

# Models of linking recreational tourism and agribusiness thought use of ICT

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**Abstract:** Paper is presenting results of project “With better cooperation towards better future” which is supported by University of Novi Pazar and Sanjak business association with focus on segment of project about investigating the possibility of application of information communication technologies in order to increase the visibility of tourism resources and linking individual farmers who can make their agriculture products, food, accommodation and other services available to tourists. This study addresses the issue of linking the tourist offers and offers of organic food from small agriculture households. The project treats the area of South Serbia and northern Montenegro, which is known for the beauty of mountain trails, glacial lakes, large cave systems, fast-flowing rivers and cuisine specialties. The aim of the project is to popularize this potential and its actualization within the tourist industry. This project involves the registration of pedestrian trails, bicycle paths, trails of photo safaris within the google maps system as well as within the specific mobile applications. The essence of the project is the implementation of mobile and other applications and electronic services to improve the lives of small farm households through the improvement of tourist offer, the development of organic production and enabling farmers to sell their products to final customers directly.

**Keywords:** tourist industry, organic products, market positioning

## **Introduction**

Paper is presenting results of project “With better cooperation towards better future” which is supported by University of Novi Pazar and Sanjak business association.

The focus of this paper is segment of the project about investigating the possibility of application of information communication technologies in order to increase the visibility of tourism resources and linking individual farmers and rural households who can make their agricultural products, food, accommodation and other services available to tourists.

This study addresses the issue of linking tourist offers and offers of organic food produced by small agricultural households.

The project treats the area of south west Serbia and northern Montenegro, which is known for the beauty of mountain trails, glacial lakes, large cave systems, fast-flowing rivers and cuisine specialties.

The aim of the project is to popularize this potential and its actualization within the tourist industry.

The project also involves the registration of pedestrian trails, bicycle paths, trails of photo safaris within the google maps system as well as within the specific mobile applications.

### **Scope of the research**

Starting hypothesis of the research is that there is no valid possibility of linking recreational tourism and agribusiness using ICT.

If this starting hypothesis is not confirmed that means that complementary hypothesis is valid and that is: There is at least one possibility of linking recreational tourism and agribusiness using ICT.

Authors have translated the idea of linking recreational tourism and agribusiness in adequate and usable model that has been constructed based on the research done in ten municipalities in south west Serbia and northern Montenegro. Research has been done using different research method including observing, interviewing and analysis of the existing solutions in this area.

Objective of the work is to find applicable model of linking recreational tourism and agribusiness that can be used as a base for developing adequate software solution.

In order to achieve this objective following research tasks had to be conducted:

- Analyse business of agricultural households in the research area, collect data on key challenges that agricultural producers face.
- Identify potentials for development of recreational tourism, collect data on key challenges that tourist organizations face in developing recreational tourism.
- Based on the collected data and their analysis, as well as SWOT and GAP analysis develop model that could improve market position of small agricultural households and at the same time improve tourist potential of the area.

In order to fulfil these research tasks authors have used data collection methods already mentioned. In addition to this, for the analysis of the collected data, following methods have been used: comparative method of existing solutions, SWOT analysis of agricultural producers

and SWOT analysis of the tourist potentials as well as GAP analysis of the agricultural households and tourist resources from the aspect of market potential and customer relations.

Separate chapter of this paper will cover each of the mentioned tasks.

### **Position of the agricultural households in the area**

Authors emphasize the fact that this is not a first paper dealing with the analysis of market position of small agricultural households in this area as well in other places around the world. Previous research in this subject are numerous and different authors showed development of agricultural households in the mountain areas from different aspects and tried to indicate the solutions to development of these areas. For this purpose, we will use existing information on position of small agricultural households in the mountain areas in official documents developed by teams hired by European Commission, FAO as well as strategies for rural development of the individual municipalities. Beside these documents authors use results of the work of Nobel Prize winner Muhamed Yunus that he presented in his book *Banker of the Poor*. Authors also reference work of Swinned that dealt with the challenges of marketing of small agricultural producers. In the part related to organization of small agricultural households authors, beside their own research, also reference results of Ravindran S.N. as well as Toader M. and Valentina G.R. that in separate papers covered challenges of sustainability of small rural households. In the part related to finances authors reference work of Zender R. that researched alternative sources of financing small agricultural households since classical sources of finance are hard to get or expensive for them. Also, authors rely on their own earlier publications covering individual segments of agribusiness development as well as tourism in the given area.

