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# CONTENTS

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**Ramutė Narkūnienė**

# EASTERN AUKŠTAITIJA REGION TOURISM COMPETITIVENESS ANALYSIS

Aim of the article – after the research of the theoretical concept of the destination's competitiveness study, evaluating the Eastern Aukštaitija region's tourism competitiveness compared to Orebro region in Sweden. One of the objectives of the article is to perform the research of theoretical concept of the destination's competitivenessstudy. Other objective is to perform the Eastern Aukštaitija region destination's competitivenesscomparative analysis with the Orebro region in Sweden. The first article conclusion is that competitiveness – is a complex concept, describing the object or entity's ability to compete and the changing of time, place and conditions. Competitiveness is often determined by the subject (state, company, group or individual) the economic and social well-being, prestige. Appropriately targeted for the competitive assessment use Wober distinguish factors: tourism resources, tourism infrastructure, staff competence, tourist market diversity, geographic environment, virtual environment and the image of tourist destinations. The second article conclusion – performing the comparative analysis of competitiveness, the overall average of tourism experts of East Aukštaitija region in Lithuania is 7.5 points, while the Swedish tourism expertsevaluate the competitiveness factors in thus – the average of assessment is 6.38 points.Representatives of Orebro regional tourism in Sweden evaluate their factors influencing for the region's tourism competitiveness below than the Eastern Aukštaitija region tourism representatives in Lithuania.

**Key words:** tourism destination, region, competitiveness.

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**Relevance of the topic.** Countries, regions and cities competitiveness problems annually attracts more and more attention of researchers. The authors of scientific articles analyse the concept of the competitiveness, highlights the key competitive factors, analyse their impact on overall competitiveness. Formed different strategies, applying different measure, granting the financial resources for the increasing the competitiveness of the regions. The growing of the destination's competitiveness should primarily build on the main factors of the identification of competitiveness determinants and appropriate using these factors in the competition.

A large variety of these different factors has different influence for the country's tourism destination. This article aim is to compare the competitiveness tourism factors in the Eastern Aukštaitija region in Lithuania and Orebro region in Sweden.

**The research problem:** There is no Eastern Aukštaitija region's tourism competitiveness study, so is the topic of the article is relevant.

**Article object:** competitiveness of tourism destination.

Aim of the article – after the research of the theoretical concept of the destination's competitiveness study, evaluating the Eastern Aukštaitija region's tourism competitiveness compared to Orebro region in Sweden.

**Objectives:**

To perform the research of theoretical concept of the destination's competitiveness study.

To perform the Eastern Aukštaitija region destination's competitiveness comparative analysis with Orebro region in Sweden.

**Methods of the research:**

1. Analysis of the scientific literature.
2. Comparative analysis of competitiveness, using a «web» sketches (spider plot).

## 1. THEORETICALS ASPECTS OF THE TOURISM REGION'S COMTETITIVENESS

The concept of competitiveness has always been in the focus of scientists, politicians and businessmen. There is no common approach to competitiveness in the world's scientific community. This is due to the competitiveness is extremely complex concept rather than a situation or condition that is measured by one or more parameters.Competitiveness is often determined by the entity (state, company, group or individual) the economic and social well-being, prestige. Competitiveness can be dealt with researching the various levels of objects and subjects: state, national union, city or country, economic sector, company or organization, product or service. The term competitiveness comes from the Latin word concurrentia, meaning a struggle, competition, competition. Competitiveness – is a complex concept, describing the object or entity's ability to compete and the changing of time, place or conditions.

Regional competitiveness problem was investigated by «region» is understood as an integral part of the state is less than the state itself. This approach allows the watch to the region as a complex, open and vibrant socio-economic system of a larger space. Porter, Crouch, Ritchie and Hassan and other scientists analysed the competitiveness theories and models. Nowadays, competitiveness is determined not of the country available resources, but develop resources: workforce knowledge, skills and ability to innovate, improve and etc.

M. E. Porter (1998) entered a competition «diamond» model, proposed a different model of competitiveness.

Porter, in order to deepen the analysis of the competitive factors, perform the study of the competitive success in various countries and found that the most determining factors are the competitive labour costs, interest rates, exchange rates and economies of scale (1998). Economic competitiveness occurs unevenly in different countries, so it makes sense that the factors that determine the economic competitiveness of the different locations are different. According to Porter's competitive advantage could be perceived as «the country's ability to create an environment that will enable businesses to grow and innovate faster than foreign competitors.»

This is achieved by enabling the four groups of factors (Porter, 1998):

Competition structure – country's government formed a legal environment which entails the establishment of new businesses and activities. Intense competition forces companies to make greater efforts: to innovate, to offer higher-value products and thus increase their competitiveness.

Demand characteristics – it is the country's consumer features. Larger and more affluent market is able to activate the ups and attract more foreign investment.

Supporting sectors – that others economic sectors, will associated with the company: suppliers, financial institutions, partners and other business services, making the market more attractive to investors.

Factors in performance – this natural resources, labour market and education level of knowledge, technology, infrastructure and so on.

According to the «Diamond» model, the competitive advantage of the territory should be interpreted as the ability to create an environment that will enable companies in the region to improve and innovate faster than competing regional businesses. According to Porter, competitiveness of the company and the competitiveness of the region – are not identical concepts. Competitiveness of the company shows market share and profitability, and competitiveness of the country or region depends on how productive use of available resources.

Porter offers to use geographical advantages of the region creating a clusters of related companies.

The world's most famous regional competitiveness development plan was the Lisbon strategy. The Lisbon strategy is most known for its main purpose – to make 2020 the European Union «the most competitive and dynamic knowledge-based economy in the world capable to create sustainable economic growth, with more, better jobs and greater social cohesion and respect for the environment.»

Global trends and priorities are changing, so at this point it is essential that the tourism sector have been competitive and balanced. It must be recognized that the long-term competitiveness depends on sustainability. Integrating sustainability into their activities, tourism stakeholders will maintain a competitive advantage. The over arching challenge for the tourism sector – persist competitive, while also embracing sustainability, recognizing that the long-term competitiveness depends on sustainability.

Due to the globalization process countries and regional competitiveness has became a policy instrument. For the programming period 2007–2013 European Union has paid particular attention to improving the competitiveness of the regions as a way across the country to economic and social cohesion. Strategy «Europa» 2020 states that the single market to reach 2020 year strategic objectives, where competition and consumer stimulate growth and innovation, as well as the need to strengthen the competitiveness of the European tourism sector.

Wober (2002) suggests the evaluating the competitiveness of the tourist areas, to compare them using the Web sketches. Wober (2002) distinguishes 6 competitiveness factors: resources, tourism infrastructure, staff competence, touristmarket diversity, geographical and virtual environments.

In summary, the analysis and assessment of the destination's competitiveness evaluation factors of economic competitiveness assessment purposeful use Wober to distinguish factors of tourism resources, tourism infrastructure, staff competence, tourist market diversity, geographic environment, virtual environment and a destination's image.

## 2. RESEARCH OF THE EASTERN AUKŠTAITIJA REGION TOURISM COMPETITIVENESS

### 2.1. Methodology of the Eastern Aukštaitija region tourism competitiveness

When evaluating the competitiveness of the country, analysing the competitive situation between the countries. By analogy, assessing of the region's competitiveness, region is compared with other regions in the same or in another foreign country. Therefore necessary properly select the indicators that accurately reflect the competitive advantage of formation opportunities.

**Survey methods:**

– Comparative analysis of competitiveness, using a «web» sketches (spider plot).

For the preparing the comparative analysis of the region competitiveness, the competitiveness indicators of Eastern Aukštaitijatourism region are comparing with the competitiveness indicators of Orebro Region in Sweden. For this purpose, are interviewing the Eastern Aukštaitija experts-tourism specialists (representatives of the tourism information centres), and the Swedish Orebro tourism information centre experts-tourism specialists, who have evaluated the competitiveness factors in 10-point system.

Evaluating the essential factors of competitiveness, web cart schemes method was carried out. Each web radius corresponds to one of the factors, characterizing competitiveness. Web centre meets the minimum total value of the factors, while the external parameter – the maximum.

The most important principles in choosing comparative partner are: similar geographical situation; similar size (the organization / location); similar structure, the essential processes and products; similar market and its development prospects; comparative partner – is a true leader in its field.

Tourism competitiveness indicators of Eastern Aukštaitija region in Lithuania are compared with the tourism competitiveness indicators to a similar Orebro region in Sweden.

**2.2. Analysis of the tourism competitiveness of Eastern Aukštaitija region**

Eastern Aukštaitija region consists of Utena, Anykščiai, Ignalina, Molėtai, Zarasai districts and Visaginas municipality. Regional centre is the Utena city.

The situation of tourism sector in in Eastern Aukštaitija region. Although in recent years in the local and inbound tourism growth in volumes, but visitor flow is reduced in Eastern Aukštaitija. In evaluating the flow of foreign tourists observed that their maximum flow enjoys Zarasai district, but in other areas of the region this flow is significantly lower. This shows that foreign tourists do not tend to visit other parts of or the entire region. In order to increase the number of foreign tourists and even distribution needed for closer regional cooperation, information exchange and joint regional tourist routes and /or tracks forming. While one foreign tourist expenses are higher than domestic tourists, but particular attention should be paid to the local tourism as Lithuanian population constitute an absolute majority of accommodation establishments and rural tourism visitors to and thus absolute value of local tourist expenses accounts for the bulk of tourism incomes. A tourism development direction necessary action-oriented measures to prolong the day visitors «delay» in the region, but not necessarily seeking of accommodation of visitors.

There were 175 rural homestead in region in 2012 year. This concluded 28.9 % of the country's total number of rural tourism homestead. According to this indicator, Eastern Aukštaitija region lead in the country in whole period. Assessment of the situation in the region by area, can note that rural tourism homestead are very evenly distributed in the region.

In order to increase the competitiveness of the region, using local resources, it is important to identify how the tourism experts are evaluating them. In the questionnaire survey, tourism experts were asked to evaluate the competitiveness of the Eastern Aukštaitija region, which is defined by the following criteria: resources, tourism infrastructure, staff competence, the tourist market, variety of geographic environment, virtual environment.

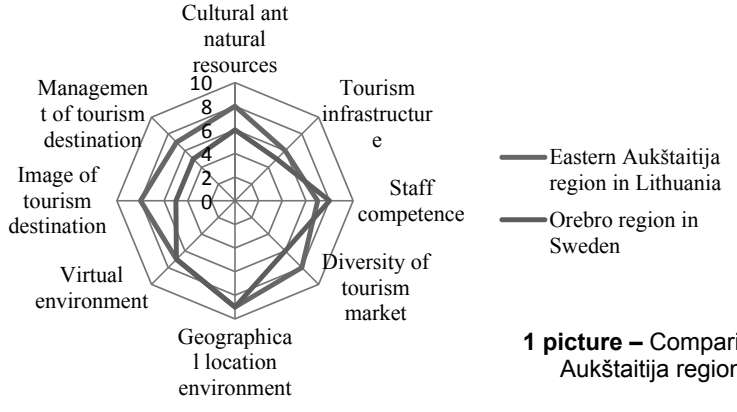
Were interviewed tourism experts – representatives of Utena Tourism Information Centre, (TIC) Molėtai TBIC (Tourism and Business Information Centre), Anykščiai TIC, Zarasai and Ignalina districts TIC. All respondents rated the tourism competitiveness of Eastern Aukštaitija region by assessing each criteriain 10 points system (1 point – very poor condition, 10 points – excellent condition). Total average of tourism competitiveness of Eastern Aukštaitija region is 7.5 points.

Development of regional tourism in Sweden. Sweden is one of the major European countries – to its territory almost equal for France (450 thousand square kilometres), but with a small population number (about 9 million).

Sweden from most of the other countries differ by long distances of the continent and the population is concentrated in the middle of a triangle whose corners are located in the three largest cities – Stockholm, Gothenburg and Malmo and along the Norrland coast. 80% of people live in 30% of the country's territory. Population density – 21 people in one square kilometre and the distribution is very uneven. It is also unevenly distributed and economic activity, and what led to the emergence of this trend on the domestic politics, as regional, which took place in several stages of development.

Regions concept is used to describe many types of geographical, administrative and functional regions. Sweden is currently divided into 21 lens – this division of the territory began in the seventeenth century, when lens changed provinces (although at that time lens number and frontiers has changed many times. In addition, influencing EU, the recently created NUTS system, large regions in Sweden distinguished by combining several lens. At the same time saved informal division of the country into three large historical-geographical region – Gotland, Svealand and Norrland (the southern, middle and northern Sweden). According to the Sweden regional policy perspectives can also use other options division of the country districts, highlighting the whole range of types of regions with special needs and conditions.

Orebro region in Sweden.Orebro is a region in central Sweden. 140,599 inhabitants live here. Region surface area – 1380 km2. 2209 employees from 71,447 working in in the tourism sector, hotels and restaurants. Orebro city is a very nice city in centre of Sweden. Among the population are immigrants from 150 different countries. Orebro city is from Stockholm 200 miles distant, from Gothenburg and Oslo – 300 km, it is a natural logistical centre in Scandinavia. Its attractive dislocation makes Orebro attractive for multiplier business in the region and an ideal place for




**1 picture –** Comparison tourism competitiveness criteria in Eastern Aukštaitija region in Lithuania and Orebro region in Sweden, Web cartoscheme

conferences and fairs.A well-developed infrastructure rail and buses, as well as Orebro airport infrastructure. Orebro is a bicycle city in Sweden. There are a lot of bicycle paths and a number of places you can rent an inexpensive municipal bicycles. Orebro offers many interesting tourist attractions, most known is the castle, built in the 13th century.

**2.3. Comparison of Eastern Aukštaitija region in Lithuania and Orebro region in Sweden evaluating of competitiveness indicators**

Comparing Lithuanian and Swedish competitiveness of countries in general (2013 year): Sweden is in the 9th place, and Lithuania is in 49th place (The Travel and Tourism Competitiveness Report 2013).

Orebro region's tourism competitiveness indicators were obtained by interviews representatives of Orebro tourism information centre.

Evaluating the competitiveness of regions, representatives of tourism the both regions equally evaluated only two criteria: geographic environment – 9 points and a virtual environment – 7 points. Representatives of Sweden tourism region evaluated a higher score (8 points) only staff competence. Representatives of Eastern Aukštaitija tourism region evaluated staff competence by 7 points. All other indicators representatives of Sweden tourism region had evaluate a lower score: cultural and natural resources – 6 points (representatives of Eastern Aukštaitija tourism region – 8 points); tourist market diversity – 6 points (representatives of Eastern Aukštaitija tourism region- 8 points). Representatives of the Sweden tourism region was evaluated by the lowest score tourist infrastructure – 5 points (representatives of Eastern Aukštaitijatourism region – 6 points); the destination's image – 5 points (representatives of Eastern Aukštaitija tourism region- 8 points); and management of tourist destinations – 5 points (representatives of Eastern Aukštaitija tourism region – 7 points). Representatives of Eastern Aukštaitija tourism region was evaluated by the lowest score 3 indicators: tourism infrastructure, image of tourism destination and management of tourism destination.

Total evaluation average representatives of Eastern Aukštaitija tourism region is 7.5 points, while the evaluation average of representatives of Sweden tourism region is 6.38 points. So, representatives of the Orebro tourism region in Sweden was evaluated own competitiveness of the tourism in the region below, than the Eastern Aukštaitija tourism region representatives.

**CONCLUSIONS**

1. Competitiveness – is a complex concept, describing the object or entity's ability to compete and the changing in respect of time, place or conditions. Competitiveness is often determined by the entity (state, company, group or individual) the economic and social well-being, prestige. Analysing and evaluating the destination's competitiveness evaluation factors, for the competitive assessment of purposeful use Wober distinguish factors of tourism resources, tourism infrastructure, staff competence, tourist market diversity, geographic environment, virtual environment and add a destination's image.
2. Performing a comparative analysis of competitiveness, the overall average of representatives of Eastern Aukštaitija tourism region is 7.5 points, while the overall average of representatives of Sweden tourism region is 6.38 points. Representatives of Orebro Sweden tourism region was evaluated their region's tourism competitiveness factors below than the representatives of Eastern Aukštaitija of tourism region in Lithuania.

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**Željko Bjeljac, Aleksandra Terzić, Marko D. Petrović**

# CULTURAL ROUTES – THE DEVELOPMENT OF NEW TOURIST DESTINATIONS IN SERBIA

Cultural routes can become interesting tourist destinations because of their connections to renown places, events and personalities. The process of forming cultural routes as tourist products is considered a new principle of protection, revitalization, use and presentation of cultural heritage. In Serbia, the concept of cultural routes is in its development. The scope of this article is to examine the interrelation of cultural routes in Serbia with European cultural routes. The main goal is to determine to what extent their connection to the existing European cultural routes contributed to the tourism promotion of Serbia.

**Key words:** cultural routes, tourism, destinations, Serbia.

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## Discussion

Cultural and natural attractions in last two decades become a very important component in constituting the attractiveness of tourism destinations. The concept of cultural routes[2] that is already widely applied in Europe and the world is still in the initial phase in Serbia. In scientific literature there is a considerable number of tourist studies that have been carried out in diverse cultural and natural geographic attractions (Apostolakis, 2003; Meyer, 2004; Moscardo, Pearce, 1999; Richards, 2000, 2007; Chhabra et al., 2003; Stanojlović et al., 2011; Timothy, 2007; Terzić et al., 2014, 2014a, Бьеляц и др., 2014a; 2014b). Since cultural routes appeared, in 1980s, as an example of well-connected, specially designed and thematically envisioned tourist products. Their popularity is constantly growing. They are placed into a context of a visit to a greater number of destinations, expanding to whole regions, countries and even international space. Combination of the cultural exchange and social values are creating the recognizable identity for each cultural route. Even though their main concept is not primarily focused on the tourist use, they are, beside the cultural, representing the tourist product as well. Cultural routes had proven to be an extraordinary opportunity for the tourism development in underdeveloped regions that have valuable cultural or natural resources (Meyer, 2004). Tourism based on cultural routes is the form of heritage promotion. It is a tourism method often used with the goal of exploitation of heritage along with its conservation, protection, tourist use, as well as initiation of local social-economic development. Under the term cultural route usually we consider the determined way of travel, consisted of roads and paths with a specific landscape, natural, cultural or historical values. It includes the sightseeing and the interpretation of sites that are incorporated into the cultural route. The basic concept of cultural route is the linking of a series of tourist attractions. It has a goal to promote tourism in the region and encourage tourists to travel from one location to another (Terzić, 2014).

However, there is a need in establishing the sustainability and finding the proper ways in the creation of such cultural products. They should enable the cultural heritage to be revived and experienced by both, residents and tourists. This can be achieved through the incorporation of scientifically developed methods and implementation of specific measures. These must be supported by the government, with an aim of putting the heritage into public use and profit making. It must be done in terms of sustainable development, followed by ensuring the proper management and protection of cultural assets (Terzić, 2014).

## Cultural routes in Europe

Based on global trend the number of cultural routes, cultural districts (Di Pietro et al., 2013) in the world is growing. These concepts were developed in Western Europe (Italy, France), considering that Europe has the richest cultural heritage and is the most visited destination of so-called

»cultural tourists (Terzić et al., 2014a). The Cultural Routes Programme was launched by the Council of Europe in 1987 (www.coe.int/routes). Routes requesting the certification should meet some basic conditions:

- focus on a theme representative of European values and common to several European countries;
- follow a historical route or a newly created thematic route;
- give rise to long-term multilateral co-operation projects in priority areas (scientific research; heritage conservation and enhancement; cultural and educational exchanges; contemporary cultural and artistic practices; cultural tourism and sustainable development);
- be managed by one or more independent, organized networks (in the form of an association or a federation of associations) (www.coe.int/routes).

In 1998, the Council of Europe entrusted to the European Institute of the Cultural Routes the task of monitoring the Cultural Routes program as a whole. Since 1987 until 2014 the 29 Pan-European cultural routes were established. European cultural routes can be classified based on geographical model: national, regional and pan-European. According to the dominant theme of route they can include pilgrim routes, dedicated to the renowned personalities from European culture, architectural and artistic heritage from different epochs of Europe's history, etc. Some of the established European cultural routes are mass-visited, with several million tourists every year (e.g. *The Santiago de Compostela Pilgrim Route*).

**Cultural routes in Serbia**

The presentation of cultural heritage through cultural routes and itineraries is in line with the preferences of the Strategy of the tourism development in the Republic of Serbia. Cultural (thematic) routes are presented as the priority axis of the national strategy of tourism development. They are represented in a long list of proposed, preliminary and completed projects based on the creation and promotion of cultural and thematic routes in this region. Strategies for valuation of cultural heritage in line with the cultural route development and revitalization of cultural in the Republic of Serbia, demand the acknowledgment of their specific importance (Terzić, 2014). The cultural routes within the Republic of Serbia begin to form in the last few years. They are usually promoted by the Department of Tourism under the Ministry of Trade, Tourism and Services and the Ministry of Culture of the Republic of Serbia, as well as by the National Tourist Organization. Cultural routes constitute a significant element of tourism offer and tourism promotion of Serbia. The cultural routes in Serbia are usually created within defined theme, extracted from the historical or nature-based context of the region they cover in their scope. Most local and regional cultural routes in Serbia were developed in the cross-border areas and are the result of the tourism initiative developed under the CBC IPA programme on national level and are financed from European funds (Bjeljac et al., 2014). In recent years the focus of numerous development projects funded by the European Union are relating to the Danube. These are specially defined by the recently created EU Strategy for Danube region.

On national level, several studies and pilot projects on creation of cultural routes «Roman Emperors Path» (Ministry of Trade, Tourism and Services), «Fortresses along the Danube» (Ministry of Culture, under the patronage of UNESCO), Transromanica (Ministry of Culture and Council of Europe) and «Valley of the kings in Ibar valley» (Tourist Organization of Serbia). There are several thematic programmes developed by National and local tourist organizations based on wine tourism (Wine routes of Serbia and Vojvodina), several thematic routes in DKMT region («Happy times of peace» secession routes, «Folklore without borders», «Wandering in the pantry of the Monarchy» industrial, agricultural and water management memorials, «Recreation without borders» wellness tourism, etc.). In implementation phase are the creation of cultural route «Roman emperor's path» which include the whole territory of Serbia (historical province of Iliric) where 17 Roman emperors were born. A great number of Roman remains are located in the Danube region of Serbia, where Roman Danube Limes was created. This route presents ancient roman towns, roads and archaeological remains, such as: *Sirmium* (Sremska Mitrovica); *Singidunum* (Belgrade); *Viminacium*; *Trajan's road* (Iron Gate, Danube); *Felix Romuliana*; *Naissus* (Niš); *Mediana*; *Via Militaris* (Niš-Sofia); *Justiniana Prima* (Terzić et al., 2014b). The Danube is one of the most important waterways of Europe. Because of the geographic location of the Danube valley, the Roman, Bizantium, Hungarian and Ottoman empires built great fortifications along the banks of the river. The cultural route «Fortresses along the Danube» represent very important element in the process of the development of the tourist offer of the Danube region om Serbia. The route includes seven large fortresses (Bač, Petrovaradin, Belgrade, Smederevo, Ram, Golubac and Kladovo), dating from different historical periods, which are proclaimed to be the cultural monuments of exceptional or great national importance. The other tourist route with great scope is The Danubean Wine Route, that includes 12 wine regions in Europe, and in Serbia it covers Central and Eastern Serbia, spreading over Sava river and Danube river (Belgrade – Požarevac).

Certain branches of pan-European cultural routes are spreading over the Serbian territory: *Transromanica, Atrium, on the architecture of totalitarian regimes of the 20$^{th}$ century, The Réseau Art Nouveau Network, and The European Route of Jewish Heritage*. Cultural route *Transromanica* represents a tourist route with the most important Serbian cultural, historical and religious monuments from the Middle Ages (the period of formation of Serbian medieval state). The route consists of several monasteries Žiča, Studenica, Gradac, George Pillars and Sopoćani (12$^{th}$ and 13$^{th}$ century), representing the so-called *Raška Ar-*

*tistic School of Architecture* (www.serbia.travel/culture/the-cultural-route). These historical monuments have immense national importance and are the important element of Serbian national identity. Moreover, they have a significant impact on tourism promotion of Serbia. *Secession route* and *The European Route of Jewish Heritage* are passing through the Northern parts Serbia, especially focusing on Subotica and Novi Sad, that are multi-ethnic and possess specific architecture.

In 2013, the cluster of cultural routes in Serbia was founded (cluster-culturalroutes.org). It is a nonprofit organization with a goal to promote Serbia and the Balkans as a cultural tourism product through specific routes such as *The Valley of the Dragons* that present the route of the mythological heroes of Serbian epic culture. The Institute for the Study of Cultural Development has mapped out two industrial cultural routes whose future could become very significant for the sustainability of industrial cultural heritage in Serbia. These are The *Nikola Tesla and Stanojević Ways* (which includes places where the great inventors stayed and worked in Serbia) and *The Mining Route – The Balkans as a Cradle of Metallurgy* (Graf, 2013).

**Conclusions**

The concept of the cultural route is based on the representation of the hierarchical system of goals. On the top there is the goal of conservation and protection, which is a key objective: it is consistent with modern economic and environmental goals of sustainable development. The inclusion of significant funds in the development of cultural routes in Serbia, demands for cultural heritage to be incorporated into the route and by its revitalization to become more appealing to tourists. The economic benefit of the investment in the evaluation of protected areas and cultural monuments can be found in the planned inclusion of these areas into the national tourism promotion. When it comes to a complex tourism products such as cultural routes, it an absolute necessity to incorporate different institutions (engaged in the field of culture, education), public associations and organizations in the process. Different initiatives and activities that would advance the cultural life of a local community and by that also enrich the tourist offer occur in various places. Such results can be achieved only with cooperation on multiple levels. It takes a lot of effort to carry out the initial research and define the investments needed for the establishment of a cultural route. Even bigger effort is needed for its maintaining and flexible adaptation to new development opportunities.

