carnival traditionally held since 1997, on 13 and 14 January, and it should become a part of the tourist offer for sure. From all these above it can be concluded that small fish farms can be important factor for rural tourism development.

4. CONCLUSION

Fishing is a very important development factor, and needs for its intensification is present, based on the natural resources of the Republic of Macedonia, which unfortunately are not yet sufficiently exploited. The total water potential in Macedonia consists of: lakes, artificial reservoirs, streams and rivers, and artificial fish farms, and characteristics of the water for fish farming in Macedonia are convenient to standards.

Fish farm "Paradise Valley" is presented as a successful example of the development of fishing and rural tourism in the country because of its location, infrastructure features of pools and method of breeding fish and the restaurant "Paradise Terrace" in its composition and the offer in the restaurant. Special attention is paid to the reproduction of the Ohrid trout, which are necessary conditions for its reproduction, which have proven to be ideal, treating the roes and the way of growing of young fishes. Research has proved that the Ohrid trout as endemic species of fish from the lake can be grown

in this fish farm. Ambience, authentic materials, traditional way of preparing and serving food as well as cooperation with the domicile population are the main components for the hospitality offer in this rural area.

Based on the survey, and obtained results, for detected obstacles are proposed possible solutions. State institutions of the Republic of Macedonia responsible for this, must eliminate sooner shortcomings and administrative barriers through appropriate instruments, in order, to the future business entities which will engaged in such activities, to facilitate its work. Future researches will focused on what tourists want from this destination. Small fish farms directly influence on the development of rural tourism, in the Ohrid region and in the whole country.

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