When development of small agricultural households is concerned following local, regional and national stakeholders and factors are most important (Plojovic at all. 2016):

- *Natural factors (land, insolation, availability of water...)*
- *Demografic factors (population, age, available information...)*
- *Infrastructure factors (road networks, communications, water supply systems, facilities for storage and processing agricultural products...)*
- *Community support (financial and organizational support from the municipality, national and international institutions, availability and willingness of support institutions...)*
- *Legal and economic environment (regulations regarding loans and financing, collateral...)*

*On the other hand, internal most important internal factors of individual agricultural households are (Plojovic at all. 2017.):*

- *Market entry*
- *Availability of financing sources*

- *Join use of land*
- *Infrastructure conditions*
- *Personal conditions*

Position of agricultural household depends on adequate development of these factors. Task related to this part of research is consisted of analysis which factors can be improved the most and which of them contribute most to the market position of the agricultural household.

As far as the data on current situation of agricultural households, authors present the information they obtained from the field research and using secondary data. Using method of generalization in some areas, authors used the collected data on sampled households to present the current situation agricultural households in the region.

Key challenge that individual agricultural producer face in the mountain areas of the west Balkans is access to markets for their products. If we take export of corn for example, we can see that it is one of the agricultural with the biggest export. However, these products are mostly not produced by the small agricultural producers, but instead it was produced by large agricultural corporations. One of the reasons is that large corporations, using the economy of scale, can afford to pay larger fee to rent the government land. At the same time they also negotiate buying the government land. Market present demands a capacity to be able to interact with the buyers constantly and continuously and inform them on the current offers. That part small agricultural producers can achieve best trough the joint use of resources.

Next factor is consolidating of land ownership, and that is mostly true in the mountain areas were land owned by individual producers is very limited and physically divided in different locations (see the attached graph).

As we can see, average size of the land owned by individual producers is very small and if we take into account information that this land is usually divided is several locations, not linked to each other that this situation becomes even more severe.

Data from the National Statistical Office show that available agricultural land in Serbia is 5,346,597 ha, accounting for 68.9 percent of Serbia's territory (7,759,200 ha). (Ševarlić, 2012, p. 37) The 2012 Census of Agriculture ascertained for the first time in the current public databases on land resources two very disturbing facts:

1. Total agricultural land (3,861,477 ha) is less than half (49.8%) of the total territory of Serbia (7,759,200 ha) and
2. even 424,054 ha or 11.0% of total agricultural land is not utilised, which makes 7.9% of the available agricultural land. (Ševarlić, 2012, p. 248, 249).

If we add to this information that number of rural population is in constant decrease at the same time when the land owned by individual producers is decreasing we can see a paradox caused by

the fact that many people that have enherited agricultural land decided not to cultivate it. The bad consequence of this is, as mentioned, that a large percentage of available agricultural land is not cultivated. Aging rural population is one more indicator that shows on bad current situation in rural areas. At an old age, rural population decrease their productivity dramatically. Also, readiness for change and embracing new production methods also decreases with age. There is also lack of motivation for new investment in agricultural production if there is no new generations to continue the work. All this indicates that demographic factors have very large influence on development of agricultural production in rural areas.

### **Potential for Rural Tourism**

Natural factors used for tourist valorisation are consisting of following elements: Geomorphology characteristics, climate, hydrography, plants and animal world. Initial factor for development of tourism is geographic characteristic of the area. Complex natural tourist values are best valorised by analysing geomorphological, climate, hydrological and biogeographical tourist elements.

In the tourist morphological sense the researched area is consisted of following parts:

- City valleys
- Mountains
- River valleys
- High plains
- Hilly areas.

However, in each of these parts there are many tourist potentials that are not know to a wider audience of current and potential customers.

Pester plain and Vlahovi, as well as mountains are part of the Dinarica mountain system.

Lower areas, river valleys as well as Pobrđa also part of this system.

Geomorphology characteristics as touristic value is consisted of complex geological materials, tectonically arranged valleys of river Lim, Uvac, Raska and Ibar as well as smaller valleys connected to them. Geomorphologic objects have special importance for the whole touristic valorisation.