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# TOURISM IMPACT ATTITUDE SCALE (*TIAS*) AS A TOOL OF CONTEMPORARY ANALYSIS IN AGRITOURISM

The paper deals with the examination of the attitude of residents in the village settlements in Vojvodina Province (Northern Serbia), which represent the most developed in terms of agritourism in Serbia. To achieve that, authors of the paper used Tourism Impact Attitude Scale (*TIAS*). Exploratory factor analysis is used for the analysis of the gathered data about interconnections of the sets of variables. Eventually, all 23 items of *TIAS* scale grouped into four factors which explain the total of 47.467 % of the variance. The factors are titled in the following way: *Personal and community benefits; Negative impacts of tourism development; Concern/support for local tourism development;* and *General opinion about tourist development*. All the four factors defined in this paper have a theoretical, empiric and scientific background, and the grouped items have shown insignificant deviations from the prevailing scientific results and conclusions of the theorists who have tested the same scale. Thanks to the obtained results, the similarity and support to items grouped in factors obtained according to the original research results in this paper can clearly be noticed.

**Key words:** agritourism, *TIAS* scale, exploratory factor analysis, Vojvodina Province, Serbia.

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## 1. Introduction

In modern research of tourism globally, agritourism is its very important and increasing segment of travel industry. Agritourism includes tourism activities on farms, which provide specific kind of agritourism products and services. Sznajder et al. (2009) suggest that agritourist activities involve the following: farm-stay, (whether it is private accommodation or camping), educational visits, recreational activities or selling agricultural and home-made products. On the other hand, Stojanović (2007), states that agritourism is part of so-called *alternative types of tourism,* which appeared in 1980s as a consequence of the so-called 'green consumption' trend, as well as a consequence of the awareness of travelling in accordance with the environmental protection.

In his paper on agritourism, Nilsson (2002) and in Petrović (2013; 2014) define this type of tourism as a basic segment of rural tourism. According to Nilsson, rural tourism is based on rural environment in general, while agritourism is based exclusively on farms and farmers. Clarke (1996) explains that there are certain spatial differences in agritourism. Namely, if the accommodation is not on the farm, then it is agritourism, while farm-stay means that the agricultural environment and its offer are included in the product (e.g. being involved in agricultural work, riding a tractor, processing products, etc.). The problems in agricultural production have encouraged farmers and the creators of the agricultural policy to search for alternative activities, so agritourism being one of them (Illbery et al., 1998).

In 1994, American professors Lankford and Howard (1994) wrote a scientific paper with the title «*Developing a Tourism Impact Attitude Scale»* according to results of their field research in the USA. Contrary to all the previous similar scales (Pizam, 1978; Milman & Pizam, 1988; Liu & Var, 1986; Ap, 1992), the authors' intention was to overcome the previous omissions by using a multidimensional or multivariate *Likert Scale*. Thus, in their work, they designed and presented a unique model for measuring tourism impact on the attitude of local population (most often in agritourism), called *TIAS (Tourism Impact Attitude Scale).* This scale was created on the basis of several important methodologies suggested by eminent theorists such as Likert (1967), Churchill (1979) and Parasuraman et al. (1988).

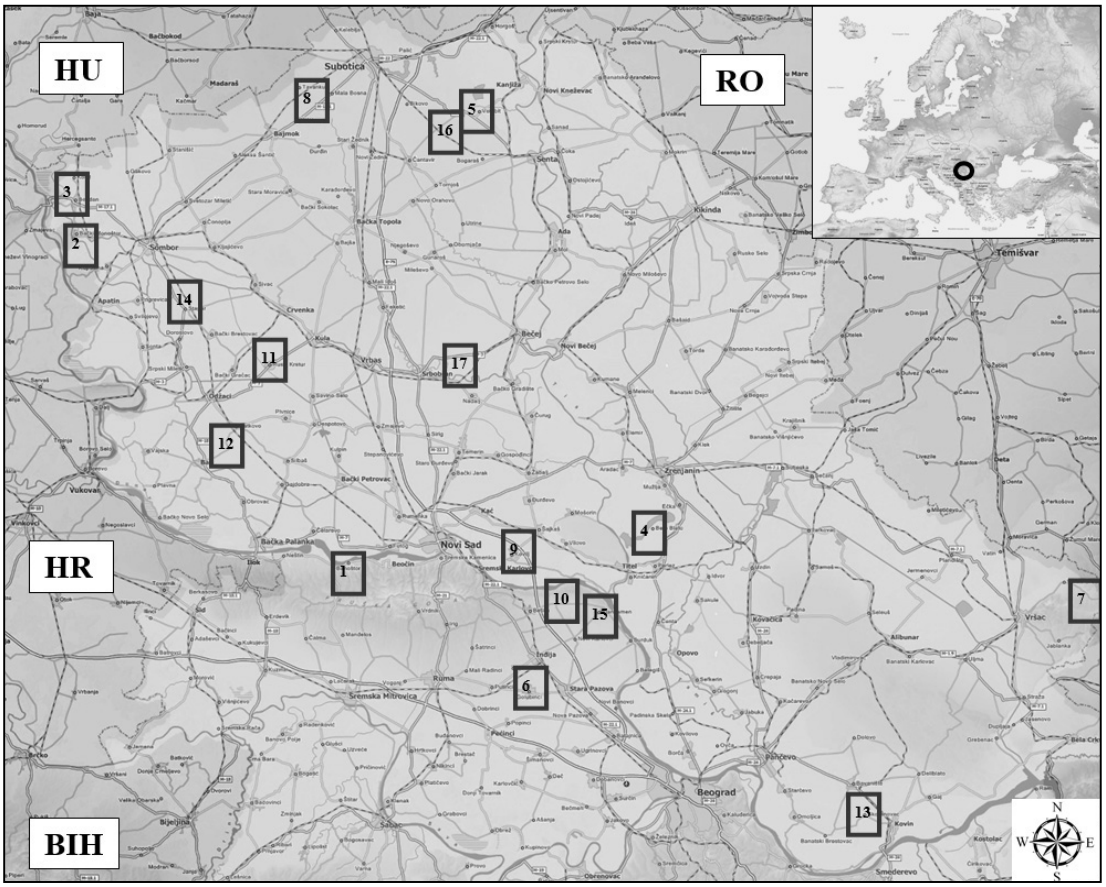
According to mentioned research, the aim of this study was to examine the attitude of residents in the 17 village settlements in Vojvodina Province (Northern Serbia) which are the most representative (the most ready) in terms of agritourism in Serbia. The selection of the village settlement has been done ac-

cording to the recommended settlements within the project «Wealth of Diversity» of the Danube Tourism Cluster of Serbia «Istar 21», supported by the Government of Vojvodina Province (Map 1).

The data obtained by using a modified questionnaire made with the help of standardized *TIAS* scale for measuring the impact of tourism development on the attitudes of local population in the selected village settlements. The scale consists of 18 independent variables and 27 dependent variables grouped in four factors. The aim of the research was to describe the characteristics of the population sample and to examine the attitudes of local population towards tourism impact in the settlements they live in. The main problem issues of this work refer to the analysis of data of poll research which was conveyed several times during 2013 and 2014 among the most numerous target groups. The analysis should point to the significance of the impact of agritourist development on the life of local population in the selected village settlements in Vojvodina Province.

All the interested respondents in the researched villages participated in the poll. The condition was that their domicile address was in the observed village. The examination of the target groups was done by personal poll, i.e. with the technique «face to face» or they were give some time to fill the questionnaire (not longer than two weeks). The research questionnaire *(TIAS)* direct polling of the population in the analyzed villages; of 300 distributed poll papers in total, 228 have been answered correctly, which represents the final number of the examinees who participated in the statistical analysis (N=228), i.e. 76 % of the response rate. According to the theorist Babbie (1986), the response rate among the examinees which is on the level of 70 % and above that share, is considered to be a good indicator of the measurement scale acceptance. Bagozzi (1981) states that the assessments using statistical methods will be good only when the sample comprises the minimum of 51 observed units. According to these statements, it can be noticed that the sample in all the presented researches is adequate for good statistical assessments (N≥51).

**Map 1.** Geographical location of analyzed villages in Vojvodina Province (Northern Serbia)[1]




Ratio: 1cm ≈ 15 km; Source: Made by authors in 2014
(The basis of the map was taken from: http://www.moto-berza.com/str/mapa-srbije/)

1 The villages which were chosen and which are analyzed in this work and listed in alphabetical order are the following: 1. Banoštor. 2. Bački Monoštor. 3. Bezdan. 4. Belo Blato. 5. Velebit. 6. Golubinci. 7. Gudurica. 8. Donji Tavankut. 9. Kovilj, 10. Krčedin. 11. Ruski Krstur. 12. Selenča. 13. Skorenovac. 14. Stapar. 15. Stari Slankamen. 16. Totovo Selo and. 17. Turija. These 17 village settlements are distributed in 13 Vojvodina Province municipalities: Beočin, Sombor, Zrenjanin, Kanjiža, Stara Pazova, Vršac, Subotica, Novi Sad, Inđija, Kula, Bač, Kovin and Srbobran.

**2. Results and discussion**

Exploratory factor analysis is used for the analysis of the gathered data about interconnections of the sets of variables. Lankford and Howard (1994), the creators of *TIAS* scale, got the items grouped in two factors in their results (research in the USA). *Factor 1* was titled «concern for local tourism development» (18 items), while *Factor 2* interprets «personal and community benefits from local tourism development» (nine items). However, in the same year (1994), Lankford et al. tested *TIAS* scale in rural areas of the island of Taiwan, where he got five factors in total, which were titled as: «positive promotion», «negative promotion», «tourism impacts», «public services» and «benefits from tourism» (p. 226). Three years later, theorist Rollins (1997) applied *TIAS* scale for his research and got a four-factor structure.

Besides the fact that the items were grouped in separate factors «community benefits from tourist development» and «personal benefits from tourist development», in Rollins's results also the factors titled «general opinion about tourist development» and «negative impacts of tourist development» were obtained. It turned out that results of factors grouped in this way showed statistical significance and that they could serve as an efficient modification of the original two-factor scale. Schneider et al. (1997) got different number of factors with the unchanged items, depending on the country where they conveyed their researches. So, in Indonesia and Japan they got a three-factor, and in china and Jordan a five-factor analysis. In all the researched countries, the scale results showed statistical significance and Cronbach's α coefficient – they got the largest one in China (0.90), and the smallest in Jordan (0.71).

Theorists Harrill and Potts (2003), in their results on the territory of South Carolina (USA), got three factors: «negative impacts», «economic benefit» and «cultural benefit» (p. 239), and excluded eight original items, because of the low coefficient values of factor difficulties (19 items were accepted, which were previously used in the reference Lankford et al., 1995). The first factor shows 22.38 % of explanatory variance in the attitudes towards tourist development, the second one shows 17.63 %, and the third one 17.59 %. As Wang et al. (2006) claim, *TIAS* two-factor scale has proved to be a very useful model for measuring attitudes of the population in rural areas of North Carolina (USA), where they left out seven items because of low coefficient values of factor burden. Their results show that «gender», «age» and «residents' participation in tourist development» do not show great statistical significance in both of the factors, while «education level» and «personal benefits from tourist development» show high significance. The research was repeated two years later by the first two co-authors (Wang & Pfister, 2008), leaning greatly on *Factor 2* of *TIAS* scale, i.e. on the segment concerning «personal benefits from tourist development». More precisely, the authors wanted to find out what the correlation was between the attitude towards tourism and personal benefits of individuals from tourism and confirmed the expected hypothesis that the more individuals have benefits from tourism, the more positive the attitude towards it is. At the same time, it should be emphasized that those benefits are not only of financial nature, but they are also cultural, social and psychological benefits. It is interesting to point out that Woosnam (2012) used a two-factor *TIAS* scale with the total of 16 original variables taken and which showed high factor burden. He titled the factors: «support to tourist development» (nine grouped items) and «tourist contribution to the local community» (seven grouped items) (p. 322). The titled factors are counterparts to original titles in the factor analysis results by Lankford and Howard. For such a decision an explanation was provided: the taken items showed significance in previous scientific researches (Wang et al., 2006; Wang & Pfister, 2008), and the other ten items which proved to be inappropriate for the selected target examines were left out. Finally, the items with the lowest values in the original research (Lankford & Howard, 1994) were also left out.

According to the presented previous findings, for the needs of the main components analysis in this work, all the 27 original questions were taken. Kaiser-Meyer-Olkin measure value was 0.741 which exceeds the recommended value of 0.60 (Kaiser, 1974). Also, Bartlett's test of sphericity has achieved the needed statistical significance ($p$=0.000) which confirms the justification of the application of exploratory factor analysis.

The main components analysis has discovered the presence of four components with characteristic values above 1 (one), which is explained by 17.175 % (*F1*), 11.582 % (*F2*), 9.698 % (*F3*) and 9.012 % (*F4)* of the variance. After the forming of factors, the rotation was done by using the method of Varimax rotation. The aim of the rotation is that each variable has to be representative with as few factors as possible and with as good as possible spatial arrangement.

The reliability of the measurement instrument was checked by using Cronbach's Alpha Reliability Coefficient. This measurement instrument is among the most commonly used indicators of closeness whit items which the scale consists of (Pallant, 2011). In an ideal case, Cronbach's alpha reliability coefficient should be above 0.7 (DeVellis, 2003), but the values of this instrument are very sensitive to the number of items on the scale. As Pallant (2011) states, short scales (fewer than 10 items) usually have quite small Cronbach's coefficient (below 0.5) so in that case it is more appropriate to calculate the mean inter-item correlation. In this case, the recommended values are from 0.20 to 0.40 as optimal scope of inter-item correlation (Briggs & Cheek, 1986). Even though the reliability coefficients are below 0.70 are generally considered unacceptable, sometimes the coefficients above 0.60 are accepted. According to Lehman et al. (2005), the ideal value of internal consistency value is in the interval from 0.80 to 0.90.

The coefficient value for the first, third and fourth factor exceeds the recommended (ideal) value of *0.700, (F1=0.885, F3=0.709, F4=0.710)*, while the value of the second factor is close to the recommended value (*F2=0.693).* Cronbach's alpha coefficient for the whole scale of 23 items is *F1-F4=0.863.* The presented data point to the fact

that the set model is reliable (Nunnally, 1978) and the obtained results are scientifically supportable.

After the conveyed factor analysis, the pure factor structure has been obtained with high coefficients. Four items have been excluded from the model due to their low values of factor burden coefficients (below 0.40) and they are: «As a priority, the province should develop tourism according to a plan» (0.37), «Benefits from tourism exceeds the negative impacts» (0.31), «Long-term planning of municipal authorities could control the pressure of tourism on the environment» (0.00) and «It is necessary to execute the tax payment for the tourism development» (0.00).

Thus, a model with 23 items grouped into four factors which explain the total of 47.467 % of the variance has been obtained and the factors are titled in the following way:

***Factor 1 (F1)*** **–** Personal and community benefits,

***Factor 2 (F2)*** **–** Negative impacts of tourism development,

***Factor 3 (F3)*** **–** Concern/support for local tourism development,

***Factor 4 (F4)*** **–** General opinion about tourist development.

Table 1 – Exploratory factor analysis for F1-4

| Factors | Items (Variables) | Factor loading | Characteristic values | Explained variance | Cronbach's coefficient α |
|---|---|---|---|---|---|
| ***F1*** | ***F1a*** – My village has better roads and pavements thanks to tourism development. | .729 | 6.130 | 17.175 | .885 |
| | ***F1b*** – The quality of public services (health care, cleanness, water supply, protection from fire…) in my place has been improved thanks to tourism development. | .772 | | | |
| | ***F1c*** – I have more money thanks to tourism. | .850* | | | |
| | ***F1d*** – Tourism has an impact on the improvement of my life standard. | .816 | | | |
| | ***F1e*** – I have more possibilities for recreation (new sports fields, playground for children, swimming pools…) since tourism developed in my place. | .725 | | | |
| | ***F1f*** – The jobs provided by tourism are very attractive. | .540 | | | |
| | ***F1g*** – In my place the number of shops has risen as a result of tourism development. | .723 | | | |
| | ***F1h*** – Tourism will have a leading economic role in my place in the future. | .558 | | | |
| ***F2*** | ***F2a*** – Settlements in this municipality should not initiate the attraction of a great number of visitors. | .603 | 2.719 | 11.582 | .693 |
| | ***F2b*** – Tourism has a negative impact on the environment preservation. | .549 | | | |
| | ***F2c*** – The noise from the existing tourist activities has a negative impact on the life in my place. | .605 | | | |
| | ***F2d*** – In my place the amount of rubbish has risen due to a larger number of visitors. | .513 | | | |
| | ***F2e*** – Tourism reduces the possibilities for the recreation outdoors in my place. | .418 | | | |
| | ***F2f*** – Tourism has influenced the rise of crime rate in my place. | .637* | | | |
| | ***F2g*** – Visitors have a positive impact in my place. | .612 | | | |
| ***F3*** | ***F3a*** – In my place, tourism development should be actively supported. | .689* | 2.248 | 9.698 | .709 |
| | ***F3b*** – My place has resources to become an attractive tourist destination. | .649 | | | |
| | ***F3c*** – Tourism should become the main economic branch in my place. | .471 | | | |
| | ***F3d*** – Tourism development in my place will provide more opportunities for employment of local population. | .590 | | | |
| | ***F3e*** – I am against building of tourist facilities which will attract a large number of visitors to my place. | .633 | | | |
| ***F4*** | ***F4a*** – The community should stimulate a more intensive building of tourist facilities. | .792 | 1.719 | 9.012 | .710 |
| | ***F4b*** – Tourism plays and important role in the economy of the community. | .677 | | | |
| | ***F4c*** – Municipal authorities are right if they support tourism development. | .798* | | | |

*The marked figures represent the values with the highest burden within this factor.
Source: Created by the authors according to the data in SPSS 18.0

### 3. Conclusions

On the other hand, the research results from the island of Taiwan (Lankford et al., 1994) have also grouped the items (seven) into the factor of the same name, and by comparing them with the obtained results in this work, it can be noticed that six items are identical and with similar factor burden. The greatest difference of 0.28 is noticed with item *F1f*, which can be explained by the fact that the jobs which are provided by tourism in the analyzed villages of Taiwan are more attractive than the jobs which are present in the observed villages of Vojvodina Province. It leads to the conclusion that in rural areas of this east-Asian island agritourism is more developed and that the local population considers the jobs provided via tourist development very attractive, which is present on a much lower level in the analyzed villages of Vojvodina Province. The only left-out factor in the case of this research it is *F3d,* which has been set in the factor *Concern for local tourist development* in this paper. This statement is explainable by the fact that local population in Vojvodina Province, having the opinion that tourism will affect a large number of the employees in their settlement, at the same time has concerns about the general well-being and the development of their community, which can be considered as a justifying result.

***Factor 2*** includes the total of seven items. The factor burdens range from 0.418 (the lowest burden) for the statement that tourism reduces possibilities for recreation outdoors, to 0.637 (the highest burden) for the statement that tourism has contributed to the increase of crime rate in the local area. Even though in the original research of *TIAS* scale (Lankford & Howard, 1994) this factor was not defined, in this work *Factor 2* has been titled according to the later works by Rollins 81997), Schneider et al. (1997, in the cases of Indonesia and Jordan) and Harrill and Potts (2003). Even though Rollins got five items within this factor (not including the two which have been obtained in this work: *F2a* and *F2g),* all the items are identical with the items grouped in this factor and with similar factor burden (e.g. the greatest difference of 0.25 has been noticed in the case of *F2d).* This difference can be explained with the fact that the increase in the amount of rubbish is still not a big problem in the observed villages in Vojvodina Province, due to the absence of mass participation in agritourism and the profile of visitors to such tourist destination (so-called alternative types of tourists).

Like their predecessors, Harrill and Potts also got five items in this factor. However, item *F3e* which, in this work, is within the factor *Concern for local tourism development* (the same as in the original research by Lankford and Howard), in the case of these authors, it was comprised in *Negative impacts of tourism.* Such a phenomenon is not worrying, since in Rollins this item is in the factor *General opinion about tourist development,* so it can be interpreted in several ways. In the case of this work, the objection to building tourist facilities which will attract a large number of visitors to the rural areas of Vojvodina Province can certainly be considered a concern for local tourism development by local population. Generally, agritourism, according to its characteristics, does not include mass building of facilities or great tourist migrations, which is more often the characteristic of destinations with swimming tourism on shores of oceans, seas, lakes or with mountainous, skiing tourism.

***Factor 3*** comprises five items in which the factor burdens range from 0.471 (for the statement that tourism should become the main economic branch in the observed settlement) to 0.689 (for the statement that tourism development should be actively stimulated in the settlement). *Concern for local tourism development* is the title of this factor, which originates from the title of the same name in the original study of *TIAS* scale (Lankford & Howard, 1994) and in several other scientific references (Wang et al., 2006; Wang & Pfister, 2008; Woosnam, 2012). Even though in the original research 18 items were grouped in this factor, in this work all the five items are identical with those in the mentioned research and with relatively similar factor burdens. The greatest difference in the burdens is noticed in the variable *F3c* (0.288), which can be explained with the fact that a large share of the number of examinees in Vojvodina Province think that tourism should become the main economic branch, but together with agriculture, as a traditional, vital and dominant economic activity in the analyzed settlements.

Like their predecessors, Wang et al. (2006) and Wang and Pfister (2008) have also got a great number of items grouped within this factor (12 in total). From the five items within *Factor 3* in this work, four match the research of the listed authors, since they eliminated item *F3d* because of the low factor burden. All the other items have similar factor burdens, and the largest difference of 0.173 is noticed in *F3a.* This can also be explained with the conclusion that the residents in rural areas of Vojvodina Province may not have completely understood the meaning of the statement that in their settlement tourism development should be actively stimulated, and that is why the greatest difference in burdens has been noticed between the obtained results of the two observed works.

In his work, Woosnam (2012) got nine items in total within this factor. Contrary to previous comparisons, the defined *F3d* in the work belonged to the second factor in Woosnam's research («Tourist contribution to the local community»), while the remaining four showed similar factor burdens as in this research. The largest difference in burdens of 0.229 is also noticed here in *F3a*, which leads to the same conclusion which has been presented in the previous paragraph.

***Factor 4*** groups the smallest number of items on the scale, three in total. The title of the factor *General opinion about tourist development* is formed according to the work by Rollins (1997), who defined the total of four factors in his results. Within this factor, the author has interpreted the grouped 18 items. All the three obtained items in the results of the work completely match Rollins's findings, as well as factor

burdens where the differences are small. The largest difference of 0.140 is noticed in *F4a,* which leads to the conclusion that the examinees in both of the rural areas (the Island of Vancouver and Vojvodina Province), in a relatively similar amount, think that their communities should stimulate an intensive building of tourist facilities in their local areas, with the aim of a more successful tourist development.

According to the presented facts, it can be noticed that all the four factors defined in this work are justifying, i.e. they have a theoretic and empiric scientific background. All the four factor titles have been explained and the grouped items have shown insignificant deviations from the prevailing scientific results and conclusions of the theorists who have tested the same scale. Thanks to the obtained results, the similarity and support to items grouped in factors obtained according to the original research results in this paper can clearly be noticed. According to everything said, it can be concluded that agritourism in Vojvodina Province is becoming one of the strategic and most efficient ways of scientific research and future development of rural areas in this part of Europe.

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# ECOLOGY AS A BASIS FOR SUSTAINABLE RURAL TOURISM DEVELOPMENT IN SERBIA

Environmental pollution, alienation from nature, standardization and uniformity that provides life in cities caused rising demand for holidays in rural areas. A large number of different geographical areas with preserved ecosystem, rich gastronomic offer, as well as a number of different activities that can be performed in nature, represent a basis for planning development of sustainable rural tourism development in Serbia.

Paper focuses on the ecology and sustainable rural tourist development, having in mind, good preservation of the natural environment resources which Serbia has. This can be basis for the construction of rural tourism planning Serbia as a country with preserved biodiversity where visitors can enjoy in a «healthy» and active rural holidays.

**Key words:** ecology, sustainable development, tourism, rural areas.

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**Introduction**

Government of Serbia defined rural development as an economic, social and environmental priority. The diversification of the rural economy in a socially, economically and environmentally sustainable way is need order to improve the quality of life, to reduce the poverty level, as well as to fight against social and environmental degradation. Tourism has been identified as key sector which can drive to the diversification of the rural economy.

In «Strategy of the development of tourism in the Republic of Serbia» under the notion rural tourism it is emphasized that «rural tourism includes spectrum of activities, services and additional contents which organizes rural population on family households in order to attract tourists and to make additional profit respecting the principles of sustainable development and preservation of natural resources»[1].

**1. Concept of sustainable rural tourist development**

Document «Agenda 21»[2] signed at the Rio conference in 1992 represents one of the most comprehensive with sustainable development issue.This document was signed by 178 Governments of the UN member states. It contains 40 chapters in 500 pages. Full name of the document is «The Rio Declaration on Environment and Development, and the Statement of principles for the Sustainable Management of Forests». Among the other things, this document discusses about interaction of tourism and agriculture in the fourteenth chapter when explains the concept of multifunctional agriculture. Full title of the chapter is *«A. Agricultural policy review, planning and integrated programs in the light of the multifunctional aspect of agriculture, particularly with regard to food security and sustainable development*».

Sustainable rural tourist development should recognize rights and needs of local residents (farmers), respecting their resources (natural, social, antropogenic), lifestyle, culture, and taking account that these factors can have influence on exploitation of local resources, touristic, natural and all the other.[3]

The aim of researching sustainable development is to be taken of the impact of economic and social growth in the overall ecological processes and the very quality of the environment.

Sustainable tourism represents a way to meet the needs of present generations, both tourists and residents, without arrogant interpretation ability of future generations to meet the needs of soybeans.[4]

**2. Serbian resources for sustainable tourist development**

As it is well known, rural areas cover more than 80 % of the Serbian territory and on these areas ac-

1 Strategy of the development of tourism in the Republic of Serbia, first phase report, Ministry of Trade, Tourism and Services of the Republic of Serbia. November, 24. 2005. p. 69.

2 Web link: https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf(05th March 2015)

3 Bakic, O. (2003): „Marketing at tourism“, Faculty of Economics, Universtiy of Belgrade p.33.

4 Baum, T., (1996): “Managing Human Resources – in the European Tourism and Hospitality Industry”, Thompson Business Press, London, p.9.

cording to the Register from 2002. lives 43,6 % of the total number of population. Serbia doesn't have an exit to the sea coast and there is only one real ski resort centre «Kopaonik» (if we, based on the circumstances, leave out Brezovica, located in Kosovo and Metohija).

According to these data it could be concluded how big potential Serbia has for the development of rural tourism and how big importance of rural areas is for the whole life.

Currently 10 % of Serbian territory covered protected areas[5] From the aspect of quality of preservation the environment, Serbia on the whole has largely preserved natural environment. Serbia has 5 national parks with high quality of the environmental protectionFruškagora, Djerdap, Kopaonik, Tara, and Sharplanina.

In Serbia, a number of laws regulating the relationship to environmental protection. Certainly in the first place among the most important are *the Law on Environmental Protection*[6],aswellasnumerous by laws, suchas, forexample, *the Regulation on Protection of Natural Rarities*[7], *Regulation on putting under control the use of trade in wild fauna and flora*[8] as well asnumerous otherby-lawsthat directlyregulate therelationship tothe environment.

From the aspectof tourismand its rolein the preservationandprotection of the environmentas the most importantlegal documentemphasizesthe *Lawon Tourism*[9], and thenthere arenumerous bylawsthat accompanythisimportant document.

The Government of the Republic of Serbia adopted a number of strategic documents related to environmental protection. Some of them are:

- National Strategyof the Republic of Serbiafor the approximation of environmental (December 2011);
- National Strategy onthe sustainable useof natural resources;
- Strategy of management mineral resources in the Republic of Serbia by 2030 years.
- Strategy and Policy industry Development of the Republic of Serbia for the period from 2011 to 2020.
- Strategy of Biodiversity the Republic of Serbia for the period from 2011 to 2016.
- Draft Waste Management Strategy for theperiod 2010–2019.
- National Strategyforthe inclusionof the Republic of Serbiain the Clean Development Mechanism of the Kyoto Protocolto the sectors of waste management, agriculture and forestry.
- The strategy for in troducing clean production in Serbia[10].

A detailed review ofprotected naturalheritagein Serbiais given in Table 1.

Table 1 – Protected natural heritageof theRepublic of Serbia

| | Republic of Serbia | Central Serbia | AP Vojvodina | APKosovo andMetohija |
|---|---|---|---|---|
| Total | 1.106 | – | – | – |
| National Parks-total | 5 | 3 | 1 | 1 |
| Nature parks-total | 14 | 4 | 9 | 1 |
| Landscapes-total | 17 | 14 | 2 | 1 |
| Area of exceptional importance | 11 | 8 | 2 | 1 |
| Reserves-total | 73 | 45 | 21 | 7 |
| Special Nature Reserve | 15 | 4 | 11 | – |
| General Nature Reserve | 1 | 1 | – | – |
| Monuments of nature-total | 312 | 192 | 85 | 35 |
| Natural Monumentbotanical character | 257 | 152 | 83 | 22 |
| Natural Monument geological and hydrological character | 55 | 40 | 2 | 13 |
| Areasofculturalandhistorical significance-total | 43 | 32 | 6 | 5 |
| Total protected the native goods | 464 | – | – | – |
| Naturalrarityplant species-Total | 215 | – | – | – |
| NaturalRaritiesspecies-total | 427 | – | – | – |

Source: Institute for Nature Conservation of Serbia – http://www.zzps.rs/novo/index.php?jezik=sr&strana=zastita_prirode_zasticena_prirodna_dobra (05th March 2015)

**3. Sustainability and competitiveness of tourist destination**

The characteristic of the modern tourist restructuring is installation of efficient environmental components in the overall tourism product and its promotion, treating it as a very important link for the achievement of competitive position and condition for attracting new tourist demand. Even more mounting environmental components is a priority task for the reintegration process in Serbia contemporary tourism flows, i.e. its responsibility in the tourism market and strengthen its competitiveness.

5 Data from Institute for nature converstation of Serbia.
6 Official gazette RS, no.135 /2004, 36/2009, 72/2009.
7 Official gazette RS, no. 50/93.
8 Official gazette RS, no. 31/2005 and 45/2005.
9 Official gazette RS, no. 36/2009; 88/2010; 99/2011, 99/2011 and 93/2012.
10 All strategies can be taken at official web of Serbian Government: http://www.srbija.gov.rs/vesti/dokumenti_sekcija.php?id=45678

Based on the model of tourism competitiveness is made by *Vengesayi S.,* (2003)[11], popularization tourist destinations can be enhanced by appropriate combination of factors of competitiveness and attractiveness. On this basis can ask questions:

– How to make the brand in a rural area, as well as
– What are the factors of attractiveness and competitiveness of destinations crucial (responsible) for the creation of a new rural brand?

In process of answering this question, it should bear in mind what concept of modern tourism approach particularly recommended, it is ecology and sustainable development.

The answer is more than justified, since it is obvious that the urban environment every day more and more polluted. Tourists today want ecologically clean environment in which they can spend their free time and be able to consume organically produced «healthy» foods. Continuously strengthen the requirements for the environmental quality of products and services on the one hand, but also it strengthens needs of local residents to preserve their own natural environment on the other. Therefore, these dual interests meet in sustainable tourism development. That's the key how to achieve the complementary development of rural and sustainable tourism.

Principles of sustainable development focus on:

– Understanding the value and level of influence of many different factors on the environment;
– Preserving, protecting and improving the quality of existing natural and anthropogenic sources, insisting on the regional aspect of development planning;
– Insistence on strict standards in the construction of tourism infrastructure;
– Providing a good balance of economic, social, environmental and other objectives.

Implementation principles of sustainable tourism development in the primary focuses put questions:

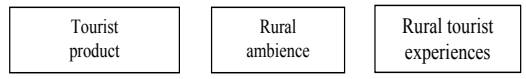
– Understanding of the value and power of influence of numerous factors on the environment;
– Preservation, protection and improvement of the quality of the natural, cultural, historical and other resources;
– Emphasizing the regional aspect of development planning;
– Establishing rigorous standards for the construction of tourist infrastructure.
– A good balance of economic, social, environmental and other aims.

From the strategic point of view, the development of tourism needs to emphasize the issue of the environmental, health, recreational value and specificity of receptive space.

**4. Tourist destination management model through concept of sustainability**

Regardless of the type of tourist destination, surely that the main value of destination is its environment, and that is also for what is primarily directed tourism demand. When it comes to rural tourism, it is a rural area. People from urban centers visit rural areas to get «rural tourist experience» in the interactive relationship.

**Figure 1 –** Components of rural tourist experiences




Source: «Master plan for sustainable rural tourism development in Serbia (2011), p. 115–116. UN Joint Programme «Sustainable Tourism for Rural Development», Ministry of Economy and Regional Development, Ministry of Agriculture and Water Management, National Tourism Organization.

Both components (the tourist product and rural ambience) must contain a strong environmental component to help tourists to get the full «rural tourism experience.» Only if it has been complying with all environmental standards about the way how to protect natural environment, it can be concluded that the destination has a tourist attraction in terms of tourism demand, i.e. tourism is competitive from the aspect of tourist attractions. For that reason, it is priority to protect and develop quality of environment, because only if it is protected, i.e. fulfill standards which are prescribed by law, it represents value and tourist attractiveness, and it is also a subject of tourist demand and interest. In that sense priority question is management of tourism influence on environment, and quality of rural area.

In destination exist conflict of interest between those who seek to preserve the natural environment and those which nature of business leading to its jeopardizing. Task of tourist destination management is to generate all interests in one «Local Agenda 21 for Tourism» (Program for Sustainable Tourism Development) and realizing a plan that should cause that Local Agenda 21 become part of the integral strategy for tourist destination development.

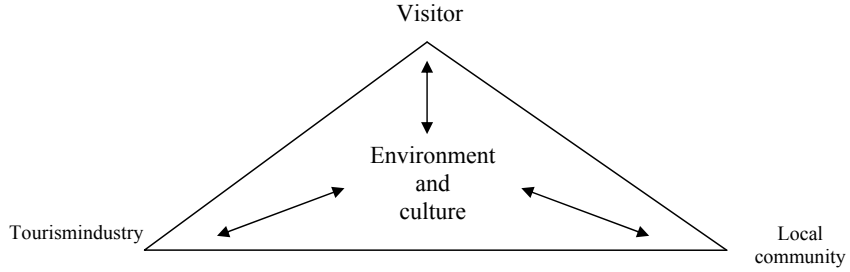
In the model, known by the acronym VICE (*Visitors, Industry, Community, Environment*) the point is that in a unique way make connections of interests of all stakeholders who will have benefit from the decisions on sustainable development of tourist destination.

UNWTO (2007)[12] define that the VICE model (figure 1) presents destination management as the interaction between the visitors, the industry that servers them, the community that hosts them and the environment where this interaction takes place. The last of these, the environment, can be understood in its broadest sense to include built and natural resources on which many tourism products are based.

11 Vengesayi S., (2003) *A Conceptual Model of Tourism Destination Competitivness and Attractivness*,ANZMAC 2003, Conference Proceedings Adelaide, 01-03 Decembre 2003. p. 637-647, Retrieved July 11, 2010,web link: http://anzmac.org/conference/2003/papers/CON20_vengesayis.pdf (на дан 01.03.2015).

12 UNWTO (2007): «A Practical Guide to Tourist Destination Management», Madrid, p.13.

**Figure1 –** VICEmodel




Source: UNWTO (2007): «*A Practical Guide to Tourist Destination Management*», Madrid, p. 13.

According to this model, it is the role of destination managers to work through partnership and joint destination management plan in order to:[13]

– Welcome, involve and satisfy Visitors;
– Achieve a profitable and prosperous tourist industry;
– Engage and benefit host Communities;
– Protect and enhance the local Environment and culture.

The «*Master plan for sustainable rural development*»[14] presented:

– Ecological strategy,
– Strategies to protect natural and cultural resources and management,
– The inclusion of rural area in regional waste management system,
– The introduction of renewable energy and support in their use,
– Minimizing environmental risks and their management,
– Social awareness and community involvement,
– Improving nature tourism.

These proposals (Strategies) actually represent the same time the condition and the «need» how to develop rural tourism and in the same time protect natural and anthropogenic sources for future generations.

**Conclusion**

Making tourism more sustainable, means to take into account the economic, social and environmental impacts and needs in planning and development, and applies equally to tourism in the cities, «resorts», mountains, rural, sea side, and protected areas. Without proper planning and tourism management at destination, it may cause compromising the natural environment; also can cause social and cultural conflicts and can lead that residents will be alienated from tourism. Sustainable tourism manage with impacts of tourism on the environment, the economy and the local community, it maintains and improves destination resources for current and future needs, both for tourists and local community. These are the important basis on which must be based tourism development in rural areas of the Republic of Serbia. That is imperative in process of preserving natural and social resources for the future generations of tourists and residents.

13 UNWTO (2007), same, p. 13

14 *Master plan for sustainable rural tourism development in Serbia* (2011), p.115–116, UN Joint Programme «Sustainable Tourism for Rural Development», Ministry of Economy and Regional Development, Ministry of Agriculture and Water Management, National Tourism Organization.

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**Ielenicz Mihai, Nedelcu Adrian**

# ROMANIA. LANDSCAPE AND TOURIST ATTRACTIVENESS – FAVOURABILITY AND RESTRICTIVENESS

The various environmental components are highly important when it comes to the tourist destination of a region. Some are immediately successful (those related to landforms) while others are the exact opposite, which makes it that, as far as the necessary arrangements for the development of civilized tourism is concerned, the scope of the various types of tourist activities varies both spatially and temporally. Landscape plays a major role as regards the favouring or restriction of certain tourist activities. In Romania, it has generated the most numerouslandforms (geomorphosites) and vistas that have promotedtourism since ancient times.

**Key words:** tourism, geosites, geomorphosites, landscape, tourist attractions.

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**Introduction**

Tourism can be defined as an activity entailed by natural or social environments, especially those characterised by uniqueness and fragility, some authors seeing tourism as a «barometer of the environment's quality» (Dinu M., 2002).

Landscape represents the most important resource of the environment. Individually or in association with other natural or anthropic components, landscape acts as an outstanding tourist attraction because of its genetic complexity, morphological configuration, main morfometric indicators, spatial repartition, etc. (Nedelcu A., 2010).

Research on the close relation between tourism and the most attractive resource of the natural environment, i.e., the landscape, is not a novelty and has already been tackled in the literature by researchers such as: Krippendorf J. (1977), Michaud J.-L. (1983), Debarbieux B. (1995), Lozato-Giotard J.-P. (2003), Pralong J.-P. and Reynard E. (2005), and in Romania, theoretical and practical approaches can be attributed to: Posea Gr. et al. (1969), Ielenicz M. (1992), Olaru M. (2000), Ciangă N. (2002), Cocean P. (2010), Mihai B. et al. (2009, 2014).

Romania's landscape represents a complex system that is the result of a continuous interaction between the dynamic internal agents and countless external factors which, through processes, have led to the creation of a multitude of forms of various shapes and sizes. The system is unified, but highly structured so that each form group belongs to a distinct morphological stage that renders the groups unique as far as their landscape is concerned.

The orographic system consists of varying landscape forms – the Carpathian chain (an extensive «crown») surrounded on the inside and outside by lower units (hills, plateaus and plains). Their interconnectivity imposes four fundamental features – concentric development, proportionality (28 % mountains, 42 % plateaus and hills and 30 % plains), symmetry of distribution and overall participation in an extensive orographic amphitheatre. Ranging from 0 m to over 2,500 m, out of which 12 % represent complex mountainous forms over 1,000 m (the highest combination of shapes relevant for tourism), 46 % represent hills, plateaus, high plains but also low mountains (below 1,000 m), and 12 % represent plains and structural plateaus (the last category amounts to a diversity of geosites and anthroposites that associate in order to provide valuable tourist potential (Fig.1).

Capitalising the orographic theatre for various tourism activities requires several steps – identification and capitalisation (quantification) based on certain indicators (with hierarchical sizes) of geomorphosites, assessment of existing facilities and forecast of tourism activities necessary for the basic tourism potential of a place, area, etc. (Figure 2).

It must not be omitted that landforms, through their characteristics, constitute not only significant opportunities for taking up certain occupations in tourism, but may negatively influence their dynamics, situation tackled by programme management under the call signs of favourability and restrictiveness.

**Geomorphosite suitability for tourist activities**

Geomorphosite *favourability* for tourist activities relies primarily on the level of attractiveness exercised over a large mass of tourists and, secondly, on accessibility.

***Attractiveness*** is related to several features including: *physiognomy* (the more bizarre, of scientific interest and unique in landscape, the more the landform will be a stimulating factor of demand), size (the bigger the size, the more attractive it is), variety of composition and genesis and degree of individualisation in the regional landscape assembly. Despite the risks and potential human and material loss, spectacular development of landform creative processes can sometimes interfere (e.g.: volcanic eruptions, severe landslides, etc.). There are several types of landforms whose characteristics grant them unique suitability: Among these are the following:

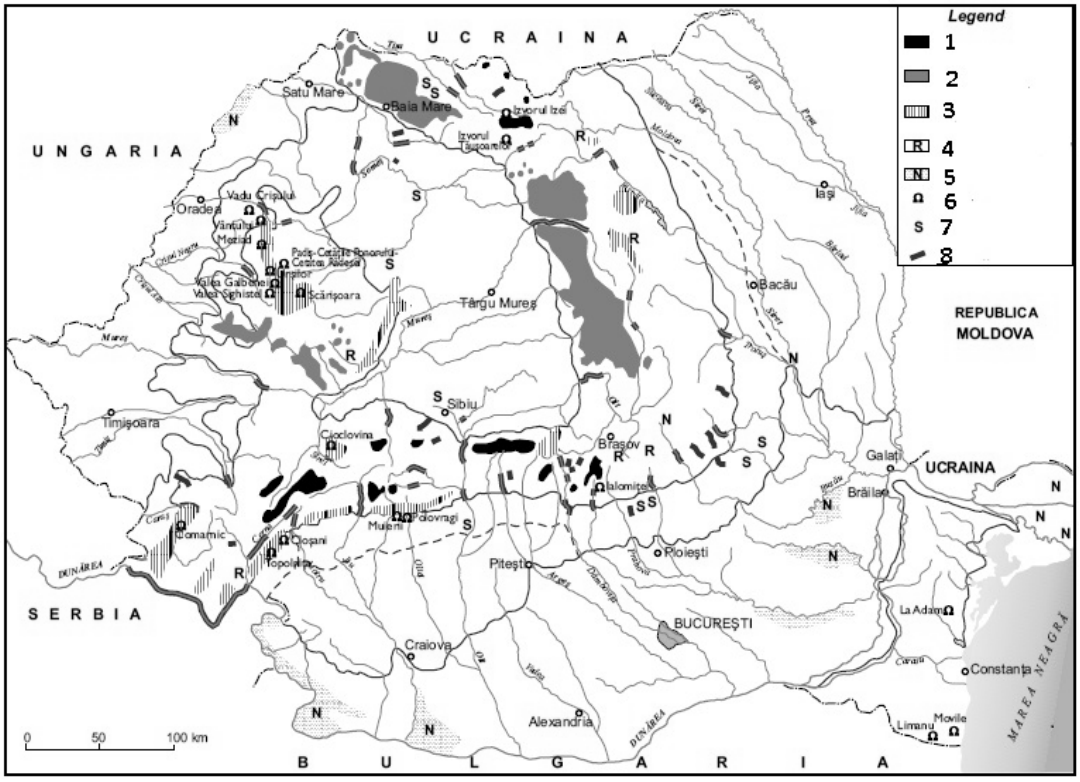


**Figure 1 –** Tourist attractions related to relief in Romania
1. Alpine and sub-alpine glacial and periglacial forms; 2. Volcanic mountains (craters, plates, key epigenetic peaks; 3. Plates and calcareous karst peaks; 4. Plates and calcareous karst peaks; 5. Relief dunes; 6. complex karst; 7. Relief of dissolution; 8.Keys and gorges.

Source: Ielenicz M.,Comănescu L., 2006

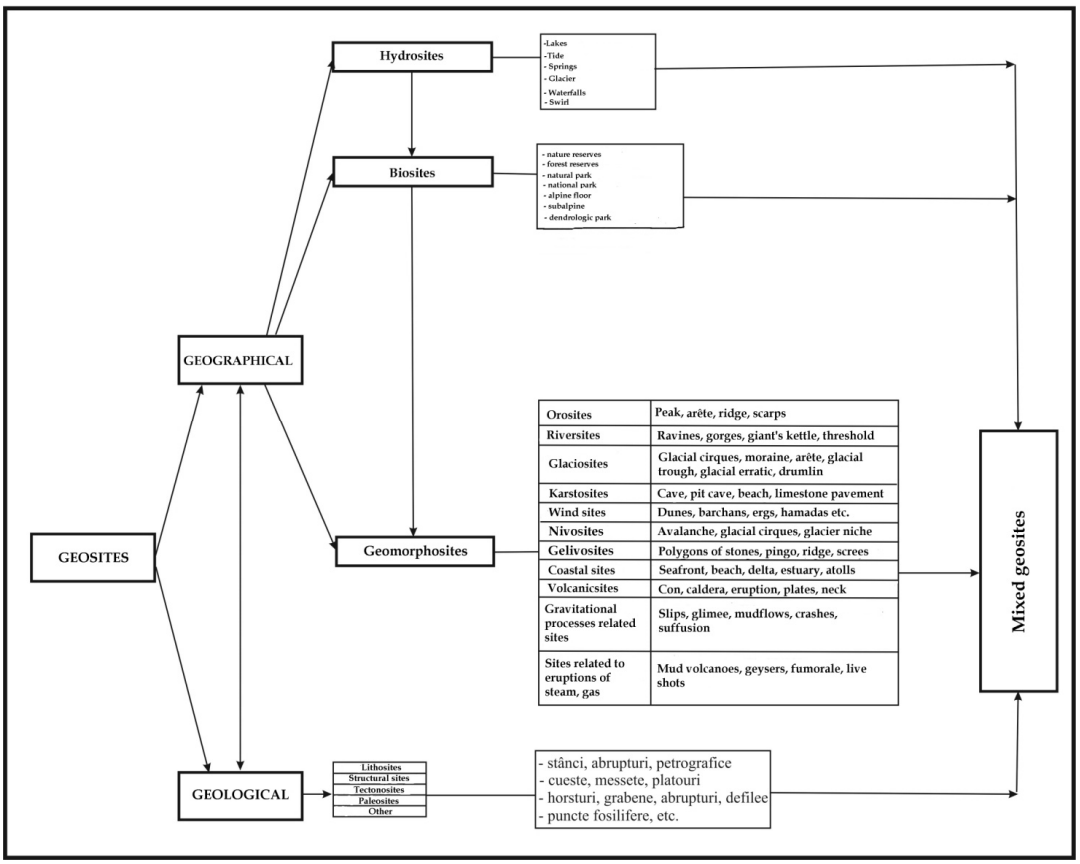


**Figure 2 –** Types of geosites

Source: Ielenicz M., 2009

– *Peaks and ridges (crests) of the main* mountain ranges or those relatively isolated from the hilly units (Figure 3).

**Figure3 –** Fagaras ridge

The higher a peak is, the more attractive it is. Hence, many tourists cross mountain routes seeking to climb the main peaks and crests (in the Bucegi Mountains those on the eastern and northern sides; in the Făgăra Mountains the 6-peaked crest that exceeds 2,500 m; in the Ciucaş Mountains – Bratocea and Zăganu with its Ciucaşpeak in Rodnei Mountains, the north crest and pikes; in the Ceahlău Mountains – peaks Toaca, Ocolasul Mare; in the Giumalău-Rarău Mountains – crests of over 1,600 m, in the Semenic Mountains – the three pyramid peaks beyond 1,400 m, in the Meridional Carpathians, west of Olt – all glacial crests and peaks among them, etc.) which offer, beyond the satisfaction of the climb, that of admiring unbelievably beautiful scenery and vistas. Secondly, there is the attraction of the physiognomy's uniqueness as a result of petrographic formation or genesis. Hence, many a trail in the AriețulMic basin leads to DetunataGoală and DetunataFlocoasă peaks that are 200 m taller that the rest of the ridges found at 1,000 – 1,100 m, but which, as a result of their unique formation (basalt columns and relatively steep slopes covered by masses of parallelepiped slides), dominate ăra Moilor's landscape.

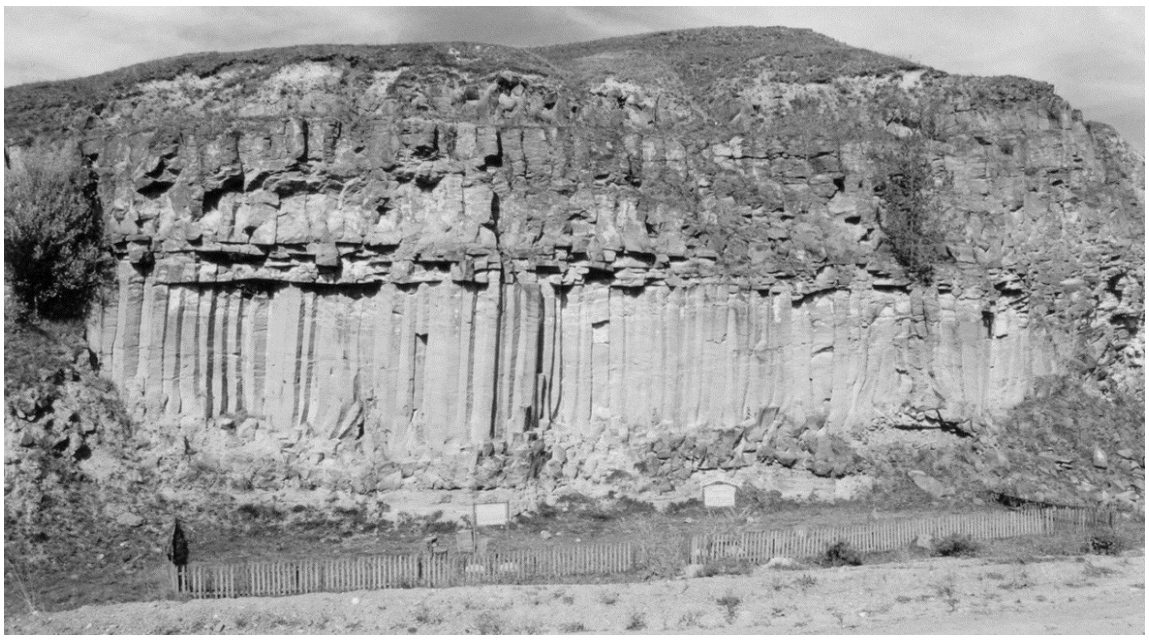

**Figure 4 –** Basalts from Racoş

Another example is related to the beautiful basalt columns fromRacoş, Olt Valley Basin (Figure 4). Massive crests that dominate through their altitude, physiognomy, uniqueness and grandeur are Piatra Craiului, Vânturaria-Buila, Făgăra, which are partially or fully explored by countless tourists more than 6 months a year.

In the hilly regions, this type of objective does not have the same attractiveness, but still applies if said regions feature glades and offer large vantage points. Hence, in North Dobrogea, from Betepe crest (200–242 m) a sightseeing tour can be taken which grants the opportunity of seeing both a large part of the Danube Delta, and the plains north of Razelm lake; from Denistepe peak (270 m) the Nalbant depression can be seen along with its entire adjacent frame hill.