Geomorphology of the researched area has mainly mountain characteristics were Pester high plain is in the central part and valleys of river Ibar and Lim in the east and west borders surrounded by mountains Haila, Prokletije, Golija, Radocela, Rogozna, Ninaja, Giljeva, Jodovnik, Zlatar and Mojstirskodraske mountains.

Although, the area is not suitable for communication infrastructure, valleys enable enough space to build roads necessary for development of tourism in this area.

Researched area, because of its geographic position is on the transit communications between main regional centres. Based on the number of tourists that visits and/or pass through this area we can conclude that the region has not used its potential as transitory position to attract more tourist revenue.

In this cross-border region, beside City of Novi Pazar, other towns and rural settlements are not established as tourist destinations, if we exclude several spa places and mountain Golija.

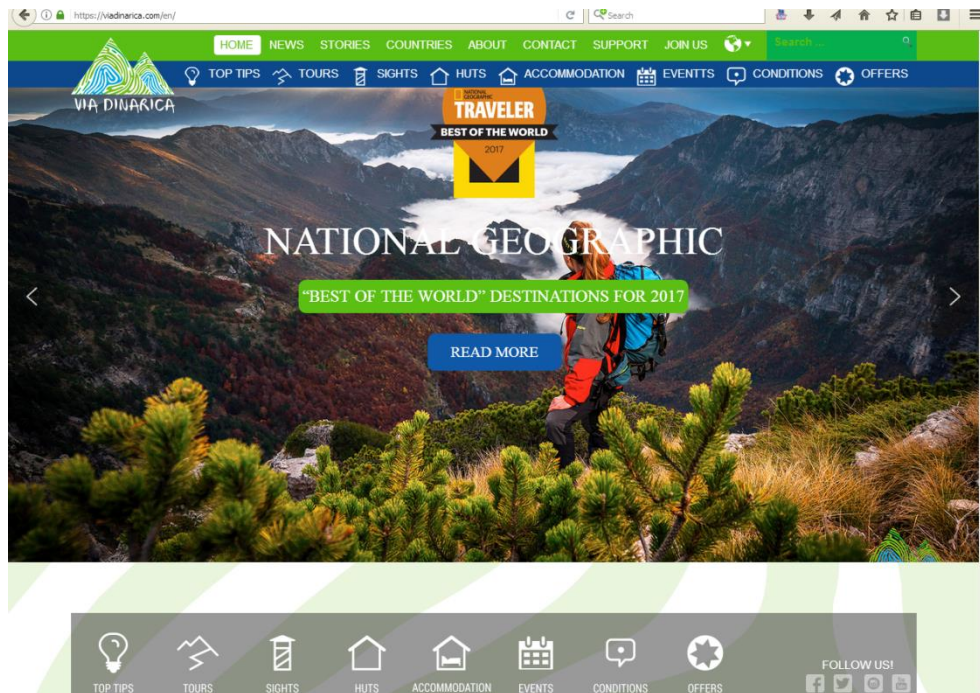
Group of closer regions and centres cover West Serbia and Sumadija in the west with the Pomoravlje. Bigger centres are Užice, Čačak, Kraljevo, Kragujevac and Krusevac. Other regions surrounding the area are Montenegro and Kosovo with centres like Kosovska Mitrovica and Peć.

In the near future, role of stronger source of tourists will have East and Central Bosnia and Bosnian Posavina including centres Sarajevo, Tuzla, Banja Luka, Brčko and others.

In the group of tourist sources centres further than 300 km are Vojvodina, East and South East Serbia with centres including: Belgrade as the capital, Novi sad, Subotica, Zrenjanin, Pancevo, and in the east and south Zaječar, Negotin, Bor, Nis, Leskovac and Vranje.

To all mentioned tourist sources centres more attention needs to be paid in order to promote tourist values and potential of the researched area.

The importance of this area, when it comes to recreational tourism can be best illustrated by project Via Dinarica ([www.viadinarica.com](http://www.viadinarica.com)). For the destinations that covers, the project received a received a “2014 Travel Awards: Best New Trail” by the Outside Online magazine (<https://www.outsideonline.com/1921701/2014-travel-awards-best-new-trail>) in 2014, and “Best of the world” destination for 2017 by the National Geographic Magazine (<https://viadinarica.com/en/blog/280-national-geographic-traveler-via-dinarica-medu-najboljim-svjetskim-destinacijama-2>).