Footpaths lead the way towards all of these attractions and only seldom can one find forest roads, not to mention asphalt roads (the Transfăgărăan and the Transalpina roads – Figure 5). In some fortunate situations there are cable installations (Bucegimountains, Postăvaru mountains, Făgăra mountains, etc.). Naturally, main tourist activities are supported by a minimum of facilities (lodges, retreats, and, to a lesser extent, even hotels). Hiking is the predominant type of tourist activity, occasionally followed by rest and recuperation for several days and, rarely, scientific or eco-oriented outings.

**Figure 5 –** Transalpina Road

– *Gorges and canyons*, as a result of their physiognomy (narrow valley sectors with steep slopes or high slopes, river beds with rock thresholds but also boulder or block accumulations), large size, scenery, morphological variety, where spectacular elements abound (steeps of tens of meters, several level overhangs, water rapids, waterfalls, caves) are some of the landforms most sought after by tourists. The majority of them are natural reservations or belong to different national parks. Access is possible via fully modernised roads (when upon main roads – gorges: Dunării, Prahovei, Mureului, Oltului, Jiului; Bicaz keys) or partially (gorges and keys of the three Cri rivers, Cerna from Banat), forest roads (Bâsca Mare, BâscaMică, Jale, Galbenului, Aiudului, Olteului), pathways (Turda Keys, Tureni, Galda, Corcoaia – Figure 6).

Besides hiking and valley crossing by car (applicable when there are tourist accommodation structures that provide food and shelter) they are related to other forms of tourism, such as climbing, speotourism, ecotourism, week-end recreation, recreational fishing and scientific research. In the villages situated in the depression basins of gorges there are opportunities for parking and even resting for extensive periods (some locations practising agrotourism).

– *Carst landforms* are related to rocks where dissolution plays an important role. Among these limestone is primarily responsible for the creation but also preservation of most carst landforms, while salt and plasters – for limestone conglomerates and sandstones, which are, however, in limited number and less spectacular. The most attractive carst regions correspond to the limestone plateaus and mountains (Bucegi Mountains, ureanu, Aninei, Cernei, Mehedini, Parâng, Almăj, PădureaCraiului, Padi-Cetăile Ponorului, etc.). These regions feature exocarst (ditches, sinkholes, uvalas, carst and polye depressions) as well as significant endocarst with large caves (tens of kilometres long and hundreds of meters deep), many with special concretion, some having glaciers of variable volumes. The most visited caves are the electrified ones (Urilor, Muierii, Meziad, Polovragi, Ialomiei, Rânoavei,Volobeni, etc.), but also the ones in the vicinity of main roads or forest roads (Ponicova, «Gaura cu muscă» of the Danube Gorge, etc.) – Figure 6.

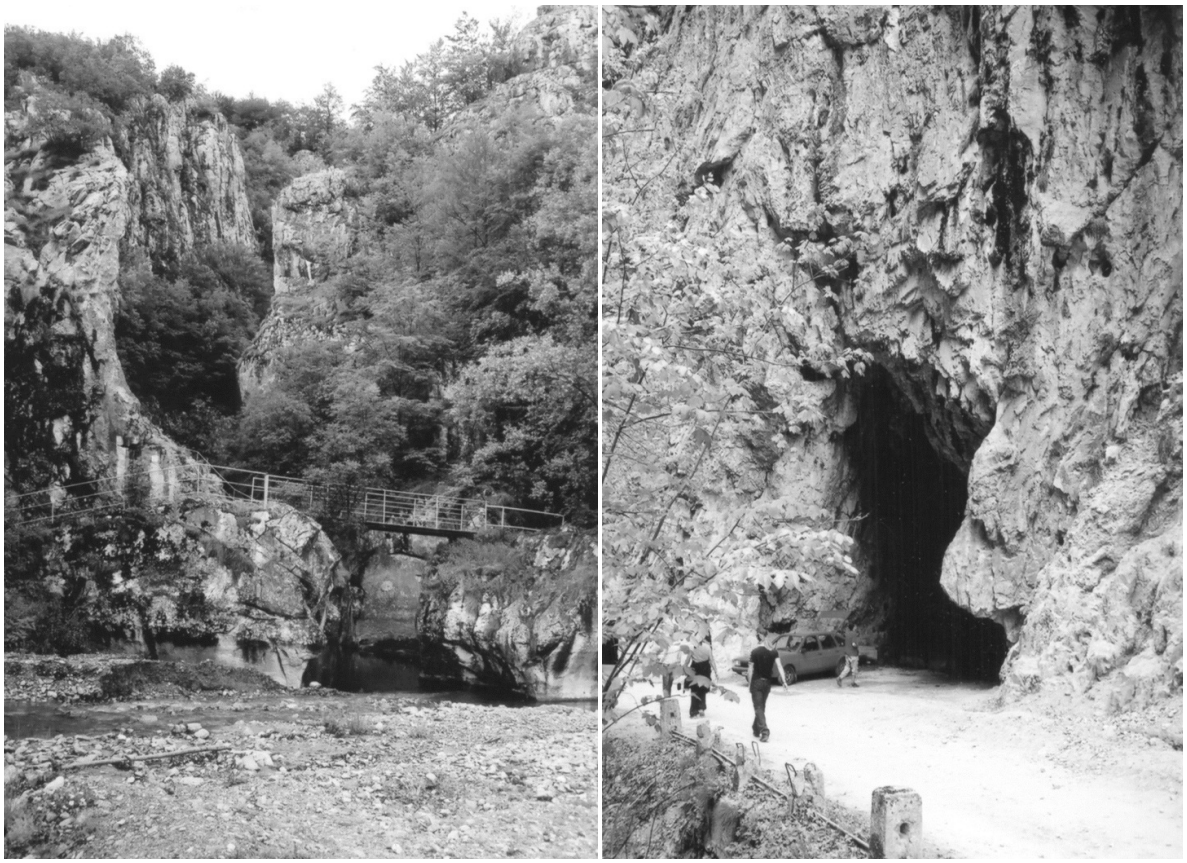

**Figure 6 –** Corcoaia Gorge (left); Polovragi Cave (right)

The carst forms are not solely tied to the Carpathian mountains, which also feature limestones and dolomite, but also to the lower regions (Mehedini, Casimcea, South Dobrogea plateaus), which feature already popular caves (especially for their scenery, scientific research – e.g.: the Ponoare, Topolnia, La Adam, La Movile caves, the last one being unique for its life forms in sulphurous environment).

– *Glacial landforms* – found in the Carpathian ridges and valleys over 1 800 m (Figure 7). There are cirques, valleys, glacial thresholds of various sizes and complexity that reflect in unique landscapes abounding in sharp slopes, masses of slope, sharp crests, towers, avalanche corridors on the slopes, waterfalls thresholds of tens of meters (Bâlea, Capra, Lolaia, Ialomiei, Cailor).

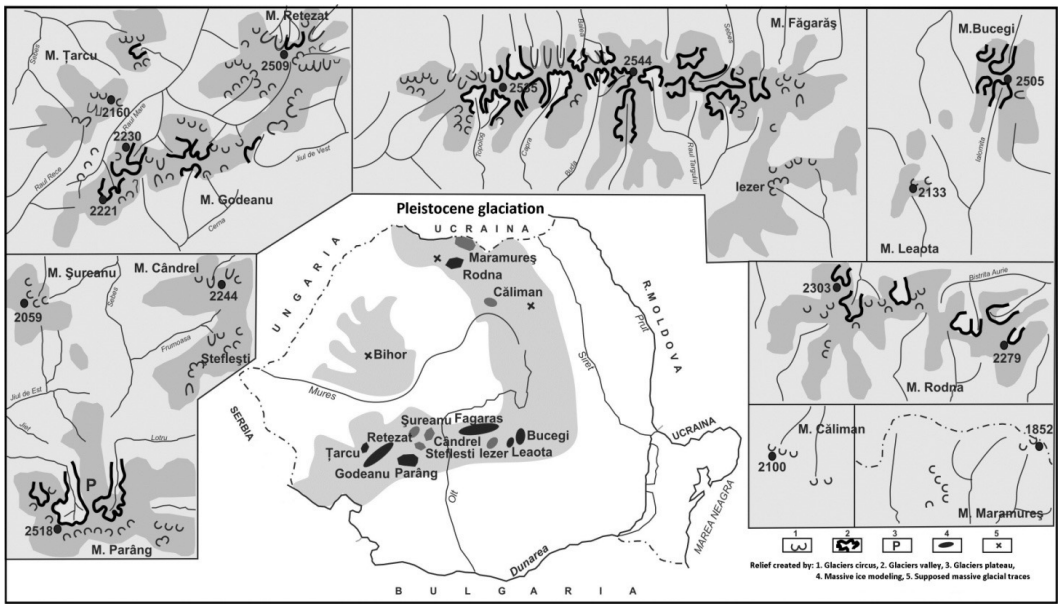


**Figure 7 –** Carpathian massive glacial relief - elements of importance for tourism

*Source: Ielenicz M.,Comănescu L., 2006*

Almost all mountain trails leading to glacial landforms cut across these sectors through the most significant and accessible points. They mainly follow foot trails, although there are some that follow forest roads; Transfăgărășan and Transalpina are the only asphalt roads present. There are lodges and retreats that allow prolonged hiking, and in some places even winter sports (Bâlea, Babele, Rânca, Parâng, Șureanu, etc.).

– *Volcanic landforms* can be found predominantly in the west of the Eastern Carpathians, in-MetaliferiMountains and isolated in several other regions. Of tourist interest are also the cone and crater of mount Ciomatu, the large plateaus west of Gurghiu and Harghita mountains, the caldera peaks of Călimani-Harghita mountains, certain lava crests (CreastaCocoșului, Șatra) that tower the surrounding regions with hundreds of meters, the basalt and andesite columns of tens and hundreds of meters (Gutâi, Igniș, Perșani mountains) or featuring unique physiognomy (Sfinxul of Oaș, Moșul and Apostolii of Călimani), gorges and slopes, the basalt columns of Detunate, Perșani, Firiza (Figure 8). Furthermore, the isolated mounds resulting from the degradation of certain volcanic formations are a part of the previous category. They represent, in most cases, necks, some of them still retaining their medieval constructions (Deva Castle).

Most of them feature forest roads and asphalt roads having different degrees of modernisation. Interest is associated with scenery and landform uniqueness. Some of them feature spas, hence facilitating longer stays (Harghita Baths, Tușnad, Izvoarele, Mogoșa) as well as recreational resorts or winter sport centres (HarghitaMădăraș, Cavnic, RoșiaMontană, etc.).

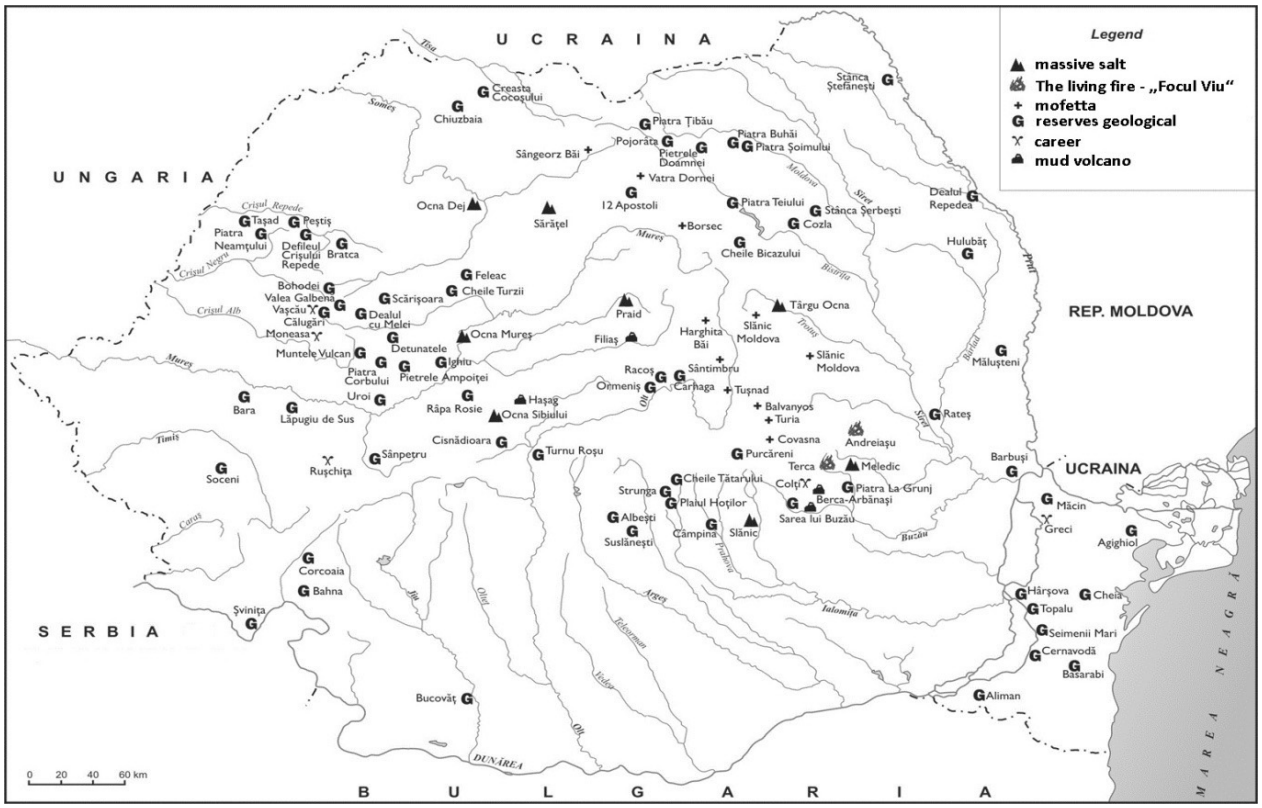


**Figure 8 –** Romania - national and natural parks

Source: Ielenicz M.,Comănescu L., 2006

– *Landforms alongthe coast of the Black Sea*. There are three types of tourist demand. First of all, there is the Danube Delta – an array of canals, river arms and lakes that separate river from the maritime grinds and feature sand dunes, all of them surrounded by luxurious vegetation and specific fauna. The Danube Delta is deemed unique in Europe, hence its inclusion in the category of «Biosphere Natural Reservation» offering a wide plethora of tourism activities (travel, recreation, fishing, hunting, beaches at Sulina and Sfantu Gheorghe, photosafari, etc.) stimulated by numerous facilities that diversify from one season to another, some of them offering hotel services as well as typical boats of mixed functionality depending on the season. The second type of demand is related to the river-lagoon plain in the south of the delta that has a low shore, interrupted by a rocky top (Doloman). Of tourist importance are also the lakes of the Razim-Sinoe complex, featuring sandy beaches outfitted with summertime facilities. The last type of demand focuses on the southern seaside of the Black Sea that features abrupt seacoasts of 5–20 m eroded by waves into loess and Sarmatianlimestones, and on the strips of natural or developed beaches which house the array of tourist resorts from Năvodari to Vama Veche. Here, outstanding scenery blends with highly favourable climatic conditions as well as the existence of healing

waters and sludges, hence leading to the blooming of complex tourism forms that are extremely active from May to October.

There is a modern and complex infrastructure that satisfies all needs, including: accommodation, catering, treatment and entertainment for the various forms of tourism such as: rest and recuperation, spas (permanently in resorts featuring spas – Eforie, Techirghiol, Neptun, Mangalia, etc.) business tourism, sports, extreme water sports, etc.

– Romania's *wind created landforms* are less spectacular, relatively small and mostly full of vegetation. They are mostly visited for scientific purposes (some are natural reservation – The Dunes of Carei) and seldom out of tourist curiosity. Conversely, tourists are drawn to the dunes on the Danube Delta grinds (Letea, Caraorman), or in some regions of the country (Carei, Reci) where there are even some facilities for conducting cultural activities (the «Nufărul» festival of Reci), rest, recreation, recreational fishing, etc.

– *Other types of landforms* that are of interest occupy small areas, are local in character and are sought by a small number of tourists, mostly when their occurrence involves processes that produce varied scale disasters – massive slides (Pârcovaţ, 2002, DealurileVâlcei, 2004), suffusions which create unique complex shapes, but are also extremely damaging (the high loess banks of the Danube, Siret and Prut as well as the Black Sea's shore and south of Cape Midia) when associated with landslides, crashes and wild fires (Mierea in 1976, Andreiau, Terca – Figure 9). Unique landforms of the tor type must also be mentioned, resembling spheres (Măcin Mountains) surrounded by rocky slopes set apart in several ancient granite mountains (Hercinic). They dominate through their unique physiognomy and genetic make-up (weathering).

Therefore, the overall landscape, especially the mountains, covers a variety of types that, as a result of their characteristics, arouse the interest of tourists and determine various tourist activities that do not just focus on one objective but on several and thus group into a network of tourist itineraries that have as departure – destination points numerous centres, areas or tourist lodges (Figure 9).

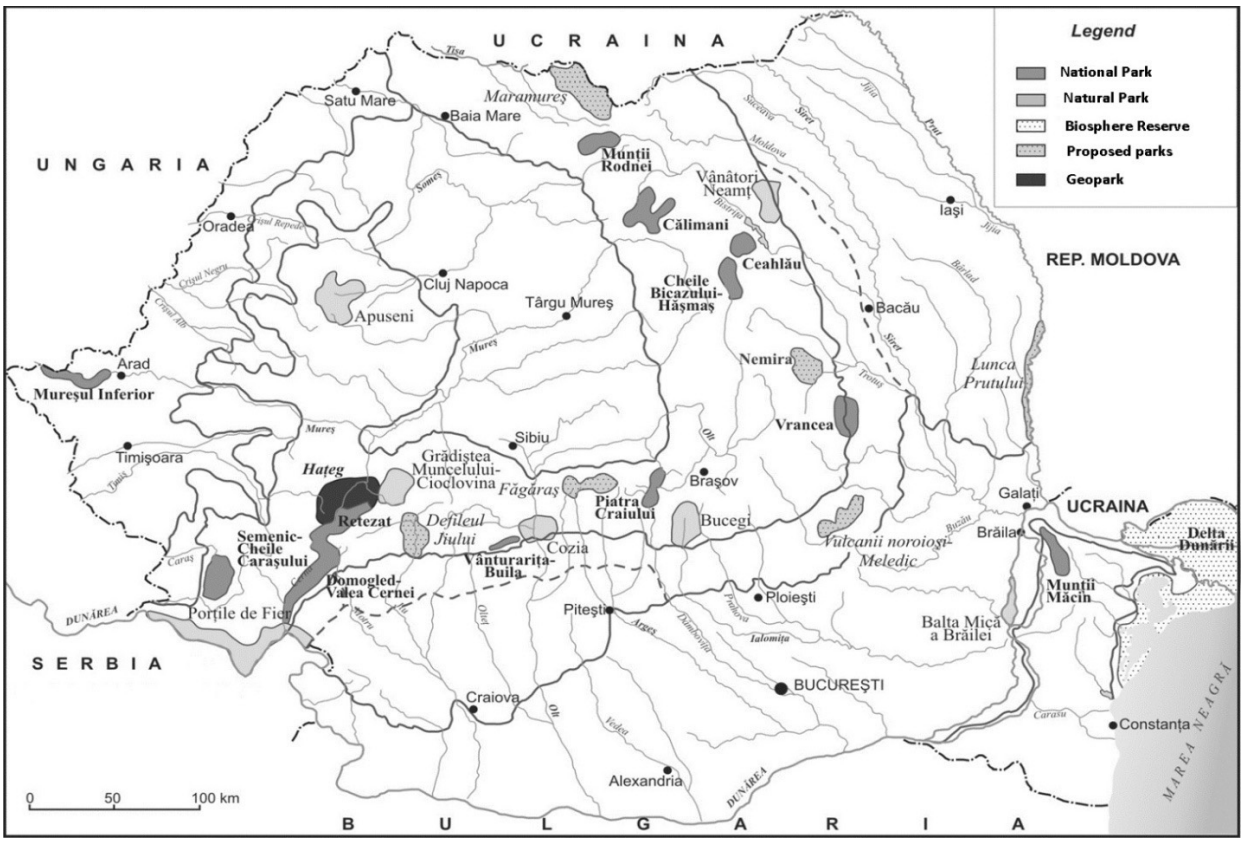


**Figure 9 –** Romania - national and natural parks

Source: Ielenicz M.,Comănescu L., 2006

***Ease of access*** – towards any tourist objective (including landscape ones) is influenced by several factors including those imposed by the general or local features of the terrain. Among them, of crucial importance are the following:

– *Valley ways and depressions in mountainous, hilly and plateau regions* that feature, especially in the case of terrace bridges, road networks of varying modernisation. Furthermore, these areas feature settlements that offer or provide the possibility for accommodation, recreation, leisure and tourist information points. They represent the most important tourist axes that fall into an extremely favourable system of tourist activities but are also linked to isolated areas that are unique in landscape (Ielenicz M. et al., 2013).

**Figure 10 –** Mud Volcano –Pâclele

– *Gorges and ravines* facilitate the crossing of many a mountain or hilly peak via the different types of communication channels. Since ancient times (antiquity) these landforms have been used especially to cross the Carpathians from Moldova and Wallachia to Transylvania and Banat; currently these routes lie at the foundation of the most important modernised roads (Transilvania's «Poarta de Fier», «PoartaOrientală», Giuvala, Predeal, Oituz, Pângărai, Prislop, Tihua, Gutâi, Mestecăni and Uz gorges as well as Cozia, TurnuRou, Bicaz andBuzău ravines).

– *Side slopes* below 20° facilitate easy access to sightseeing via paths, while those below 10° via roads. In many cases access to high slopes is facilitated either by structural ledges or arms as well as steps excavated directly into the rock (Bucegi, Piatra Craiului, Făgăra mountains).

**The capitalisation restrictions of certain tourist objectives**

Capitalisation *restrictions* of certain tourist objectives are determined by several factors, the most significant ones being connected to the features of the landscape. Restrictions are relative as, with time, they can diminish all the way to a complete removal, but they can also be amplified as a result of human activities.

They are frequently imposed by landforms or specific morphogenetic processes that may affect access to tourist attractions.

– *Slopes and high crests* only facilitate difficult access to the landforms beyond them; the quest fronts of mounts Bucegi, Ciucaş and Ceahlău are extremely difficult to cross – access is possible only via extremely difficult pathways that impose time restrictions and are only recommended for experienced travellers; the collapse of a portion of Slănic's «Muntele de Sare» Mountain has reduced its level of attractiveness. Oftentimes special arrangements (cables, cable cars, lifts) have to be implemented in order to reduce restrictions via the laying down of lacet roads that require complex and expensive operations.

– *Access over canyons and gorges, rapids or waterfalls* located along valleys (Dâmbovia, Olte, Ialomia, Bicaz, Cri, Cernea, LotruKeays, etc.) is generally difficult and requires various facilities (paths dug into the slope, high bridges, etc.). In recent decades, because of economic considerations, trails were replaced by roads; however, their laying down required slope cutting which, in the end, affected the beauty and physiognomy of the landscape, and, more importantly, led to local collapsing processes, such as landslides, etc.

– *The occurrence of cavings, massive landslides on the valley slopes of mountains and hills* (e.g.: Olt valley gorge in 2004, 2005, 2011 or Lotrului valley in 2000) of *large floods, avalanches* on alpine and sub-alpine, etc. slopes led to the destruction of road access points to the various sights and to the subsequent implementation of costly special arrangements (e.g.: Transfăgărăşan, Brezoi-Vidra, Transalpina roads, etc.).

– *Steep slopes* prevent access to some caves that feature high entries. Hiking on steep slopes be-

comes inaccessible for the elderly or tourists with different health problems.

- The attractiveness of various tourist objectives *may be limited by the presence of compact and dense flora formations* that limit observation and access (a high but heavily wooded peak does not constitute an important landmark; a sector of keys loses its value and becomes partly interesting if it is heavily wooded; Rarău Mountains' cave-pit that is surrounded by dense forests is rarely included in sightseeing tours, etc.).

**Conclusions**

A thorough analysis of the relation between tourism and the environment reveals that, in most cases, the impact of tourism on the environment and society is not quantified, but, on the contrary, what is quantified are the economic benefits of tourism.

Landscape represents the foundation of all geographic components, including society and the various human activities. Consequently, a tourist sight occurs only where nature (the prime «raw material») provides environmental-friendly conditions facilitating curative and recreational means or spectacular elements capable of arousing tourist curiosity (keys, gorges, waterfalls, limestone landforms, coast, volcanic, glacial forms, etc.). Furthermore, landscape «supports» tourism activities as a result of high favourability and attractiveness potential, but also dictates development opportunities to construct accommodation structures or other facilities that allow its tourist exploitation.

Taking into consideration that the qualitative and quantitative value of the natural component is vital for tourism potential and development, it is safe to say that, in time, irrational exploitation may lead to the destruction of the main pillar on which tourism has always relied on and will always depend on.

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**Jurgita Daubarienė**

# ECOTOURISM DEVELOPMENT IN LITHUANIA: STRENGTHS AND WEAKNESSES

Ecotourism is among the most important trends of the tourism development. The paper aims at analyzing the development of ecotourism in Lithuania. Accordingly the paper discusses the peculiarities of the ecotourism. The carried out research on development of the ecotourism in Lithuania encompasses of analysis of the strategic documents as well as expert assessment. As a result, are conducted SWOT analysis of Lithuanian ecotourism.

**Key words:** ecotourism, ecotourism development, SWOT analysis of ecotourism.

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## Introduction

The growing local and international tourism gives a good opportunity to develop the tourism market in Lithuania. However, the increasing nature tourism involves inevitable negative environmental impacts. The popularity of ecotourism in the world is constantly growing, suggesting the possibilities to extend this activity in Lithuania.

**The paper aims** at analyzing the development of ecotourism in Lithuania distinguishing the strengths and weaknesses.

**Methods**. The article is based on the scientific literature, the Republic of Lithuania Government Resolution Information (National Tourism Development Program for 2014–2020). General research methods were used – systematic, logical and comparative analysis of scientific literature, synthesis. In this literature search the main search criteria were ecotourism. SWOT analysis was used to analyze the problems and the opportunities for development of ecotourism in Lithuania. This analysis identified strengths, weaknesses, opportunities and threats to development of ecotourism in Lithuania.

## Ecotourism definition and opportunities

The term ecotourism was coined in 1983 by «Hctor Ceballos Lascurain» a Mexican environmentalist, and was initially used to describe naturebased travel to relatively undisturbed areas with an emphasis on education. Ecotourism guarantees the sustainable use of environmental resources, while generating economic opportunities for the local people.

The (International) Ecotourism Society in 1990: responsible travel to natural areas that conserves the environment and improves the well-being of local people in 1996 by the World Conservation Union (IUCN) which describes ecotourism as: environmentally responsible travel and visitation to natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features, both past and present) that promote conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local peoples (Joshi, 2011).

The ecotourism theory suggests that economic development and natural resources conservation are compatible goals. Accordingly, recent definitions of ecotourism have centered on conservation, education, ethics, sustainability, impacts and local benefits as the main variables.

Weaver (2008) underscored that ecotourism is a form of tourism that fosters learning experiences and appreciation of the natural environment, or some components thereof, within its associated cultural context.

Ecotourism is now defined as «responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education» (TIES, 2015)

Ecotourism has six characteristics (Kiper, 2013): a) ecotourism involves travel to relatively undisturbed natural areas and/or archeological sites, b) it focuses on learning and the quality of experience, c) it economically benefits the local communities, d) ecotourists seek to view rare species, spectacular landscapes and/or the unusual and exotic, e) ecotourists do not deplete resources but even sustain the environment or help undo damage to the environment, and f) ecotourists appreciate and respect local culture, traditions, etc.

Natural and cultural landscape values form a basis for ecotourism. These values are geographical position, microclimatic conditions, existence of water, natural beauties, existence of natural vegetation, existence of wildlife, surface features, geomorphologic structure, local food, festivals and pageants, traditional agricultural structure, local handicrafts, regional dress culture, historical events and people, heritage appeals, architectural variety, traditional music and folk dance, artistic activities and so on. (Kiper, 2013).

Ecotourism operates for one or more of the eco-friendly alternatives for the economic use of natural resources compared with mining, hunting, farming and so on (Li, 2006). Ecotourism promotes an enhanced appreciation of natural environments and environmental education by exposing visitors and locals to nature and conservation (Bob et al., 2008).

Figure 1 presents three main elements which influence ecodevelopment:

1. Respect for the ecotourism integrity. Stefanica and Vlavian-Gurmeza (2010) aims at empfasizing «the importance of the environment in supporting tourism, maintaining the level of development at a small scale under the control and under the local management».

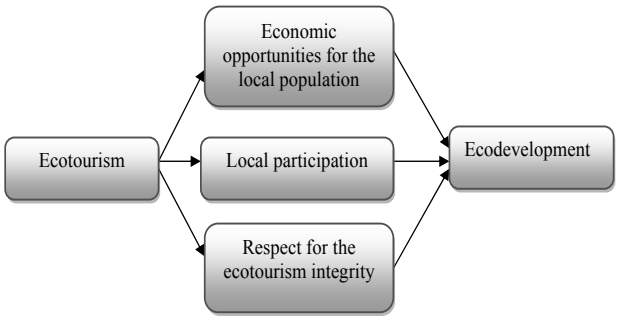


**Figure 1 –** The elements involved in the ecotourism development

(Source: Barkauskiene, Snieska, 2013)

2. Local participation is also an important element in the ecotourism development which «aims at promoting the local participation as much as possible, creating opportunities for the host population, the transfer of property to the local community and its administration, creating opportunities for the group projects and local population as regards the control and administration of natural valuable resources, stipulating some alternative local measures» (Stefanica & Vlavian-Gurmeza, 2010).
3. Economic opportunities for the local population. This element deals with «the benefits of the local economy, creating jobs for the host population, guaranteeing and protecting the local population, including the communities' ideas in the political decisions, the equitable distribution of the economic benefits, recognizing the local efforts/services, using the local materials and working force to keep the money into the local economy» (Stefanica & Vlavian-Gurmeza, 2010). After going through these various aspects of ecotourism which were mentioned above, it is true to say that a development of ecotourism could be an effective way of building a sustainable community development and also could contribute to achieve sustainable development with better conservation of ecosystem and perfect community development.

**Ecotourism development in Lithuania**

In order to ensure the success of ecotourism development in Lithuania, it is necessary to create the appropriate political, legal, economic assumptions (Nature Heritage Fund, 2008): 1. ecotourism developed as a sustainable development tool, bringing the long-term social, environmental and economic benefits, and is given appropriate priority in the country's economic development; 2. validated the term «ecotourism» and regulated its use; 3. created an organizational unit to coordinate the development of ecotourism; 4. implemented system of ecotourism certification, control and monitoring; 5. created legal presumptions that promote a development of ecotourism; 6. created financial mechanisms to develop products of ecotourism; 7. organized trainings about ecotourism for representatives of municipalities, administrators of protected areas, tourism operators; 8. created the national marketing system of ecotourism, pointed the main interest in online marketing.

Lithuania's natural and cultural conditions, developed sector of services allow to produce ecotourism products, which can form attractive image of tourism in the country, to compete in international tourism markets, while satisfying expectations of tourists and business. To achieve these goals, it is important to adapt the cultural heritage and natural objects for tourism infrastructure, to maintain principles of environmental and ecological balance, to improve quality and diversity of recreation, entertainment and leisure services, build more active marketing of Lithuanian ecotourism. (National Tourism Development Program for 2014–2020).

Favorable and negative factors have to be considered to achieve development of ecotourism in Lithuania. Weaknesses force to find the methods to eliminate or reduce the negative effects, while strengths are required to provide perspectives of developing ecotourism. For this purpose, there was prepared SWOT analysis of Lithuanian ecotourism (Table 1).

**Conclusions**

Ecotourism is a growing tourism industry in Lithuania, which has many advantages and strengths, starting from favorable geographical position, rich and unique natural, cultural and historical heritage of potential resources and et cetera. However, despite all of the strong sides of ecotourism, SWOT analysis identifies a number of weaknesses that disturb an image of Lithuanian ecotourism, but also creates opportunities for ecotourism to develop in the future. One of the main tasks achieving development of ecotourism is the promotion of consumers' environmental education, applying ecotourism to rural tourism. Municipalities which develop tourism and accommodation providers should also take into account environmental considerations.

Table 1 – SWOT analysis of Lithuanian ecotourism (adapted by the author with reference to National Tourism Development Program for 2014–2020 and Barkauskiene, Snieska, 2013).

| Strengths | Weaknesses |
|---|---|
| • The favorable geographical position<br>• Great natural and cultural potential<br>• The rich historical heritage<br>• Few urban landscape<br>• A variety of ecological products<br>• A well-developed system of national parks<br>• Cultural traditions, customs, celebrations<br>• Wide selection of local food, drinks<br>• Large variety of ecotourism products and strong authentication<br>• Lithuania has the objects included in the UNESCO World Heritage List<br>• Population's hospitality<br>• The relatively low pollution of soil, water, air<br>• Less pollution in most rural areas<br>• The growing desire of city residents to rest in nature and a quiet place | • Legal environment does not encourage the development of ecotourism<br>• Insufficiently developed infrastructure in rural areas<br>• Lack of ecotourism marketing<br>• Lack of financial resources, unclear developing and supporting system of ecotourism business<br>• Not implemented national information system of ecotourism<br>• Underdeveloped infrastructure of tourism<br>• Limited variety and diversification of leisure activities according to the tourists' income<br>• Strong seasonal effect<br>• Lack of skilled labor |
| **Opportunities** | **Threats** |
| • Increasing demand of ecotourism services and flows of eco tourists<br>• Strengthening international relations of Lithuania<br>• Routes formation of new recreational and cultural tourism<br>• The increase of the number of tourists who have ecotourism as motivation<br>• The possibility to develop sales of ecological agricultural products<br>• Improvement of investment environment (attractiveness)<br>• Improvement of the ecological environment<br>• Support of EU structural funds | • Loss of Cultural-historical, natural heritage and recreational resources potential<br>• Low population awareness about the environment, ecology<br>• Lithuanian regional economical and social differences increase<br>• Increasing international competition<br>• The possibility of environmental worsening<br>• Decline purchasing power of population<br>• unimproved availability of country<br>• High labor migration to EU countries<br>• Not decreasing number of crimes<br>• Potential loss of rural tourism |

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**Kuzman Boris, Jeločnik Marko, Subić Jonel**

# POSSIBILITIES FOR RECREATIONAL FISHING TOURISM DEVELOPMENT IN PROTECTED ZONES OF NPFG[1]

Organization and management of tourism in rural areas is complex activity that additionally becomes more complicated if it is conducted in protected areas – national parks. National park Fruška gora (NPFG) is the oldest national park in Serbia, and which has on disposal considerable potentials for different types of tourism. In paper are examined possibilities of touristic potentials networking in the segment of fishing and rural tourism within the borders of National park Fruška Gora.

**Key words:** rural areas, fishing tourism, fish fund, NPFG.

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## Introduction

National *Law on nature protection* is defining seven categories of natural protected areas (resources), as are: national parks (Đerdap, Šara, Tara, Kopaonik and Fruška gora); nature parks (Golija, Stara planina, Šargan – Mokra gora, Palić, Sićevačka gorge, etc.); protected landscapes (Lepterija – Sokograd, Miruša, gorge of river Mileševka, Subotica sands, Vlasina, etc.); strict nature reserves (Gazimestan, Omoljica island, Kukavica, etc.); special nature reserves (Goč – Gvozdac, Brzanska Moravišta, Zasavica, etc.); protected habitats; and natural monuments (botanic garden Jevremovac, Pionirski park, oak at Cvetni square, Risovača, Ripaljka, Lisine waterfall, Resavska cave, Mlava well, plane tree at Milošs' dormitory, etc.).

*Law on national parks* defines national park as wider territory that by its ecologic, bio-geographic and other characteristics represents natural environment of great importance together with ecosystems and landscapes of special value in term of originality and diversity of flora and fauna, or if possesses one or some of following characteristics: representative biological, geo-morphological, geological, hydrological and other occurrences and processes with cultural-historical value appeared in interaction of man and its natural environment. Closer defining each of five national parks is done by their individual legislation.

National park Fruška gora (NPFG) is the oldest national park in Serbia, which was established in 1960. By larger part is connected for the eponymous island mountain, positioned in Pannonian Plain. It directly relies to the right bank of the Danube River, and it extends in direction east-west for around 78 km. Territory of active protection covers 25.525 ha. Great diversity of flora, fauna and fungi, production potential of orchards and vineyards in foothill, and dense deciduous forests in higher areas of mountain, nearness of Danube, potential of lakes and fishponds, row of orthodox monasteries, number of archaeological localities, closeness of Novi Sad, etc., are basic assumptions to NPFG in order to organize different types of tourism, before all hunting, fishing, recreational, eco, religious, etc.

Rural tourism offers to guest «rural environment» so it can experience on unique way pervasion of nature, culture and local population. Visitor has to enjoy in authentic and original experience, as well as in return to roots or essence of rural way of life. Rural tourism is based on principles of sustainability, considering row of activities and services that characterized certain rural areas. Offer in rural tourism does not cover just visible nature, specificity of architecture, folklore and gastronomy, but also intangible things as are hospitability, customs, culture in relation to nature, communication, beliefs and legends of local population (Kuzman, Kovačević, 2014).

Fishing as touristic product has many specificities. Usually it's a part of rural tourism, as it leans to certain agro activities and natural recourses. Certainly, according to Bauer and Herr (2004), not all fishing falls under tourism, but many of them involves following elements of tourism: travelling to/from particular destination; presence of a tourism service industry (outfitters, tour guides, fishponds/artificial lakes); exchange of money and paying for services; overnights at destination; service industry; aspects of leisure and recreation; etc.

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From the aspect of number of attractive location, fishing tourism potential in Serbia is huge. Unfortunately, often not so good or lack of any marketing approach, brings to situation that from mentioned type of tourism and accompanying activities we are achieving minimal incomes. According to some estimations just in sphere of selling of equipment for fishing in EU annual turnover is around 5 mld EUR, and in package with accommodation and accompanying services, fishing tourism values almost five times more.

Process of recreational fishing organization within the all zones under the state protection considers many activities in function of this area biodiversity protection. Planned management of fishing zones considers: estimation of biomass and fishing pressure on fish fund (according to quantum of annual catch), and determination of allowable annual/daily fish catch per present species; dictating the dynamics of fish stocking; establishing of sustainable use of fish fund; permanent education of recreational fishers; etc.

From the other side, irrational fishing (overexploitation) threatens balance within the sensitive ecosystem of some protected area. Touristic potentials of National park Fruška Gora, in sphere of fishing tourism are not inexhaustible, especially with regard to rare fish species (desired trophies of sports fishermen – potential tourists). Sensibility of area is also recognizable in existence of risk of environment pollution caused by uncontrolled stay of tourists.

**Research results**

***Fishing capacities of NPFG*** – Organization of tourists group visits (recreational fishers) significantly revives rural tourism too, how most of fishing destinations within the zones of NPFG are defined as rural. In coastal part of Danube that is under jurisdiction of NPFG, fishing is possible (segment of fishing zone from 1297–1233 km). The wealth of fish species diversity in observed location is the best described by fact that from total registered fish fauna of Danube River (about 70 species), in this segment of Danube is registered appearance of even 44 fish species, where over 25 % of fish species have primary importance in organization of economic or recreational fishing (14 species from 4 families: Acipenseridae, Cyprinidae, Siluridae and Percidae). Number and representativeness of fish species impose the necessity of determining of basic fishing indicators important for management process and sustainable use of fish fund as natural resource (Table 1).

Table 1 – Quantitative composition of ichthyofauna on the segment of Danube River 1297–1233 km (B – relative biomass, M – relative weight share, P – production)

| Species | B (kg/ha) | M (%) | P (kg/ha) |
|---|---|---|---|
| *Acipenser ruthenus* – ***Starlet*** | 7.06 | 2.3 | 2.36 |
| *Leuciscus idus* – ***Ide*** | 16.2 | 5.3 | 3.42 |
| *Aspius aspius* – ***Asp*** | 2.82 | 0.9 | 0.96 |
| *Blicca bjoerkna* – ***Silver Bream*** | 11.8 | 3.9 | 1.22 |
| *Abramis brama* – ***Common Bream*** | 117.0 | 38.5 | 37.2 |
| *Abramis sapa* – ***White-eye Bream*** | 6.0 | 1.98 | 1.24 |
| *Vimba vimba* – ***Vimba Bream*** | 4.2 | 1.4 | 1.28 |
| *Pelecus cultratus* – ***Sabre Carp*** | 0.28 | 0.09 | - |
| *Barbus barbus* – ***Common Barbel*** | 39.0 | 12.8 | 16.92 |
| *Cyprinus carpio* – ***Common Carp*** | 22.6 | 7.4 | 7.22 |
| *Carassius gibelio* – ***Prussian Carp*** | 4.6 | 1.6 | 0.70 |
| *Hypophthalmichthys molitrix* – ***Silver Carp*** | 7.0 | 1.5 | 3.24 |
| *Silurus glanis* – ***Wels Catfish*** | 56.6 | 18.6 | 13.0 |
| *Stizostedion lucioperca* – ***Zander*** | 8.46 | 2.8 | 3.14 |
| ***Total*** | 303.62 | 100 | 91.9 |

As in focus is use of fish fund in purpose of fishing, previously presented indicators are referring only to the age categories allowed for fishing. According to weight share dominate Common Bream, Wels Catfish and Common Barbel.

Beside mentioned, significant potentials for the development of fishing tourism within the territory of NPFG are embodied in artificial fishing water accumulations: Moharač (60 ha), Bruje (15 ha) and Sot (22 ha). Mentioned lakes can be used in many ways for sports and recreation tourism, but current tourism offer is based only on sports fishing. In plan is tourism networking of Fruška gora lakes with system of cycle paths as a part of European cycle route (Vujko, Plavša, 2011).

In water of aforementioned accumulation, appearance of 19 fish species is registered, where over the 50 % of fish species is marked as fishing significant species. Species with primary fishing importance include Common Carp, Zander, Wels Catfish and Prussian Carp, and existing fish communities are generally formed by fish stocking of established accumulations.

Estimation of relative abundance and weight share, as well as estimation of fish fund biomass and production in accumulations Moharač and Bruje are given according to experimental catches of fish species, where data covers just significant species for fishing (Table 2). From the aspect of potential fishing tourism development accumulation Sot has relatively small importance, considering low pressure (number of arrivals) of recreational fishers (small number of arrivals was primarily caused by generally poor coast accessibility). Besides that, complex of accumulation is followed by public beach (swimming season late spring – early autumn) with accompanying infrastructure (restaurants), what also affects on fishing organization. As in quantitative, as well as in qualitative aspect, relation between major fish species is similar to previous accumulations, but with slightly reduced values.

According to weight share of fish age categories allowed for catching, at the accumulation Moharač dominate Prussian Carp, Common Carp and Zander, while at the accumulation Bruje dominate Wels Catfish, Prussian Carp, Common Carp and Common Roach.

Table 2 – Accumulation Moharač and Bruje (estimated relative abundance and weight share, biomass and production of main fishing species)

| Accumulation Moharač | | | | |
|---|---|---|---|---|
| Species | Abundance (%) | Weight share (%) | Biomass (kg/ha) | Production (kg/ha/god) |
| *Common Carp* | 13.31 | 29.79 | 91.07 | 83.63 |
| *Prussian Carp* | 54.37 | 43.98 | 134.46 | 78.52 |
| *Common Bream* | 11.79 | 2.23 | 6.82 | 4.32 |
| *Common Roach* | 4.18 | 0.39 | 1.19 | 0.67 |
| *Silver Bream* | 3.42 | 0.85 | 2.60 | 1.40 |
| *Common Rudd* | 2.28 | 0.92 | 2.81 | 0.43 |
| *Zander* | 9.13 | 12.93 | 39.51 | 32.71 |
| *Wels Catfish* | 1.52 | 8.94 | 27.34 | 18.06 |
| **Total** | 100 | 100 | 305.8 | 219.74 |
| Accumulation Bruje | | | | |
| Species | Abundance (%) | Weight share (%) | Biomass (kg/ha) | Production (kg/ha/god) |
| *Common Carp* | 3.45 | 20.74 | 57.59 | 35.01 |
| *Prussian Carp* | 15.51 | 22.11 | 61.40 | 26.89 |
| *Common Bream* | 5.17 | 2.43 | 6.75 | 5.41 |
| *Common Roach* | 56.9 | 18.39 | 52.49 | 29.71 |
| *Bleak* | 6.9 | 0.20 | 0.56 | 0.35 |
| *Zander* | 10.34 | 9.94 | 27.60 | 17.14 |
| *Wels Catfish* | 1.72 | 26.2 | 71.31 | 37.55 |
| **Total** | 100 | 100 | 277.7 | 152.04 |

In order to preserve water quality and fish fund on accumulations, sustainability of financial support of mentioned activity requests within the process of organization of sports-recreational fishing, selling of fishing licences to all tourists (recreational and sports fishers). It can be interesting how to solve the problem of expressed low correlation between recreational fishing and advancement of touristic offer, as significant investments for modernization of accommodation capacities close to water resources affects the increase of total number of tourists, but parallel with decrease in number of issued licences for recreational fishing. Also, negative impact on further development of recreational fishing is potentially recognized in closeness of hunting area.

***Allowable catch of fish in recreational fishing –*** After analysis of records of professional and recreational fishers is shown that achieved quantum of catches is far below allowable one on annual level, what reinforces the assumption that mentioned results for biomass and production are around estimated level (researches about state of fish fund were done during 2008).

Recreational fishing is conducted in accordance to Regulation on the method, tools and resources for commercial fishing, then Regulation on the method, tools and resources used in recreational fishing, as well as special measures and limitations defined for certain localities under jurisdiction of public company National park Fruška gora.

Table 3 – Estimation of daily allowable fishing in recreational fishing for the segment of Danube River 1297–1233 km

| **Fishing species** | **daily catch** |
|---|---|
| Brown Bullhead | unlimited |
| Sunfish | unlimited |
| Prussian carp | unlimited |
| Silver and Bighead carp | unlimited under special conditions |
| **Catch of autochthonous quality fish and whitefish** | |
| Limitation for the mass of daily catch is established for the recreational fishers on maximally 5 kg for the catch of all autochthonous fish species | |
| Starlet, Common carp, Pike, Wels Catfish, Zander, Volga Pikeperch, Asp | maximally 3 pieces in allowable fishing size - summary |
| Ide, Common Nase, Common Barbel, European Chub, Common Bream | maximally 10 pieces in allowable fishing size - summary |
| In case that one caught fish exceeds the mass of 5 kg (for all autochthonous fish species), daily catch limit in pieces is not valid, so it is considered that maximal mass of daily catch have been done | |

Structure and size of catch, from the aspect of primary fish species for the segment of Danube River 1297–1233 km, is given according to estimation of fish fund state, where sustainability of fish fund use is based on next assumptions: research results from 2008; estimation of number of fishers and fishing pressure intensity (size of daily catch, catch composition, seasonal variability in fishing intensity); estimation of fish fund production; etc. In line with previously mentioned, next table shows allowable frame for recreational fishing in 2015 on observed territory.

Sustainable management on three accumulations under the jurisdiction of NPFG requires the creation of plan for fishing on these locations, in other words estimation of fishing pressure height for primary fish species for the next fishing season (Table 4 and 5).

Table 4 – Accumulation Moharač
(estimation of total annual fish harvesting)

| Accumulation Moharač | | |
|---|---|---|
| Species | Structure of fish harvesting (in %) | Quantity for catch (kg) |
| Common carp | 38 | 4,000 |
| Prussian carp | 38 | 4,000 |
| Zander | 14 | 1,500 |
| Wels catfish | 10 | 900 |
| **Total** | 100 | 10,400 |

Table 5 – Accumulation Bruje
(estimation of total annual fish harvesting)

| Accumulation Bruje | | |
|---|---|---|
| Species | Structure of fish harvesting (in %) | Quantity for catch (kg) |
| Common carp | 27 | 500 |
| Prussian carp | 22 | 400 |
| Zander | 8 | 150 |
| Wels catfish | 27 | 500 |
| Common bream | 2 | 40 |
| Common roach | 14 | 250 |
| **Total** | 100 | 1,840 |

As was earlier mentioned, according to fishing activities, accumulation Sot currently has small importance. Planned fishing pressure on other two accumulations is in relation 1:6, where in structure of planned fish harvesting in accumulation Moharač will dominate Common Carp and Prussina Carp, while in accumulation Bruje will be forced harvesting of Common Carp and Wels Catfish.

Sustainability of recreational fishing, from the aspect of natural resources (fish fund) preservation, on accumulations in jurisdiction of NPFG will be achieved just in conformity with the principles of daily allowable fishing that was previously defined for the segment of Danube River.

**Conclusion**

There are undeniable potentials for organization of recreational fishing within the territory of National park Fruška gora (NPFG), where for sustainability of natural resources (fish fund and water accumulations) it is necessary that fishers (tourists) have to respect national legislative and defined principles established by the body to which the national park is assigned to management. Sustainability of financial support of recreational tourism is recognized in additional selling of time licences to all fishers. As the analysis of annual fishing results show that achieved catches are far below allowed (projected), there is justified reason for more expressed marketing appearance in attraction of potential fishers through promotion of NPFG as desirable touristic destination.

Of course, it must be respected all natural limitations related to the concept of a protected area, respectively, it has to be respected all principles of sustainable tourism development that will not endanger the available natural resources.

Development of recreational tourism, hunting and fishing can and have to represent a leading activity within the NPFG, according to their more and more expressed attractiveness for tourists, as well as from the aspect that these activities with well established control system minimally endanger the natural resources of some protected area.

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# IMPACT OF THE FOREIGN TRADE OF AGRO-INDUSTRIAL PRODUCTS BETWEEN SERBIA AND RUSSIAN FEDERATION[1]

Since 2000, Republic of Serbia and Russian Federation have been regulated their economic relations through the Free Trade Agreement, by which is encouraged mutual exchange of goods, after a rapid fall in trade exchange during the nineties' of the XX century. In paper is analyzed the inter-countries exchange of agro-industrial products within the period 2004–2013, in order to determine the effects of Free Trade Agreement implementation and to identify those agro-industrial products whose exchange can be encouraged. Analysis of mutual exchange with mentioned products covers products by SITC classification (Section 0 – Food and live animals and Section 1 – Beverages and tobacco), using the certain statistical methods, as are exponential trend, arithmetic average, rate of change and coefficient of variation.

**Keywords:** agro-industrial products, foreign trade, free trade agreement, Russia, Serbia.

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## Introduction

From the historical standpoint mutual relation between Republic of Serbia and Russian Federation has significant interest. After World War II, former Socialist Federal Republic of Yugoslavia (SFRY) represents part of the Eastern block that was led by the Soviet Union (USSR), with which it created special political-economic connections. «Russian-Serbian relations, despite the undoubted national and religious closeness of two nations, were always depend on, primarily on realistic and rational understanding of interests of both countries, as well as according to their objective possibilities in political, economic and military terms» (Vereš, 2000).

Mutual trade between Serbia and Russia during the nineties of XX century was drastically decreased, from 2,3 billion USA$ in 1990 to only 284 million USA$ in 1999 (Simić, 2014). In August 2000, Government of the Federal Republic of Yugoslavia and Government of the Russian Federation were signed the Agreement on Free Trade. Its main goal was to improve mutual trade. Agreement was under certain changes during 2009 and 2011. By signed Agreement were abolished mutual tariff protections on 99 % of products for which can be proved that originate from Serbia and Russia.