Source: [www.viadinarica.com](http://www.viadinarica.com) , 20.04.2017.

Project Via Dinarica has an objective to map tourist potential along three routes through mountain pass of Dinarica mountains starting from Slovenia all the way through Albania. Three routes are marked as green, white and blue. Green and white route pass through area of southwest Serbia and northern Montenegro. It is hard to list all the tourist potential in one paper, but it is very important that they are generally recognized and to work on validating each individual resource.

Information collected by the authors about responses from tourists that visited these places show following:

- Road infrastructure is in very bad condition.
- Accommodation capacities are not distributed well.
- Tourist organizations are not focused on recreational tourism
- Near tourist attractions there is no safe accommodations and establishing camps.
- Mountain paths are not marked well.
- There is no adequate cooperation of tourist organizations and local communities.
- The mobile networks do not cover all the area
- Lack of cooperation between tourist organizations with an aim to create joint tours.

These are most common answers that authors have summarized from many answers that, unfortunately, indicate that actualization of tourist potentials is very low as well as awareness that these potential can be transformed in development potential of the region.

## Possibilities of linking recreational tourism and agribusiness

The research points to the possibility, that through the development of tourist potentials of recreational tourism, with adequate cooperation, to improve the position of small agricultural households.

The basic precondition for successful cooperation is a "win-win" strategy, that is to find a benefit in the cooperation for all sides. And if there is a benefit for a wider social community then a synergistic effect is achieved.

The current SWOT analysis of small agricultural households with focus on factors which can influence recreational tourism is given bellow:

<p><b>S</b> Organic production, Natural beauties, Clean air and water, Special features of cuisine products</p>	<p><b>O</b> The development of new products, Finding market niches, Direct contact with customers</p>
<p><b>W</b> Poor road infrastructure, Crushed production, Insufficient implementation of agro-technical measures, The problem of entering the market</p>	<p><b>T</b> Emigration of young people, Dependence on the buyer, Exclusion from strategic documents Media neglect</p>

In the SWOT analysis of the position of small agricultural households, many factors are noted: Bad road infrastructure, small scale production, insufficient application of agro-technical measures, the problem of entering the market, and so on. The essence of linking recreational tourism with agribusiness is to minimize the impact of these shortcomings. Reducing the impact of these shortcomings is reflected in the fact that recreational tourists do not request road infrastructure, since the essence of recreational tourism is movement of foot, visits of natural beauties, such customers are looking for products that are specific, special and with less use of biochemical treatments of modern chemistry. This approach, on the other hand, enables the leveraging of the advantages of agricultural households in the mountainous region, which are: organic production, natural beauty, clean air and water, the specificity of food products and many others. It also positively influences Chances, which are the development of new products, finding of markets niche, direct contact with customers. This approach also decreases likelihood of Threats occurring, such as emigration of youth, dependence on customers, exclusion from strategic documents and media neglect.

The current SWOT analysis of the offer of recreational tourism with a reference to the factors that can be influenced by linking with small agricultural households is given bellow:



<p><b>S</b> Organic production, Natural beauties, Clean air and water, Special features of cuisine products</p>	<p><b>O</b> The development of new products, Finding market niches, Direct contact with customers</p>
<p><b>W</b> Accommodation capacities not well distributed. Tourist organizations are not oriented towards recreational tourism. There are no safe conditions for lodging and camping near tourist attractions. Mountain trails are not well marked. Adequate cooperation between the tourist organization and the local population not establish.</p>	<p><b>T</b> Emigration of young people, Exclusion from strategic documents, Media neglect</p>

If we consider the improvement of the tourist offer as an improvement in the services that the customer buys, then the improvement of the tourist offer is also an additional benefit for the customer.