In the period after the Agreement signing, both countries from year to year were increased the volume of mutual trade exchange. Starting from the first year of the Agreement implementation, mutual trade exchange increased for 91 %, from 390,4 million USA$ in 2000 to 744,4 million USA$ in 2001. The largest mutual trade turnover was achieved in 2008, 4.041,7 million USA$. «Because of the complementarity of USA and EU economies, and the effects of globalization, the crisis that covers financial and real sector of the USA slowly passed to EU and other world countries» (Radovanovic, Radovanovic, 2013), what in parallel results a decrease in volume of foreign trade between Serbia and Russia in 2009. In observed period, exchange of agro-industrial products between Serbia and Russia had a constant increase at average growth rate of 29,96 % and with variation coefficient of 68,23 %. The highest recorded value of mutual exchange of agro-industrial products was recorded in 2013, around 233,8 million USA$.

## Methodology

In paper are analyzed the trends in trade of agro-industrial products between Serbia and Russia using certain standard statistical methods, such are trend, arithmetic average, coefficient of variation and rate of change. Under agro-industrial products are considered all products of Section 0 – Food and beverage and Section 1 – Beverages and tobacco (Standard International Trade Classification (SITC), version 4). All data about mutual trade exchange between Serbia and Russia represent official data from the Statistic Office of the Republic of Serbia (SORS) for the period 2004–2013.

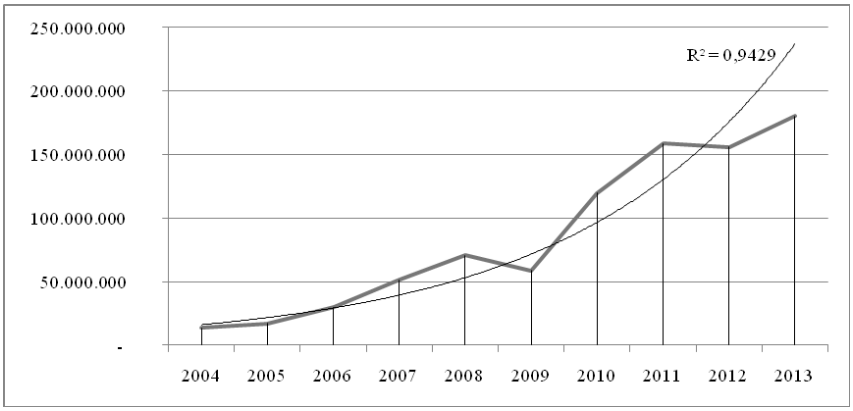
## Export of Serbian agro-industrial products in Russian Federation

In mutual exchange of agro-industrial products, during the period 2004–2013, Serbia has been re-

1 Paper is part of project III 46006 – Sustainable agriculture and rural development in function of achieving strategic goals of Republic of Serbia within Danube region, funded by Ministry of Education, Science and Technical Development of Republic of Serbia. Project period 2011–2015.

corded constant increase of export by average growth rate of 34,91 % and variation coefficient of 73,26 %. Previous shows a dynamic growth of the export value of this product group. Only year when export of agro-industrial products from Serbia was recorded slight fall is in 2009 (Graph 1). The highest achieved export value of observed group of products from Serbia to Russia was realized in 2013, and it amounted around 180,3 million USA$.

**Graph 1 –** Export of agro-industrial products of Republic of Serbia in the Russian Federation during the period 2004–2013 (in USA $)




*Source:* SORS, 2015.

On total, seven of twelve segments within the SITC sections 0 and 1 have had a share in export less than 3 % in observed period. Export of live animals, fish and fish products, sugar and sugar products, coffee, tea, cocoa, spices and products for animal feed have not special importance for export to Russia, as their share in total export of agro-industrial products is less than 1 %, while export of tobacco and tobacco products had in some content more significant share in export, around 1,83 % (Table 1).

Export of meat and meat products in observed period had value of 24 million USA$, what is around 2,86 % of the total export of agro-industrial products. This group of products has a high average growth rate, 73,69 % and extremely high coefficient of variation, 122,89 % what indicate to significant fluctuation in exported quantities. Individually, export of frozen pork meat was recorded during the last three observed years. It had a value of 8,7 million USA$, share in total export of around 1,06 % and average decline in export value of 47,55 %. Export of slaughter products of pork meat (except liver) were realized export value of 6,9 million USA$, with the share in total export of 0,81 % and high export value growth by the average rate of 69,7 %, what indicate to very high export potential encouraged with gaining of duty-free access for six Serbian slaughter houses in 2011. Although 2012 was the most significant year for the export of meat and meat products, it can be recorded the fall in export value, especially in export of frozen pork meat.

Export of beverages recorded a value of 27 million USA$, share in total export of agro-industrial products of 3,15 %, high average growth rate of 79,1 % and coefficient of variation of 95,68 %. Within the structure of the segment Drinks, the most important export product is wine of fresh grapes (except sparkling wines) that generated export value of 18,3 million USA$ and share in export of 2,14 %, with very high average growth rate of 97,7 % and high coefficient of variation of 107,09 %. There has been constant growth of export of wine from fresh grapes, and it was recorded the highest value in 2013 (5,7 million USA$). Besides export of wine from fresh grapes, export of fermented beverages has recorded significant value of 6,4 million USA$, with share in export of agro-industrial products of 0,74 % and average growth rate of 43,15 %.

Within the segment Miscellaneous edible products and preparations in the SITC classification, export value of 37,5 million USA$ was recorded, or approximately 4,42 % of the total export of agro-industrial products, with average growth rate of 13,66 % and coefficient of variation of 42,86 % (segment shows stable export growth). The largest share in export was achieved in 2004 (17,17 %), while the lowest share was achieved in 2011 (2,74 %). Nominally, the largest export was achieved in last two observed years, in average around 6,3 million USA$.

By export importance, milk and milk products, as a segment, take third place with realized value of 37,8 million USA$ and share in total export of agro-industrial products of 4,5 %. Export of mentioned group of products records extremely high average growth rate (432,83 %) with coefficient of variation of 95.46 %. Reason for that can be found in fact that export began much later (2011), when several Serbian dairies got permission for free export, where from its start export was characterized by voluminosity. Within this group, the most important products are fresh cheeses with share in total export of agro-industrial products of 2,94 %, which in last two observed years were exported in value of 23,7 million USA$. Their average growth rate was 312,32 % and coefficient of variation 88,93 %. Besides fresh cheeses, other cheeses (e.g. Kackavalj) recorded a significant share in total export (1,37 %). Realized export value was 11,6 million USA$, while the average growth rate was 288,64 % and coefficient of vari-

ation 67,83 %. Processed (melted) cheeses, as well as other cheeses that contains no more than 40 % of fat are excluded from the Free Trade Agreement, so they are not within the regime of duty free trade (Protocol 2011).

Second place is took by cereals and cereal products, which achieved export of 43,2 million USA$ in observed period (5,05 % of total export of agro-industrial products), with average growth of 11,79 % and coefficient of variation of 51,02 %. Within the mentioned segment dominates the export of seed corn (4,09 % of total export, or about 35,1 million USA$). For the export of seed corn is characterized the low average growth rate (7,42 %) and coefficient of variation of 55,73 % (relatively high value of coefficient is the result of export oscillations, where the highest export value was recorded in 2007, 2008 and 2013, when was realized more than 50 % of total export of this product). Besides all, export of sweet biscuits, waffles and galette also recorded good results in total export of agro-industrial products (share of 0,84 % and value of 7,2 million USA$, or average growth rate of 36,03 % and coefficient of variation of 64,78 %). During the last three years have been realized over 50 % of export of this product group (4,3 million USA$).

Table 1 – Export parameters of agro-industrial products from Republic of Serbia to Russian Federation in period 2004–2013.

| SITC – sections | Export value in USA $ | Export share of SITC 0+1 | Change rate | Variation coefficient |
|---|---|---|---|---|
| 00 Live animals | 59.699,40 | 0,01 % | 64,43 % | 97,97 % |
| 01 Meat and meat products | 24.053.134,90 | 2,86 % | 73,69 % | 122,89 % |
| 02 Dairy products[2] | 37.760.250,60 | 4,50 % | 432,83 % | 95,46 % |
| 03 Fish and fish products | 41.364,60 | 0,00 % | 170,40 % | 127,13 % |
| 04 Cereals and cereal preparations | 43.226.243,60 | 5,05 % | 11,79 % | 51,02 % |
| 05 Vegetables and fruit | 662.649.232,50 | 77,28 % | 37,36 % | 74,99 % |
| 06 Sugars, sugar products and honey | 558.978,80 | 0,07 % | 95,75 % | 204,50 % |
| 07 Coffee, tea, cocoa, spices, and manufactures | 1.242.975,00 | 0,15 % | 28,04 % | 73,72 % |
| 08 Feeding stuff for animals | 5.724.050,80 | 0,68 % | 271,58 % | 104,02 % |
| 09 Miscellaneous edible products and preparations | 37.527.330,30 | 4,42 % | 13,66 % | 42,86 % |
| 11 Beverages | 26.969.443,20 | 3,15 % | 79,10 % | 95,68 % |
| 12 Tobacco and tobacco manufactures[3] | 16.324.370,40 | 1,83 % | -14,54 % | 135,23 % |
| **TOTAL** | 856.137.074,10 | 100 % | | |

*Source:* Authors calculations according to SORS data, 2015.

The most important export products of Serbia to Russia are fruits and vegetables. Their value in observed period was 662,6 million USA$, what makes 77,28 % of total export of agro-industrial products. Export of this product group had a positive growth rate of 37,36 % and variation coefficient of 74,99 %. Within the mentioned group the most important are fresh apples with total export of 231,2 million USA$ and share in total export of 26,84 %. Apples have very high growth rate (65,34 %) and significant variation coefficient (87,75 %), what is a result of low export value at the beginning of period (241,000 USA$), or the highest value recorded in 2011 (57,9 million USA$). Apples are followed by fresh nuts with export of about 181,1 million USA$ and share in total export of 21,13 %. The most important export products of this group are plums, peaches, cherries, sour cherries and apricots. This group of products is also characterized by high average growth rate (66,23 %) and high coefficient of variation (78,06 %). Since 2006, their export has recorded constant growth, which in 2011 reached 37,7 million USA$.

Also should be mentioned the export of fresh berry fruits. Dominates the export of fresh strawberries with 21,8 million USA$ and share in exports of 2,58 %, high average growth rate of 77,01 % and high coefficient of variation of 106,36 %. It is followed by the fresh pears and quinces, 9,5 million USA$ and share in total export of agro-industrial products of 1,12 % (extremely high average growth of 138,08 % and high coefficient of variation, 138,99 %). Then come raspberries, blackberries and similar fruit species, with export value of 8,3 million USA$ and share of 0,98 %, average growth rate of 23,34 % and coefficient of variation of 86,56 %. At all mentioned fruit species in recent years have come to significant growth in export value. The largest oscillations are expressed at raspberries, blackberries and similar fruits, where after rapid growth in export in 2011 compared to 2010 (310 %), were recorded a certain decline in 2012, and later in 2013 the highest export value (2,2 million USA$, or 3,2 USA$ per kg).

Besides fresh fruits, Serbia also exports certain fruit processed products. Dried fruits are export-

2 For calculation of change rate and variation coefficient in export of dairy products, impact of small export value in 2009 (45,6 USA$) was excluded in order to achieve more realistic parameters.

3 As like in case of dairy products, for calculation of change rate and variation coefficient, negligible export value in 2010 (1,5 USA$) was excluded in order to achieve higher objectiveness.

ed the most (total export value of 25,1 million USA$ and share in export of 2,9 %). Export of this product group records average growth rate of 24,27 % and a high coefficient of variation, 81,6 %. The highest export value was recorded in 2013 (6,6 million USA$). On the other hand, the export of fruit and vegetable juices have also achieved significant results (20,9 million USA$) and share in total export of 2,43 %. It has a high average growth rate of 55,15 %, and the highest export value was recorded in 2013 (6,2 million USA$).

At vegetables, the most important export products are prepared or canned sweet corn and other vegetables (export value was 97,7 million USA$ and share in export was 11,5 %) and mixed frozen vegetables (mixed vegetables, beans, green beans and peas) with realized export of 17,5 million USA$ and share in export of 2,05 %. The highest average export growth was recorded at frozen mixed vegetables, which was 128,74 % (this was the result of strong export growth since 2010, where the highest export value was recorded in 2011, 5,6 million USA$). Much lower average export growth was recorded at prepared and canned vegetables. It has also much lower variation coefficient (export volume of this product category was halved in 2013 compared to 2012).

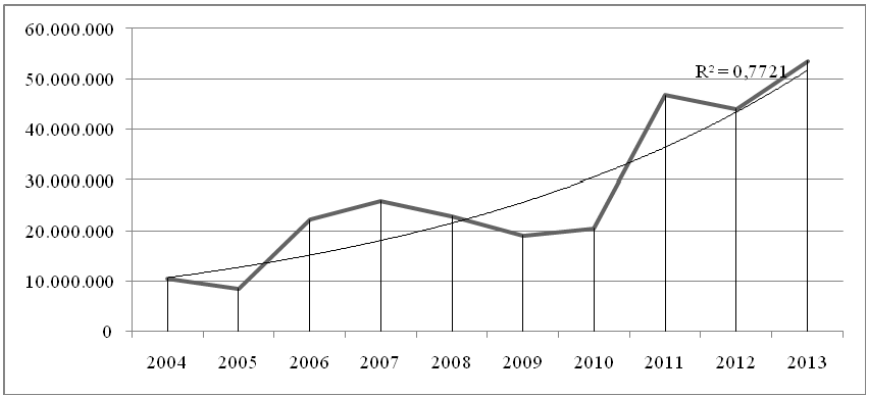
**Import of agro-industrial products in Serbia from Russian Federation**

Although the import of agro-industrial products from Russia generally has not larger significance for Serbia, its structure still has to be analyzed, as in last three observed years its share in total import was in average around 2,28 %. Import of agro-industrial products from Russia has positive trend with average growth rate of 34,89 % and coefficient of variation of 73,32 % (Graph 2).

Seven of twelve segments within the sections 0 and 1 of SITC classification in observed period have share of import lower than 3 % (Table 2). Imports of live animals, meat and meat products, sugar and sugar products, as well as coffee, tea, spices and beverages individually does not exceed share of 1 % within the total import, while import of segment fish and fish products has achieved in average share of 1,68 %. Import of fruits and vegetables were around 8,1 million USA$, what represents 2,98 % of total import (average growth rate was 4,71 % and coefficient of variation 65,61 %).

Products from the group – Feeding stuff for animals had relatively significant participation within the import of agro-industrial product from Russia. They achieved import value of 29,6 million USA$, what represents 10,69 % of total import. Their average growth rate was 29,01 % and coefficient of variation 53,68 %.

**Graph 2 –** Import of agro-industrial products in Republic of Serbia from Russian Federation in period 2004–2013 (in USA $)




*Source:* SORS, 2015.

Having in mind segment no. 09 in SITC classification – Miscellaneous edible products and preparations, it can be noticed the high import value from Russia to Serbia (around 33,3 million USA$) what represents 12,08 % of total import of agro-industrial products with average growth rate of 17,65 % and coefficient variation of 51,27 %. Within this segment, the most important product is margarine in various forms (excluding liquid), which was imported in value of 25,7 million USA$, what represents 9,27 % of total import. Average growth rate of import is 54,21 % and coefficient of variation 64,03 %. The highest value of import was recorded in 2013 (5,3 million USA$).

The second most important product segment in total import of agro-industrial products from Russia are cereals and cereal products. They were realized import value of 49,7 million USA$, or about 17,81 % of total import of agro-industrial products, with an average fall in import value from 10,98 % and coefficient of variation of 78,32 %. Decrease in import value was result of import of primary products, like other wheat types, spelled, meslin and sprouted grains only in one year (2004), when it achieved the import value of 6,6 million USA$. Over time, import of other bakery products[4] was gaining in importance. They had total import value of 28,9 million USA$, with share in total import of 10.17 %, what launched other bakery products on second place within the list of imported products in Serbia. Average growth rate of import of this group of products was 23,29 % and coefficient of variation 108,79 %.

The highest share in import of agro-industrial products from Russia has tobacco and tobacco prod-

4 According to SITC classification, other bakery products consider other type of bread, pastry, cakes, biscuit and bakery products that (not) contain cocoa, and other similar products.

ucts. They have realized the import value of 143,5 million USA$ (52,82 % of total import), with average growth rate of 40,65 % and such a high coefficient of variation, 96,85 %. The largest share in total import, mentioned group of products had in 2011 (about 72,21 %), while the lowest share was achieved in 2004 (only about 3,41 %). Nominally expressed, the highest import was realized in 2013 (36,5 million USA$). Import of cigarettes containing tobacco dominates (45,43 % of total import of agro-industrial products within the observed period). Import of processed tobacco and other extracts is also present (6,04 % of total import from the Russian Federation).

Table 2 – Import parameters of agro-industrial products in Republic of Serbia from Russian Federation in period 2004–2013.

| SITC – sections | Import value in USA $ | Import share of SITC 0+1 | Change rate | Variation coefficient |
|---|---|---|---|---|
| 00 Live animals | 18.342,70 | 0,01 % | -25,95 % | 132,78 % |
| 01 Meat and meat products | 301.592,80 | 0,11 % | 58,01 % | 55,35 % |
| 02 Dairy products | 1.627.543,30 | 0,62 % | 7,67 % | 93,89 % |
| 03 Fish and fish products | 4.626.669,00 | 1,68 % | -1,63 % | 61,51 % |
| 04 Cereals and cereal preparations | 49.721.892,20 | 17,81 % | -10,98 % | 78,32 % |
| 05 Vegetables and fruit | 8.082.113,40 | 2,98 % | 4,71 % | 65,61 % |
| 06 Sugars, sugar products and honey | 2.017.538,80 | 0,74 % | 37,73 % | 174,11 % |
| 07 Coffee, tea, cocoa, spices, and manufactures | 684.170,90 | 0,24 % | 20,69 % | 100,39 % |
| 08 Feeding stuff for animals | 29.573.699,60 | 10,69 % | 29,01 % | 53,68 % |
| 09 Miscellaneous edible products and preparations | 33.270.665,30 | 12,08 % | 17,65 % | 51,27 % |
| 11 Beverages | 621.097,40 | 0,22 % | 14,68 % | 82,58 % |
| 12 Tobacco and tobacco manufactures | 143.483.751,50 | 52,82 % | 40,65 % | 96,85 % |
| **TOTAL** | 274.029.076,90 | 100 % | | |

*Source:* Authors calculations according to SORS data, 2015.

**Conclusion**

Free Trade Agreement between the Republic of Serbia and the Russian Federation is the main driver of growth of mutual trade with agro-industrial products within the period 2004-2013 (all major export products of Serbia are in the regime of free trade with Russia). Although the achieved results are satisfactory, the huge potential of Russian market is still not properly used. Importance of the exchange of agro-industrial products in total trade is relatively modest, with participation of 4,13 %. However, the share of export of agro-industrial products in total export has far greater importance for Serbia (16,1 %) compared to the import of agro-industrial products in total import (1,25 %). This is one of the few economy sectors where Serbia generally achieves a constant trade surplus with other countries.

In export of agro-industrial products to Russia generally dominates export of primary agricultural products, with increasing trend of value added products (processed products). Despite the importance in export of processed products promotion, it is necessary to provide strong support to export of fresh products, such as fresh apples and fresh nuts (they make up to half of the total export), or support to primary products that have high growth potential, such as strawberries, pears, quinces, raspberries and blackberries. Of course, export of processed products with value added, as dried fruits and fruit and vegetables juices should be also forced. Vegetables are mostly exported as canned, prepared and frozen, having a satisfactory export potential.

Products with the highest export dynamics are in the segment Milk and diary products. Although they participate just with 4,5 % within the total export of agro-industrial products, they possess extremely high average growth rate (432,83 %). Export of fresh and other type of cheeses, in second half of observed period, have recorded excellent results in Russian market, so export of these products achieved the highest value per unit of measure 4,2 USA$ per kg.

Potential for further export increase have, before all wines from fresh grapes, slaughter products of pork meat and fermented beverages.

Unlike the export of agro-industrial products where dominate the export of primary agricultural products, at import assortment structure is moved towards the products that pass higher stages of processing. Cigarettes and tobacco extracts dominate, where their import value significantly increased in last three years. Products from the segment – Feeding stuff for animals, from the aspect of quantity are the most imported products, but with their value they are positioned at second place within the list of the most significant import items. They represent products with the most stable import growth. Various forms of margarine (excluding liquid) characterize significant import, so by their growth rate they represent products with the fastest import increase.

Although Serbia, in observed period, if we come from the aspect of agro-industrial products, were used in great extent all possibilities offered by Free trade agreement, in upcoming period should be necessary to work on improvement of trade cooperation between the Serbia and Russia. The main goal has to be improvement of Serbian production capabilities, with the accent to the development of processing sector. Also, it will be necessary that cooperation with the Russian Federation has to obtain further widening of tax free regime. Before all it can cover export of poultry meat, other type of cheeses, white

sugar, cigarettes and alcoholic beverages. Considering the fact that Serbia exports mainly primary products with low value, «the costs of transport can play a crucial role in the creation of trade relations» (Knezevic et al., 2012), so in current trade relations it has be established a support system for transport companies in order to decrease transport costs. Of course, moving the export structure to products that pass higher phases of processing will decrease the significance of transport costs in close future. On the other hand, it is necessary to encourage those productions that can contribute to import substitution. Primarily in focus is the development of some segments of processing sector, such as production of animal feed, margarine and bakery products that can be successfully produced in Serbia.

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# THE ROLE OF SZAMOS MARZIPAN IN THE HUNGARIAN TOURISM AND GASTRONOMY

In today's busy and rushing world, people tend to forget about the importance of food or confectionery.Sometimes we even forget to have some food. For 21st century people, it is difficult to manage the time to have a cup of coffee with a friend or relative or just to meet somebody in a confectionery. Confectionery products have somehow lost their intimacy. Since traditions in confectionery industry go back to the 1700s, a lot of recipes and traditions have been lost during the wars. The strengths of this sector are the power to link different groups of the society as well as its potential in cultural and economic development. Many think that the wide range of confectionery do not contribute to tourism at all, however, we have to argue with that statement. Just a few examples from Hungary: if you walk along Andrássy avenue in Budapest, you can find Művész cukrászda (Confectionery of Artists) where the role of cafés and confectioneries are shown in the Hungarian culture. The Szamos Marzipan Museum in Szentendre can also be mentioned where several tourists go in each season to buy figures made of marzipan. Therefore, it can be stated that this sector contributes to the boost of tourism as well.

**Key words:** Marzipan, cakes, tourism, gastronomy.

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## Introduction

Almost everybody likes sweets. Who does not like chocolate cake or sponge cake with fresh fruits or lemon ice cream on a hot summer day? Not to mention the marzipan specialties which are not exclusively confectionery products but pieces of arts as well. Since the history and the traditions had important role in the development of the Hungarian confectionery industry, in the first part of our paper such issues are detailed.

## The history of sweets

Our ancestors collected roots, fruits, berries in the forests and hunted for animals. Women found out that berries, fruits had different flavor than the other plants in the forests, so they discovered the joy of sweet flavor. They also took the honey of wild bees which lead to the development of honey industry, which is still a significant sector of the Hungarian economy.

In the beginning, honey making and confectionery industry could not live separately, since the sweet flavor of the cakes was provided by honey. Old chronicles mention that some food was also sweetened by honey. Ancient Greeks made bonbons and candies from honey which was a huge development in catering industry. In ancient Greek houses and the Roman Empire, people often had sweets. The joy of sweets was the part of rich, hedonistlifestyle, so it was common in the rich manor-houses. We can often hear the expression, *Lucullus-orgies*.The reason is that in the time of Roman patricians there was an emperor, called Lucullus, who was famous for his great feasts with special and various flavours, including sweets. Later, there was a group of servants whose job was to make confectionery, whose owners could even free and release, so it might not be far from the truth that such ex-servants became the firth sellers of confectionery. The Bible also tells us that possessing milk and honey was the privilege of the rich «*Canaan with milk and honey*». Moreover, the hieroglyphs of Egypt refer to the fact that various fruits were dried in honey. In addition, the tales of the «Arabian nights» also talked about sweet almond, nut with honey and dried plum. The use of sugarcane was also common in the households.

Earlier, it was only the wives and chefs who prepared sweets. It was long time later when it became an individual industry and mass-production. The first step to mass-production was the availability of raw materials in the required quality and quantity that needed wheat fields, orchards, sugarcane plantations. This boosted the agricultural production, since the higher was the demand for the confectionery, the more farmers were employed. It is proved that in the early crop processing, millers baked bread and milk-loaf. After bakers divided into branches, the confectionery sector was created. Fruits have often been used in

dried form to get richer taste. Even in the early 1900s, home-made syrups and jams were used for sweets sold in shops, thus less additives have been used.

The first marzipan was made in the*Republic of Venice*. It was named after the patron of Venice, Saint-Marcus. According to the legends, marzipan was against diseases and bad things, thus believers often had marzipan in the time of plague. According to an existing tradition, bread-shape marzipan is given to people on the day of Saint Marcus. The Italian origin of the marzipan is also proved by the fact that when Matthias king married Beatrix from Naples, there was also a chess-board sweet served made of almond and sugar. It is assumed that it was the marzipan made by the confectioners in Naples (Rózsa, 1959).

**The short history of the Hungarian confectionery industry**

Due to the immigration of confectioners from Switzerland, the Hungarian confectionery industry started to develop in the 19th century. At the beginning, cakes for daily consumption or preserved cakes were not competitive, but it has changed to the second half of the 20th century. Chocolate production requires machinery thus it belongs to a different category than tea desserts or marzipan sweets. Chocolate makers used to sell only chocolate drinks, confectioners only used the chocolate as a raw material. *Mr. Emil Gerbeaud* made a revolution in the use of chocolate in 1884, when he started to prepare bonbon and dessert from chocolate. Later on, confectioners also started to produce such products.

*Significant persons in the Hungarian confectionery industry*

**Figure 1 –** Mr. József Dobos C. and the Dobos-cake named after him

Source: http://nepszava.com/2011/03/featured/ennivalo-hiressegek.html/attachment/dobos-c-jozsef-torta-hires-etel-sld000250a1ab86afa74dd6

The name of *József Dobos C.* (Figure 1) might be familiar to a lot of people and many may know the famous Dobos-cake, which was named after him. Nowadays, he is known as one of the largest founders of confectionery industry of his age, since the confectionery in Budapest that was founded by him when he was 31,offered various cakes including even some extraordinary ones for local consumption or for delivery. He found out the recipe of the Dobos-cake in 1884 which both Hungarian and foreign confectioners starved for. In 1906, when he retired, *Mr. József Dobos C.* discovered the secret of the recipe of Dobos-cake. Since then it has been one of the most popular cakes in every confectionery.

*Mr. Emil Gerbeaud*was also an important person in the confectionery industry. He was very talented and he learnt the expertise from his father. He gained a lot of experience in confectioneries of Europe e.g. in Germany, France and Great Britain. He moved to Hungary in 1884 and he started to work in the confectionery named after Mr. Henrik Kugler. *Mr. Emil Gerbaud* brought numerous innovations to the confectionery industry (Dobos, 2009).

**Figure 2 –** Mr. Emil Gerbeaud

Source: http://konyakmeggy.com/?page_id=27

*How the marzipan rose arrived in Hungary?*

Szavits Mladen, a Serbian boy came to Hungary for repair, hoping for a better future. He might have inherited the sophisticated creativity and expertise in sweets from his ancestors. At that time he was a trainee in the confectionery of the famous Mr. József Auguszt E.In the early 30s, there was a turning point in his life, because a Danish confectioner joined the company, who was famous for his handicraft and patience for the marzipan roses made of sugar and almond. Szavits Mladen watched carefully the «art of roses» that was made by the Danish confectioner (Figure 3).

Of course, later on the Serbian boy got married and this family link still exists. He developed his business and the «marzipan art» still amazes us with new and creative creatures.

**Figure 3 –** Szamos marzipan rose

Forrás: http://www.szamosmarcipan.hu/hu/product_groups/view/207/R%C3%B3zsad%C3%ADsz+hengerben+35g

**Szamos Marcipán Ltd., the business**

Szamos Marcipán, as a business was created in 1935. The amovementioned Serbian man*Szavits Mladen* (Szamos Mátyás) established and it is still a for-profit company. There was another phase of development in the 80s, when the first shop was opened in Budapest, which allowed segmentation in larger volume. The power of the family lies in the cooperation and the commitment and loyalty to the profession as well as investing in innovations. In addition, we need to mention the wish to maintain the high quality. Their success and profitability are due to the establishment of their network.

**Figure 4 –** The logo of Szamos Chocolate Workshop

Source: http://www.szamosmarcipan.hu/hu/

The business employs 250 people and 400-500 additional workers. It has 150 employees in 25 franchise shops (9 confectioneries and 16 sweet shops).

Szamos Marcipán had 2.1 bn HUF income in 2009, out of which 400 million was from export trade. Since the year of 2004, it has the title of SUPERBRAND[1], and the confectioneries bear the title «Best of Budapest»since 2005. In addition, due to its strong marketing activity, it is increasingly popular among the customers (Szamos, 2009). The Szamos Marcipán Ltd. has enriched our country with its special sweetsfor a long time. It is not a hungaricum though, many people consider it as, since it has long-term traditions in Hungary. It can be traced back to the beginning of the 1900s. However, the public thinking about the marzipan hindered its development and making it more popular. Marzipan was thought to be only an ornament on cakes. This opinion was confuted in the early 1990s and since that time the marzipan became much more popular product. The Szamos Marcipán managed to achieve in a few years that its products have become «luxury» products and spread even in abroad. More and more shops were opened especially in the second half of the 1990s because they recognized that there is high demand. Today it accounts for one-third of the business income. It has significant export activity as well, since its products are sold in Austria, Germany and England as well. However, the crisis in 2009 was a great challenge for the company, the demand stagnated. That small group of the society which was not affected by the crisis, continued to visit the shops and cafés, like earlier. It saved the company, since they were the target group of the business. After 2011, due to the innovations and the changes in customer habits, the market started to recover. New sweets occurred on the shelves, the demand increased, thus the supply needed to be expanded. In addition, the Marzipan Museum was also opened in Szentendre, next to the confectionery, where several pieces of arts made of marzipan can attract the tourist and visitors.

**Figure 5 –** The House of Parliament in the Marzipan Museum

Source: http://www.hungarybudapestguide.com/parliament-best/

The Marzipan Museum is the first museum for marzipan work of arts, displaying beautiful wedding cakes, cartoon figures and other famous people. In the shop, not only marzipan products can be bought, but hungaricum, special Hungarian products e.g. goose liver pasta, red pepper, Unicum, Tokaj aszú and pálinka as well. Therefore it is a perfect place to allow the visitors to learn much more about Hungarian culture and cuisine in addition to the marzipan.

Due to its success, the business managed to open a confectionery in Vienna, named as Mathias Szamos Konfiserie at the end of 2014. It was opened in collaboration with the Haderer confectioner-dynasty. Ádám Kelényi, the financial director of the Szamos Marcipán Ltd. said that the market in Budapest

1 Superbrand title, i.e. top brand award in Hungary. (http://www.superbrands.hu/, 2014)

is saturated, so a new shop would decrease the income of the existing ones. That is why a close, easily achievable market with high purchasing power was targeted. Based on their experience, one or two years will be necessary to establish the market. He also emphasized that they adapt to the local needs, i.e. teatime in the afternoon, wide range of hot breakfast in the morning.

The Austrian branch of the Hungarian Tourism shareholding company in collaboration with the newly opened confectioners, promote the Hungarian café culture and Budapest, as a tourism target in Vienna. Cakes are served in Zsolnay-porcelan, which is also a Hungarian specialty. The head of the branch emphasized that Austria is the second most important sending country to Hungary; Austrian tourists annually spent approx. 120 bn HUF in Hungary in the past few years, with a huge sum on tourism. Through the value added tax, they contribute an average daily 80 million HUF to the Hungarian budget. He also added that Austria is the only neighboring country where the number of Hungarian people increases(http://hvg.hu/kkv/20141203_A_Szamos_tenyleg_cukraszdat_nyitott_Becsb.

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UDK 338.43

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# AGRICULTURAL INVESTMENTS – BETWEEN PROFITABILITY AND SUSTENABILITY

The agricultural investments are often a controversial topic, caught in the middle of fierce debate between economic profitability and the rural sustainability. During the last decade the rural communities has faced with a dramatic drop in living standards accentuated mainly by the lack of financing and financial support for a sustainable rural economy.The paper contains a short analysis regarding the role of agricultural investments in achieving a competitive rural economy, in a larger context of the debate concerning the sustainable and profitable investments in agriculture. Also the paper presents some of the main concerns of the inland organizations and public authorities regarding the improvement of the agricultural investments level in rural economies.

**Key words:** investment, sustainability, food security, land acquisitions.

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## 1. Investments in agriculture – a new challenge for farmers and undertakings

The agricultural investments represent a defining component for increasing the result in valuing the inland agricultural potential. At first glance, the issue of investment in agriculture seems to be only the interest of farmers, local authorities and communities, but the effects are more durable for the domestic economy, as a whole. If we follow the implications of investments or lack of investment on agriculture, then, many stakeholders can be detected, and the consequences of investment programs in this field is multiple and the effects can be detected at both the micro and the macroeconomic level.

The interest of undertakings to make investments in agriculture has been quite low over time. The world food price crisis of 2007–08 generated investments in this area, but positive effects are overshadowed by the negative consequences that have some form of investment, especially large-scale investments for land acquisition.

As it was already proved in literature(Zaman, 2012; Ene and Njegovan, 2012; Liu,2014; Karlsson, 2014), the benefits of investment in agriculture are multiple for local communities and for the rural economy in general, as:

– employment creation,
– higher productivity,
– improvement of food availability and food security,
– poverty reduction,
– technology transfer, access to new farming technology and practices,
– access to finance and markets,
– provision of social services like education, health, rural and farming infrastructure,
– local water provision schemes,
– improvement of livelihoods for out growers.

In addition, the investments in agriculture and food system can multiply the effects on complementary sectors like service or manufacturing industries.

In fig.1 is presented the evolution of the Gross fixed capital formation in agriculture in some EU-27 countries during 2007–2011.

As it can be noticed from the fig.1, the agricultural investments in EU-27, analyzed form the gross fixed capital formation perspective, measured as percent of GVA in agriculture, has a quite irregular evolution. If starting from 2007 the agricultural investments describes an evolutionary trend, after the 2009 the level of is decreasing. This trend is describing the dubitative interest in achieving a rural competitive economy. The lack of investments, especially after 2009, accentuates the dependent character of rural economy from the state or EU`s financial support for development and the rural communities failure in promoting green and multifunctional agriculture. The evolution of the agricultural investments in EU-27 is the effect of the PAC measures outcome, which has mainly based on promoting and diversifying rural activities more than assuring agricultural sustainable development. From neither another perspective, nor the EU-27 agricultural investments, or the domestic financing support for promoting a competitive agricultural sector were not functional. For an illustrative example, in fig. 2 is presented the evolution of the Romanian agricultural net investments during 2009–2012.

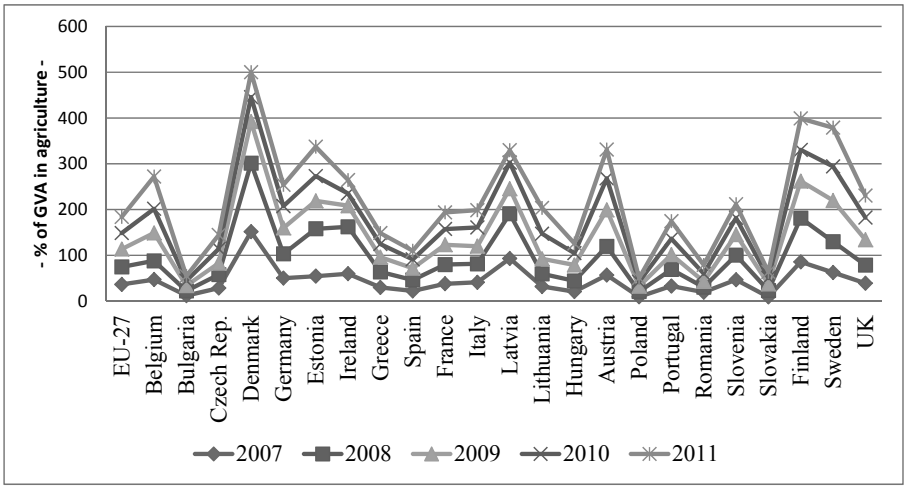


**Fig.1 –** Evolution of the Gross fixed capital formation in agriculture in some EU-27 countries, 2007–2011

Source: authors based on(European Commission, 2014).

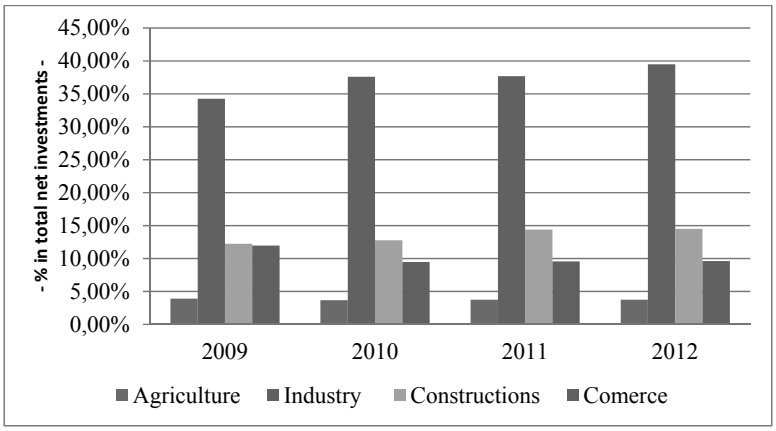


**Fig.2 –** Evolution of the Romanian agricultural net investments, 2009-2012

Source: authors based on (INS, 2013)

During the period, the evolution of the Romanian agricultural net investments had a quite stable general trend, with small varies.

The studies carried on at the international level by reputable institutions like World Bank and United Nations Conference on Trade and Development revels the existence of negative outcomes for agricultural investments (WB 2014, p.18). The major drawbacks are: disputes over access to land, lack of transparency regarding the land`s acquisition, lack of consultation and inclusion of local communities, negative impact on environment, inadequate use of the land.

The analysis performed for agricultural investments reveal the major role played by the smallholder farmers, but in the last ten years, we remark the increase of ***corporate investments*** generated by strategic concerns of food-importing countries, commercial opportunities and the rise of commodity prices. The corporate investments are made by different actor like agribusiness enterprises, energy companies, state-owned enterprises, sovereign wealth funds, private equity funds, pension funds and transnational corporations. Some studies (FAO 2013, p. 6) highlight the strengthening of trend regarding the involvement of governments (in developing countries) in agriculture field through state-owned companies. In order to promote a risk reduction strategy, the public authorities prefer not to invest directly in agriculture but to fund state-owned companies and, most often, establish public-private partnerships.

The contributions of these investments depend on the local conditions (natural and institutional), the investment contract, the type of business model, the type of investment (local or foreign direct investment) and the relations with smallholders. For example, some specialists (FAO 2013, p. 335) have raised concerns regarding the possible negative effects of ***foreign direct investment*** (FDI) in agriculture, if taking in account large-scale land acquisitions. The acquisition of agricultural land on a large scale have many economic, social and environmental implications like displacement of smallholder farmers, reduced access to resources, degradation or depletion of natural resources, decrease of grazing land for pastoralists, the loss of incomes of rural people.

The interest of foreign investors for agriculture is doubled by the interest of national authorities from host countries. According with UNCTAD experts,

(UNCTAD, 2012-2014) a survey conducted at international level revealed that ***the agriculture is the second target industry for investment incentive policies***, after IT and business services, but before hotels and restaurants (WIR 2014, p. 112).

Taking in account the negative effects of agricultural FDI on host countries, some states have modified their investment policy and have introduced new entry barriers or reinforced screening procedures (WIR 2012, p 79). These new approaches are based on the strategically importance of agriculture for food security and the consequences of overexploitation for the rural economic development and for environment. The efforts made by public authorities in order to monitories the access to land by foreigners must be accompanied by the creation of a modern, harmonized registration and ***cadastre system*** that can measure theforeign presence in an appropriate manner (WIR 2012, p 82).

**2. Concerns of international organizations and public authorities regarding the agricultural investments**

The poverty and food insecurity affects a large proportion of the world population, which is concentrated mainly in rural areas from developing countries. Investments in agriculture can contribute to poverty alleviation and raising living standards for the population in rural areas. The millennium development objectives include halving the number of hungry and people. This may seem easy to achieve, but if we consider the complexity of the problem (world population growth, the changes in consumption patterns, climate change and resource constraints), we realize that major efforts must be made at regional,national and international level.

According with FAO estimations, in developing countries, the agricultural investment needs to increase by at least 50 percent. This figure was calculated taking in account the necessity to meet projected increased demand by a world population that is expected to pass 9 billion in 2050 (Karlsson, 2014, p 5)

The FAO experts recommend making annual investments of over US$80 billion in order to meet targets for reducing poverty and the numbers of malnourished.

The FAO reports on *The State of Food and Agriculture* revealed, most often, the importance of public authorities in planning, directing and stimulating investments in agriculture. The international financial crisis affecting the ability of governments to play a primary role in making investments in agriculture. The internationaldonors were confronted with the problem in catalyzing and channeling investments in this area. At present, the experts consider that private investors and primarily farmers are the main actors in this field (FAO 2012, p.3).

The role of governmentscannot be reduced given the responsibility of public authorities to provide an investment climate and to ensure that such investment is environmentally sustainable. According with experts of World Bank (The World Development Report 2005, p.2), the investment climate is vital to growth and poverty reduction. In developing countries, the economy is highly dependent on agriculture if we take in account the agriculture`s contribution on employment and GDP. So, the public authorities have greater responsibility to provide an investment climate that is conducive to investment in the sector.

The effort made by public authorities must be associated with the behavior of private investors. In order to improve the impact of domestic and foreign investors on local economy, we note the effort made by international organizations (FAO, IFAD, UNCTAD and the World Bank) to shape the investors actions in a sustainable manner through(UNO, 2008; FAO, 2013; World Bank, 2014):

- The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT);
- Principles for Responsible Agricultural Investment that Respects Rights, Livelihoods and Resources (PRAI);
- Principles for Responsible Investment in Agriculture and Food Systems.

In fact, these principles and guidelines should be used to underlie the actions and decisions of other stakeholders like financialinstitutions and donors, smallholders and their organizations, workers and their organizations; local communities and consumer organizations.

So, the promotion of voluntary standards and good practices are essentials in this field, too. Even the international standards are non-binding and cannot substitute for national legal provisions, they can have a positive impact on investment`s decisions. (Karlsson, 2014, p.11)

The investment made by different economic agents must improve food security, respect the rule of law and best practices, and meet principles of social sustainability and environmental sustainability. In this way, the agricultural investment must be economically, socially and environmentally beneficial.

**Conclusions**

The agricultural investments are one of the tools that can be used in order to achieve at least one of the sustainable development goals – «***end hunger, achieve food security and improved nutrition and promote sustainable agriculture***».

The agricultural investments must be re-designed taking in account the following considerations (FAO, 2013; Liu,2014; World Bank, 2014):

– in developing countries, the agriculture is the main promoter for development, food security and poverty reduction;
– the smallholder farmers are the main agricultural producers, but they have many vulnerabilities because of resource- constraints (small capital available for investment, lack of access to additional financing, agricultural inputs and markets);
– the implications of foreign investors in agriculture field;
– the multifunctional character of agriculture;
– thecompetition for land and water resourcesamong some land uses industries like tourism, agriculture and mining.

– trade restrictions at international level.

The universe of agricultural investments are very complex, taking in account the stakeholders implicated in regulation, financing, conduct and operation of a business in agriculture field: small scale food producers, transnational corporations, investment funds, international organizations.

In order to improve the agriculture productivity and incomes of agricultural producers, some measures must be considered (FAO, 2013;Committee on World Food Security, 2014; World Bank, 2014):

– improve the market information regarding aspects like food reserves in order to ensure proper functioning of food commodity markets and to limit the distortions form derivatives markets; in this way, food price volatility could be controlled;
– implement resilient agricultural practices;
– increase investment in related fields like rural infrastructure, agricultural research;
– fosters gender equality and women's empowerment.

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**Ágnes Virág**

# RURAL DEVELOPMENT TROUGH THE TOURISM IN TOKAJ WINE REGION IN HUNGARY

**Abstract**

The European Union lays an emphasis on catching up of disadvantaged rural areas and within that focuses the endogenous resources in improvements. The economic diversity is a main priority and tourism is one of the most important elements of it. In the agricultural areas tourism may be a tool for the revival and development. If a well-structured organization coordinates the tourist and the economic participants' interests, assesses the opportunities in rural areas, then a complex social, economic growth may begin in the disadvantaged rural regions as well. In Hungary, one of the most important goals of the National Tourism Development Strategy (2005–2013) was to achieve the creation and operation of an institutional structure based on destination management. In recent years, several local and micro-regional tourism destination management organizations were established to bring together participants in tourist areas. The main task of these organizations is to offer valuable experience for tourists and to help the economic, social and environmental development of the rural regions, too. In my study I provide a short overview of Hungarian tourism destination management system. After that I examine the wider rural development role of tourism destination management organizations in Tokaj wine region.

**Key words:** tourism, rural development, destination management organization, Tokaj wine region.

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**Discussion**

Stakeholders of tourism have to face a number of challenges including competitiveness, quality requirements, infrastructural requirements and changes in tourism trends. Service providers need to have a versatile but unique offer on the global market, if they are to persuade the tourists to choose attractions of a particular area. Also, there are new quality demands from tourists to be met. Special emphasis is to be given to the development of tourism infrastructure. Furthermore, trends have to be taken into consideration because needs of present day tourists can only be met by offering complex programs and tourism experiences (Virág, 2014).

The participant of tourism try to increase the number of guests, guest nights, incomes and accommodations, but is not enough, it is necessary to focus on restructuring the tourism institutional system in accordance with needs of our age. Creation of a Tourism Destination Management (TDM) system which guarantees that tourism is controlled and managed by competent professionals and local communities can be an adequate answer to these challenges (Nagy – Virág, 2014).

In the early 2000s Tourism Destination Management appeared among the tourism development opportunities in Hungary. Basic principles of the bottom-up approach system are partnership, professionalism and support of financial background (Lengyel, 2008).

The one most important advantages of development concept is that stakeholders may get a role in the future shaping of the tourism sector. In Hungary, the creation of TDM system received increasingly bigger attention, the new institution structure was/is built by the cooperation of tourism professions and stakeholders in the last years. There are some domestic examples which show that Hungarian tourism is going to the right direction.

The word, destination has latin origin and from tourism point of view it can be interpreted as the (ordained) end-point of a journey. The destination can be a country, a city, a village or a wine region. The destination is an essential, definable territorial unit in which different participants work together in order to achieve a more successful tourism (Buhalis, 2000). Tourism destination management is a long term, voluntary and organized co-operation of partners (local governments, professional and civilian organizations, businesses) who manage the products and services of the destination as a complex unit with the aim to optimize experiences of tourists and effects resulting in tourism activities taking into account criteria of sustainability (Víg, 2010). The aim is to achieve sustainable and competitive tourism.

The TDM system is a hierarchically structured organizational unit, its base is the community-based organizations. The micro-regional alliances unite the local organizations. The regional organizations are made of micro-regional alliances. The peak of the system is the national organization. The TDM system consists of different levels of organizations (TDMO) (Lengyel, 2008).

In Hungary there are 80 local, 6 micro-regional, 1 regional and 1 national destination management organizations (Government portal, 2015). The Hungarian TDM system was built gradually; the institutional reorganization receives increasingly bigger attention. The development of tourism receives in-

creasingly bigger attention in National Development Concept and National Area Development Concept 2014–2020, the main aim of concept is the formation of total TDM system, the creation of accurate legal and law regulation. The TDM organizations have to face to several challenges, but the structure based on the partnership shows a positive future vision.

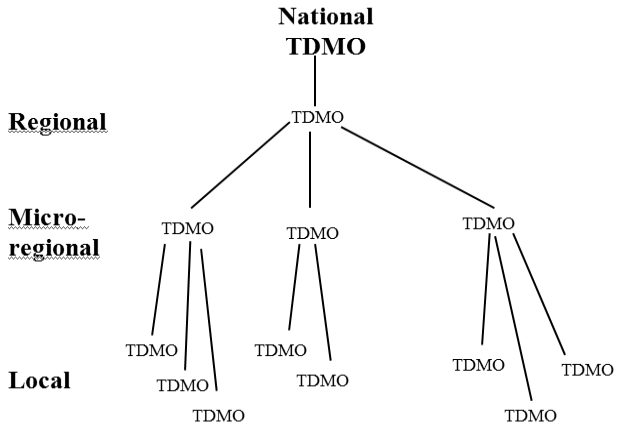


**Figure 1 –** Structure of TDM system in Hungary.

Source: Own editing, 2013.

In my research I tried to find the answer to how operate the destination management organizations in Tokaj wine region, I examined what kind of the experiences are in organizations, what kind of cooperation is in a closed wine region and how can these organizations contribute to the complex development of this rural area in the future. In order to I get to know the extensive tourist life of this region I analyzed some literary and professional materials and I used qualitative research. I made some structured depth interviews with tourist participants and representatives of rural economic organizations in Tokaj wine region. The questions were directed first I inquired about the development of tourism services, the cooperation, and the institutional structure in the region. Finally, I asked about the work and the rural economy role of the destination management organizations. The interviewers brought to my attention to lots of useful information, I analyzed these conversations.

**Results**

In the 1990's came to the fore the tourist value of agricultural land, the pasture, the arable land, the orchards and the vineyards raise the value of the countryside. Agricultural work is not only useful for food production; there are other values that promote the development of rural areas (Fodor–Gemma, 2011). The main agricultural products of the wine regions are the grapes and wines, which can be treated prominent tourist attraction as well. The grapes and wines are special endogenous resources, numerous additional services connected to them, which may ensure a complex experience for tourists (Forman, 2010). The Tokaj wine region is a multifunctional agricultural area where the sight of the vast vineyards, the grape and wine traditions and services expects the tourist.

The one of the most famous wine regions of Hungary is the Tokaj wine region, which encompasses 27 settlements in the north-eastern part of Hungary (Figure 1.). The nearly 6,000 acres of wine region is located at the foot of the Zemplén Mountains. The microclimate, soil conditions, the rivers, the grape varieties and the presence of noble mold are appropriate for the quality wine production. The thousand-year history of viticulture and onological culture provides a very good basis for tourism. The Tokaj wine region was declared the world's first controlled wine region in 1737, to which was accompanied by strict legislation, thus allowed to retain the traditions of grape production in original form. The Tokaj wine region was declared World Heritage Site by the UNESCO World Heritage Committee in 2002 which further increased the tourist value of the region (Nagy, 2014).

Hungarian grape production, wine consumption and wine tourism has undergone major changes in the last years. Parallel to the increase of wine consumption every wine region increasingly comes to the fore the endeavors to meet the demand for services which related to wine tourism. TDM organizations may be the main leader of the complex development in wine regions, may coordinate the marketing and tender activities and may help the development in rural areas.

There are four local TDM organizations in Tokaj Wine Region. The Abaúj Tourist Association and the Sátoraljaújhely-Hegyköz Tourism Association was established in 2008, the Tokaj-Hegyalja, Taktaköz, Hernád Valley Tourism and Cultural Association was founded in 2009, the Sárospatak and its surroundings Tourism Association was established in 2005, and after with the amendment of the articles of organization turned into TDM organization in 2010.