Adequate linking with agricultural households will greatly contribute to overcoming the shortcomings of the tourist offer. In the part of the accommodation capacities within the rural tourism, accommodation facilities can be created at the tourist site near tourist attractions. The goal of every agricultural household would be to get more customers and they would make an effort to conserve nature with an adequate improvement their offer. If an agricultural household is aiming to sell their products to tourists who are not going to use the accommodation services but want to camp, then the agricultural household has an interest in arranging and protecting camping sites in order to increase the sales of agricultural products. Since the rating of a tourist destination depend on the well-marked trails, then the agricultural holding has an interest in maintaining these markings. A software solution can facilitate exchange of information between tourists and agricultural households. Tourist organizations can be as support to the initiative, but with no need to be part of providing the service. As we have already talked about other factors of SWOT analysis in this paper, it is sufficient to justify the ways of reducing the impact of the weaknesses of the tourist offer

### **The proposed model of connecting recreational tourism and agribusiness**

Based on the analysis of the current state of small agricultural households and the analysis of the tourist offer, with reference to recreational tourism, the possibilities of linking have been considered. A model of linking recreational tourism and agribusiness with the use of ICT has been created.

To create this model following sets of activities are needed:

- activities related to the information system
- activities related to tourist offer
- activities related to agricultural households

The project implies the following activities related to tourist offer:

- Work on identification of tourist resources
- Valorization of tourist resources
- Gap analysis of the current and desired state of exploitation of tourist resources
- Mapping tourist resources through integration into Google Maps or similar navigation software
- Mapping roads to tourist attractions as well as mapping of the hiking, cycling and photo safari trails

The model implies the following activities related to agricultural households:

- Identification of households who are ready to offer their agricultural products to tourists
- Identification of suitable places for visiting
- Mapping of touristic facilities within tourist offers
- Preparation and training of agricultural households in order to increase their capacity to include catering services in the framework of their offer

The model implies the following activities related to the information system that would support the linkage of tourist offer and supply of agricultural households:

- Identification and creation of tourist routes
- Presentation of agricultural households on these routes and presentation of the services they provide
- Development of internet portal and mobile application that connects tour operators and agricultural households, as well as individuals tourists and agricultural households
- Development of a special form of social network that would gather visitors and users of these services
- Development of reservation, ordering and billing of products and services electronically.

The end result of these activities should be an interactive internet site that is linked to a mobile application. Data on tourist tours, attractions and places to visit are entered by Local Tourist Organizations. This creates awareness of the tourist offer. Using GPS values each location is shown on Google Maps application. Also, each of the tourist routes is presented as a tracking route on Google maps. Each route would have a full description, length, sights, hosts along the route, time to visit and the time needed to get around.

Registration of agricultural households, that is, obtaining a user account for every agricultural household would be done in local tourist organizations. After registering and obtaining the ID number, agricultural hosts would download a mobile app from the Google Play Store and enter their data. Every agricultural household enter general characteristics about their offer:

- Positioning on the map
- A short film about the household
- Products that they offers
- Indicative price list

Customers - recreational tourists can use either an internet site or a mobile application for tourists. Through the application, they can contact the tourist organization or individual households with their requests. For each request, the household with a confirmation also sends a pro forma invoice. After confirmation of the payment of funds to the household account the tourist services can be provided. In order to be able to further use the site and mobile application, both the household and the guest are obliged to evaluate each other in the system. In this way, the status and reputation of individual households is created.

The system is to be maintained by local tourist organization, and would be funded by the fees charged as a percentage to each financial transaction in the system. This would ensure sustainability of the model.

The authors also recommend that the agricultural households propose camping sites and build sanitation facilities and showers in the vicinity of those places. Some households might build special capacities for accommodation.

## **Conclusion**

The research carried out by the authors and the data they collected indicate that linking recreational tourism and agribusiness can contribute to following:

- Improving market position of agricultural households
- Improving local tourist offer
- Impact on local, regional and national factors to devote special attention to small rural households in the mountain areas.

This disproves the initial work hypothesis that there is no possibility of linking recreational tourism and agribusiness using ICT.

It also confirms complementary hypothesis which is: There is at least one possibility of linking recreational tourism and agribusiness using ICT.

This paper presents an overview of the research conducted by the authors with the aim to point out the unused potentials that can be used to improve the lives of small agricultural producers as well as recreational tourists. In order for this research to achieve its goal, it is necessary to disseminate the results of this research and take appropriate actions based on specific knowledge acquired through the research. This can contribute to improvement of the position of agricultural households, as well as the improvement of the tourist offer and thus contribute to better life of the local population.

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