The greatest value of the area of Abaúj Tourism Association is the Hernád River and the Zemplén Mountains, territory of Association is only one settlement, Abaújszántó, where there are some wineries, so the wine attractions rather appear as a supplement. There were many tourist plans and concepts to development of the region, but these were not realized due to lack of funds. Neither the economic nor the social conditions are not conducive to proper for operation of tourism, although many ideas were formulated. The cycling, fishing and water tourism would provide many opportunities for tourism, but the real breakthrough in tourism has not yet happened. There is appropriate tourist and infrastructural background, but the program organizing is incomplete. A stable financial background and relevant professional base is missing in the institutional structure. There were lots of positive changes in the life of this tourism area, there has started development in tourism, but they have to work hard to achieve a complex rural development in this area.

There are 25 municipalities and 170 service providers, civil organizations, entrepreneurs and private individuals in the membership of the Tokaj-Hegyalja, Taktaköz, Hernád Valley Tourism and Cultural Association. In 2009 a successful TDM tender helped the starting of the organization. In 2011, the organization won another tender, some bikes were bought, and

publications are made. In the life of settlements of Tokaj wine region the tourism is a very important economic sector, according to people this is the one of the breakthrough points in this area. They can build to the world famous Tokaj wine that can be used not only in terms of Tokaj. It is difficult to reconcile the interests of different stakeholders. The local governments of wine region are aware of the opportunities of tourism, but there is no real unity, everybody is looking at their own interests. Among the winemakers is the strongest convergence, the other members could take this attitude. In addition to the cooperation there is a great need for a more balanced financial background.

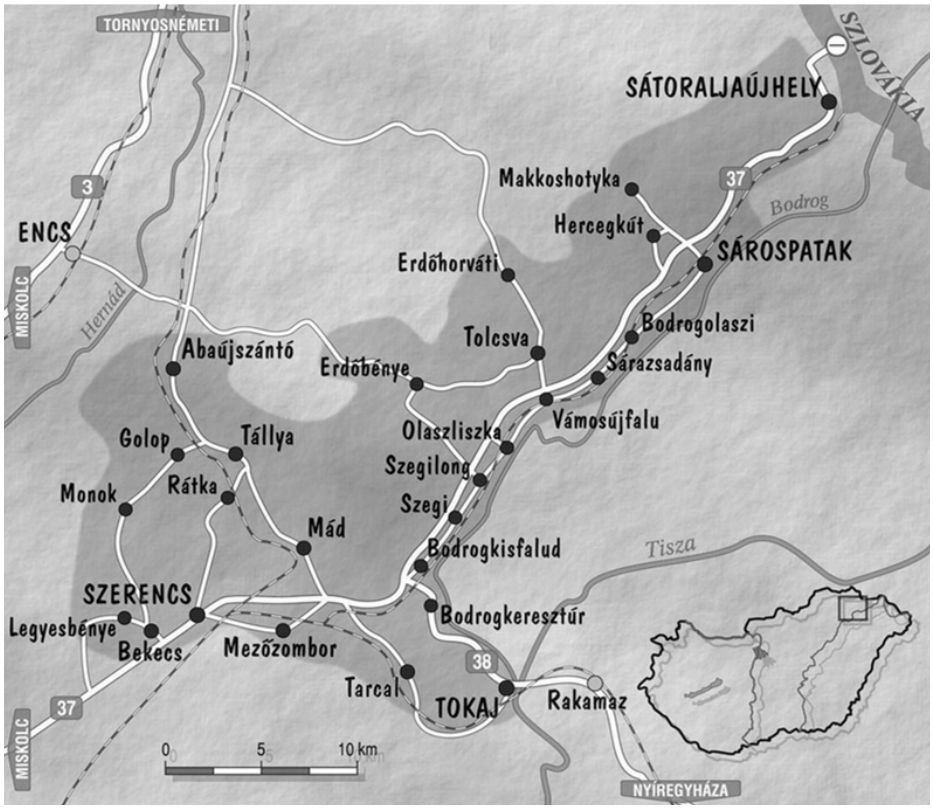


**Figure 2 –** Tokaj Wine Region in Hungary. The darker part is the area of the wine region.

Source: http://aborfesztival.hu/tokaj_73

In Sátoraljaújhely the organization has 87 members, in which there are six local governments, and there are some service providers, non-governmental organizations, private individuals in the membership. The organization has had two successful tender, first there were software and website developments, language and other trainings, some new studies and brochures. In the second tender was the focus of the marketing activities, the organization took part in several exhibitions at home and abroad. The Association has made some new brochures, has organized some programs and has purchased some other tools (GPS, bikes, telescopes) that tourists can borrow from the organization. New educational paths have been created. Several improvements have been put in this region, but the real cooperation and stable financial background is missing here too. The wine tourism appears as an additional element in development. The leader of the organization said they should focus of communication and organizational development among members and hosts.

In 2011, the local organizations created the Tokaj-Zemplén-Abaúj- regional TDM Nonprofit Ltd. by a tender. In the wine region the strongest cooperation is between the Association of Tokaj, Sárospatak and Sátoraljaújhely. The required tasks are supplying in the case of the micro-regional organization, but real work does not because there is not financial coverage. The leaders of organizations are looking for the opportunity to resolve the financial problems; they hope there will be a very good cooperation, which can help better the development of the whole wine region.

**Conclusions**

All interviewees confirmed that the Tokaj wine region has a significant tourism potential. In this natural environment there are world-famous wines, cultural and tourist values, for which will be based on tourism and rural developments in the future.

In this financial period of European Union significant resources will be allocated to the development of the Tokaj region, with it interviewees which expect significant improvement. In recent years, the TDM organizations have done a great deal to launch a large-scale tourism development in the wine region. For the time being significant result cannot be shown numerically the organizations implemented organization development, trainings, service development and marketing activities in the first tenders. Organizations

have started a process to create the basis for a more dynamic development of tourism. TDM organizations and rural operators also claim that there is need for the work of the organizations. The main problem of the organizations is the question of long-term sustainability. The real cooperation and stable financial background is missing in every organization. The cooperation is often only apparent; many stakeholders put their own interests to the foreground. Among the rural operators emphasized that although there is a positive side to the institutional structure, but the material frame is not behind them. The membership fees and other own incomes of organizations is not enough to work, so for the time being these TDM organizations are very tender-dependent organizations. Professionals hope that the questions of sustainability of organizations will become major actors in rural economy, the tourism law comes into existence with professional touch, and the different level TDM organizations will be able to retrieve the EU resources successfully in this budget season. The Hungarian TDM Alliance also looking for a solution to solve the financial and other problems.

According to all interviewees if the organizations can realize in practice the real unit and they can establish the complex supply and appropriate financial background, they can become serious players in the rural development.

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**Interviewees:**

- László Béres, Chairman of the Abaúj Tourism Association;
- László Ladomérszky, TDM manager of the Tokaj-Hegyalja, Taktaköz, Hernád Valley Tourism and Cultural Association;
- Róbert Blanár, TDM manager of the Sátoraljaújhely-Hegyköz Tourism Association;
- László Lipták, Owner of Lipták Winery;
- Mariann Bratuné Bucskó, Leader of Abaúj Leader Association;
- László Kiss, Chairman of the Zemplén Landscapes Rural Development Association;
- Ákos Szemán, Vice Chairman of the South-Zemplén Rural Development Association.

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**Irina V. Kartavtseva, Ekaterina M. Serebryakova-Shibelbeyn**

# SIMILAR AND DIFFERENT FEATURES OF B. BRECHT'S AND F. DÜRRENMATT'S METAPOETICS DURING THE SECOND WORLD WAR

**Abstract**

The article is a short comparative analysis of B. Brecht's and F. Dürrematt's metapoetics during the Second World War. The authors' intention is identification of similar and different features.

**Key words:** dramatic art, metapoetics, «double nature of a hero», «alienation», «entertaining theater», «epic theater».

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**Nowadays the metapoetics study is getting more and more popular in literary studies and dramatic theory. Inquiry of artists', poets' and dramaturgists' research of their own creativity, i.e. its reflexion, as well as the analysis of artistic word in order to determine the individual style, recognition of artistic intentions are called metapoetics. The researcher K. E. Stein argues that «... as any creation of man's thing the literary text always represents the methods by which it is created, and determines metapoetics as a special way of art's laws understanding, based on reflection of the artists' works themselves contained in their metatexts, metalanguages, i.e. self-interpretation and self-searching» [6: p. 17–36].**

In metapoetics there are distinguished:

1. general metapoetics (poetics according to the metapoetics text) is the poetics of self-interpretation, its object is the verbal creativity, in the center is the metapoetics of poetry, which interacts with metapoetics' of prose, drama, etc.
2. private metapoetics (metapoetics of Pushkin, Lermontov, Blok, etc.).

German drama during the Second World War is of particular interest in terms of metapoetics research because it can fully follow up the changes concerning not only the content and feelings of the works of various authors, but in general, the changes of individual style. To concretize this conclusion there can be cited the examples of the writings of F. Dürrenmatt and B. Brecht.

Based on the metapoetics data the layered structure of metapoetics of their drama should be noted. Metapoetics texts of B. Brecht include his poems, plays, essays, notes and articles about the theater, as well as reviews and critical notes of other literary figures on the works of B. Brecht. In its turn the metapoetics texts of F. Dürrenmatt can also be presented in this way.

The creative way of B. Brecht began much earlier – in the early twentieth century. His first works («Baal», «Drums in the Night», «In the jungle of cities») were of purely socialistic character and were aimed to criticism of the existing social system, its injustice. Later, when the Second World War began, there appeared his most famous works, «The Good Person of Szechwan», «Mother Courage and Her Children», «The Caucasian Chalk Circle» and some others. They are the most relevant in terms of metapoetics research of B. Brecht, i.e. in these works the dramatist criticizes not only the social system and the war, but also successfully employs new methods and forms of information representation both on paper and on stage.

F. Dürrenmatt released his first books in the late forties. His early works were of a gloomy character and were filled with despair. In his first works the world was full, as well as in the future, of fantastic absurdities. There are moving swinging buses through the streets, similar to the monsters, the severity of subjects seems so exorbitant that is compared with the groaning globe [4: p. 38].

F. Dürrenmatt portrayed the horror of that time, creating parodies. He wrote:

«Of course, seeing the senselessness, the hopelessness of this world, one might despair, yet despair is not the result of this world. A different answer might be: not to despair, but to decide to accept the world in which we often live like Gulliver among the giants» [8]. A human was considered in his works as a grain of sand in the world of soulless, self-sufficient abstractions faced an imminent and painful death, and crushed by a complex structure of unnatural relations [5: p. 8].

During the war there started the search of own identity and critical consciousness in literature and drama. In the works of both B. Brecht and F. Dürrenmatt there can be followed up the tendency towards the skepticism in the image of reality. They represent a system that supports corruption, falsehood and excessive materialism. Money becomes not the means, but the main purpose for their heroes. For example, the main character of the work «Mother Courage and Her Children» by Brecht is even ready to use war as a gain.

Metapoetics data demonstrate that the main objective of both playwrights is to teach the reader (viewer) to see the events in the novel from critical point of view. Everyone has their own methods for

achieving these goals. So, Bertolt Brecht leads the reader to the truth using the «alienating effect». Friedrich Dürrenmatt compares in this particular case the two worlds – the fantasy world and the real one, giving the reader (viewer) the opportunity to see their similarities and differences, it helps to understand the meaning of the work.

During the war there can be followed up the emergence of such concepts as «the duality of hero» in the works of playwrights. For example, in the crime novel «The Judge and His Hangman» (Der Richter und sein Henker) of F. Dürrenmatt Tschanz is a victim in the hands of the judge Bärlach because he uses him for its own purposes, turning in his weapon and realizing his own plans to destroy other people. At the end of the work, he says: «Da habe ich *dich* genommen, dich, den Mörder, und habe dich in meine furchtbarste Waffe verwandelt, denn dich trieb die Verzweiflung, der Mörder musste einen anderen Mörder finden. Ich machte mein Ziel zu deinem Ziel» [7].

The creativity of Brecht is also characterized by the appearance of a certain duality of hero. For example, the main character of the play «Mother Courage and Her Children» (Die Mutter Courage und ihre Kinder) is also a negative and positive character. On the one hand she tries by any means to earn money for her family. On the other hand she is too pragmatic in relation to the war. She sees in it the only source of income. For the heroine it makes no difference under which flag to trade. The main thing is to make trade profitable. The main character says the following words:

*«Ihr Hauptleut, laßt die Trommel ruhen*
*Und laß teur Fußvolk halten an:*
*Mutter Courage, die kommt mit Schuhen*
*In denens besser laufen kann.*
*Mit seinen Läusen und Getieren*
*Bagage, Kanone und Gespann –*
*Soll es euch in die Schlachtmarschieren*
*So will es gute Schuhe an.*
*Das Frühjahr kommt. Wach auf, du Christ!*
*Der Schnee schmilzt weg. Die Toten ruhn.*
*Und was noch nicht gestorben ist*
*Das macht sich auf die Socken nun»* [2: p. 7].

Mother Courage is the personification of evil that, in the opinion of the author, always wins in war. Her children Eiliph and Katrin, quite the opposite, are personification of goodness. However, goodness is not fit to be in war. Nevertheless, in spite of lust for money, mother Courage loves her children much and wants to insure them from the war, save them lives. It is demonstrated by her words to the son:

*«Ihr vergeht wie der Rauch! Und die Wärme geht auch*
*Und es wärmten euch nicht seine Taten.*
*Ach, wie schnell geht der Rauch! Gott behüte ihn auch!*
*Sagte das Weib zum Soldaten»* [2: p. 15–16].

Both dramaturges used the methods, which were unacceptable for a traditional realistic drama. They built it as a conditional model. We can make two examples: «The Good Person of Scechwan» (Der gute Mensch von Sezuan) of B. Brecht and «The Visit of the Old Lady» (Der Besuch der alten Dame») of F. Dürrenmatt. A small Chinese country Scechwan and a small Swiss city Güllen are the space abstractions, which generalize all places of the Earth. There is social and economic ruin in the places. F. Dürrenmatt does not give the name «Güllen» accidentially. «Gülle», from the German language, means some organic amendment, some animal dung. This name represents economic ruin of the society, social squalor, falsehood of its inhabitants and economic recovery by the means of money. Similar to F. Dürrenmatt, the goal for B. Brecht is to figure the illusion of the place, in which a man exploits a man.

If we compare metapoetic data about art direction of Brecht and Dürrenmatt, similarity and difference between ideas about working on a scene attract our big attention. An important moment for both dramaturges is the active involvement of spectators into the process of thinking about what happens on the scene, into critical approach. F. Dürrenmatt wrote the next words about this: «The writing is created together with spectators. Earlier I had visited all scene tests, had always participated in the drama theater in Zurich and had often led directions. However, later I got shocked during every full rehearsal. Spectators came accidentally. It looked like some foreigners came into my bedroom by accident. Working in the theater is finished for me after the full rehearsal. It is not a premier, it is done for playgoers» [3].

The organization of theater space plays very important role for Brecht too. It becomes an important point for «the epic theater theory». He says, «Scene must tell. There are no narrator and no «fourth wall» [1: p. 54]. Not only background area is important for everything what happens on the scene. It refreshes spectators' memory about actions. The projection of subscriptions helps to comment the words of actors; concrete numbers marks abstract dialogues. Plastic processes operates with numbers and sentences – actors must not transform into heroes entirely but must play keeping the distance to the hero and do it like he wants to criticize the playing [Ibid].

It is possible to say that both dramaturges experimentalize on the scene. However, the main direction of such experiments is not spactators but the art of acting and the organization of scene space. For F. Dürrenmatt it is not the place of theories and philosophic. His theater must be «colorful» and entertaining. For B. Brecht the scene must be not for entertainment but for learning. His theater was «didactic».

Thus, B. Brecht's and F. Dürrenmatt's metapoetics in the years of the Second World War have special features. Thank to comparative analysis we could identify the main differences and similarities between them. Subjects and intentions are similar because both authors tried to attract attention to the negative points of capitalist society and cynicism of the war. We can say the same about the image of the main hero. B. Brecht and F. Dürrenmatt attempt to create «the dual nature». Nevertheless, every of them does it in his own way. Both dramaturges use the methods, which are not typical for realistic drama. Generally, it is expressed in the creation of the conditional

model of the places in their works. Both authors try to involve spectators into the process of thinking over and criticism. The main difference is their opinions about spectacularity. Theater played the role of entertainment and had to be colorful for F. Dürrenmatt. Didactic role is important for B. Brecht.

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**Melinda Jászberényi, Katalin Ásványi**

# OLE OF A REGIONAL AIRPORT IN THE INBOUND TOURISM THE CASE OF SÁRMELLÉK AND HÉVÍZ

**Summary:** Hévíz is one of the most visited cities in Hungary. Hévíz-Balaton Airport is only 13 km far from the spa city. Our aim of the study is to know what the regional airport could do for the development of Hévíz and its surrounding, for which we used document analysis.

**Key words:** regional airport, spa city, regional development.

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**Introduction**

For Hungary, Hévíz is an important tourist destination, as one of the most visited and most important cities. The spa city attracts nearly one million tourists a year, but continuous renewal is needed to be able to increase this number. We believe that the Sármellék Airport could be the key of solving for Hévíz, which can create a new era of tourism with the cooperation between the spa city and the airport.

Our main question is that how a regional airport could affect the development of a region and how it could achieve this.

To explore the relationship between Hévíz and Sármellék and the inherent opportunities, the tourism of the spa city and the market positon of the airport are analysed and assessed with a case study based on document analysis. Public (press releases, programs, brochures, statistics) and archived (reports, business data) were used. The analysis of the samples assembly method was used. The information obtained from the document was compared with the formulated research questions. (Golnhofer 2001).

**The Tourism of Hévíz**

Hévíz is the second most visited city of Hungary and one of the largest spa city. The main economic sector of the city is the tourism industry. It has 10.000 beds, 300 retail selling places, 150 dining options and 30 commercial accommodations.

Due to its thermal water in 2014 the city had the largest guest traffic (almost 1 million guest nights) among thermal spa cities. Based on the foreign guest nights it has a leading position while on the basis of domestic nights it has the prestigious third place.

As well as the nationality distribution of foreign guests is constantly changing in the spa city and its surroundings. The largest shares of visitors are the German, Austrian and Russian tourists.[1] Because of the Hévíz-Balaton airports there are more and more Scandinavian, Ukrainian, Polish and Chinese tourists come to the region.

1 http://www.turizmusonline.hu/aktualis/cikk/budapest__heviz_es_hajduszoboszlo_volt_a_legnepszerubb

**The Market Position of Sármellék International Airport**

Almost the whole territory of Hungary there are airports in good distribution set up for different purposes. In Hungary among the rural airports only the international airports are relevant in terms of passenger transport. Currently only two of these regional airports in Hungary are actually having regular scheduled and/or charter flights departing and arriving. Of over forty rural airports the Fly Balaton (Sármellék) and the Debrecen Airport were/are being developed into regional centres. Even today from many aspects their infrastructure has misses, but they can count with EU sources, if they can prove the potentials of development in their strategic plans. (Jászberényi – Ásványi 2011)

The airport can be found in the outskirts of Sármellék, about 10 kilometres from the west end of Lake Balaton and 13 kilometres from Hévíz. A good connection was established by the development of M7 highway between the capital and Sármellék Airport. Analysing the regional opportunities of the region, by the building up of the highway to the Croatian border, Sármellék Airport will become easily available for Croatian and Slovenian tourists.

The Sármellék International Airport, one of the five international airports in Hungary, is the most important and also the largest traffic airport in Transdanubia, and the second busiest one. Since 2005 it was known as Fly Balaton, than in 2012 the name of the airport changed, and it is called Hévíz-Balaton Airport. Since 2006 the appearance of Europe's largest low-cost airline, the Irish Rynair operated at Sármellék International Airport for the whole year causing an enormous change in air traffic. In 2006 six airlines were operating, the scheduled and regular charter flights connected Sármellék with ten European cities. In 2006 the majority of the 80 thousand passenger traffic originated from German and English speaking nations.

In 2008 more than a hundred thousand passengers went to Sármellék. Contrarily in 2010 only 15.000 people arrived at Sármellék Airport, almost all of the passengers of the charter flights arrived from the German speech area. In 2011 in

the summer season, the airport also took flights from Moscow, even though the annual passenger traffic increased by only 25 %. From 2013 there are flights to Russian and Latvia from spring to autumn[2], due to this in 2013 the growing of passengers' number was 33 % and in 2014, it was 15%. Now the passenger traffic is almost 30.000.

**Conclusion**

To the operation of the development of Sármellék Airport the development of Western Transdanubia region's tourism is needed; in which all actors have an important task, including hotels and other tourist service providers. The airport is in relation with three travel agencies and five hotels.

German tourists can be transported from other destinations. 80 % of the foreign tourists arriving to the airport visit Hévíz, so the number of guest nights and its revenue grow due to the growing passenger traffic.

The Russian mean a great potential for the region, they continually increase the tourist traffic arriving the airport.[3] Most of them stay for two weeks in Hungary; they like and use the wellness and spa treatments, as well as their high spending mean good revenue for the region. Now the Russian Utair Airline cancelled its flights until mid –summer, so Russian come to the region by indirect lines from Budapest or Vienna. It is really important to keep the Russian tourists for several reasons: they spend twice as much time around Hévíz than for example Germans and they spend twice as much as other tourists.[4]

The Ukrainians also pose potentials for Hévíz, because they have a long tradition of balneological culture. In 2012, the number of guests from Ukraine increased by 22 % and it also increased by 10 % in 2013.[5]

Only Budapest has connection to Azerbaijan, but Hévíz with a direct flight would be also a good solution for their health problems.[6]

However to win ourselves the Russian successor states, Hévíz and the airport need to have websites in Russian, Russian speaking staff and direct link to the relevant market.[7] In this way a new initiative is expected to start in September 2015. A Russian 84-pages brochure will be printed into 200.000 copies, which will show the destination and tourist service providers of Sármellék and Debrecen Airport.[8]

For Hévíz the Swiss and Israel guests are also special.[9]

The direct link with China also creates new opportunities for inbound tourism, which the video clip about the spa city also helps.[10] In 2012 6500 Chinese tourist have already came to Hévíz, which number could increase by the further development of the cooperation.[11]

The launch of flights to Riga the airport can offer a new recreational and wellness destination for northern European countries[12], which is positioned as a health tourism destination to the market by the Hungarian National Tourist Office. The cooperation with the Latvian Airline is also important, because Riga Airport is a major hub to Northern European countries, so it ensures a better connection to Hévíz.[13]

The key is the diversification, the involvement of other countries. Hévíz and its surrounding should not focus only one country, because it can cause great loss for the region. There is a negotiation about the connection to Prague and Swedish and Norwegian charters as well as the launch of passenger and cargo aircraft with Egypt Air. In 2015 the Turkey charters is also a new connection.[14]

The aviation base also could help involving Zalakaros and other tourist frequented cities of Lake Balaton into this initiative. The common marketing could increase the passenger traffic as the flights ensure thousands of nights to the spa city and also the whole region.

Despite its significant successes the Hévíz-Balaton Airport still has problems. Although the number of passenger exceeded the magic limit of 100.000 in 2007, the current traffic is not enough fo the profitable operation of the airport. The Hévíz-Balaton Airport serves a large and important destination with a lot of tourists. In summer the Lake Balaton, all the year Hévíz and Zalakaros could provide attractive area for the visitors. So the airport is built mainly on tourism, the required number of passengers can base on inbound tourism.

The operation of the Hévíz-Balaton Airport is indispensable to the development of Hévíz's tourism, since the Airport is able to generate the largest number of foreign tourists in a relatively short period and thereby increase the revenue.

2 http://www.hevizairport.com/hirek
3 http://www.turizmusonline.hu/aktualis/cikk/aprilisban_indul_az_1000_ut_chartere
4 http://www.turizmusonline.hu/belfold/cikk/igy_csabitanak_meg_tobb_orosz_turistat_magyarorszagra
5 http://www.turizmusonline.hu/aktualis/cikk/ismet_ukran_orvosok_a_dunantuli_regioban
6 http://www.turizmusonline.hu/aktualis/cikk/ismet_ukran_orvosok_a_dunantuli_regioban
7 http://www.turizmusonline.hu/aktualis/cikk/a_magyar_egeszsegturizmus_lehetosegei_a_fak_orszagokban
8 http://turizmus.com/kozlekedes/osszefog-debrecen-es-sarmellek-az-orosz-turistakert-1123210
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11 http://www.turizmusonline.hu/aktualis/cikk/kinaiak_ismerkedtek_zala_turizmusaval
12 http://www.hevizairport.com/hirek/kozvetlen-riga--heviz-balaton-repulojarat-indul
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**Melinda Jászberényi Ph.D, Katalin Ásványi Ph.D**

# THE IMAGE OF BUDAPEST BY AN INTERNATIONAL RIVER CRUISE COMPANY

**Summary:** The actuality of our study is that Budapest won the American poll of Porthole Cruise Magazine as Best River Cruise Port of the Editor-in-Chief Award 2014, which gives the capital a very good possibility to have a better image.

An average of 110 cruise hotels comes to Budapest per year. Cruise tourists like to prolong their route a 3–4 day stay in Budapest, where they can visit the varied tourist attractions of the city and its surroundings.

In the context of the study the cruise trips in the Danube are presented and analysed, and we get a picture about the image of Budapest as a preferred and increasingly popular tourist destination.

**Key words:** image, river cruise, Budapest.

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**Introduction**

The image of Budapest is influenced by a lot of marketing tools, local people and tourists. Cruise tourism is a special type of tourism which has a growing trend in the world and also in Budapest. That's why our main research question was how the cruise tourism and a river cruise company could influence the image of Budapest. We use document analysis. Our study we analysed the brochures of a cruise company to know what elements of tourist image were mentioned about Budapest. We assumed our results in a table to show that according to Mazanec (1994) tourist image elements, the functional ones are much stronger in Budapest than the psychological ones.

**Theoretical background**

The image of tourism destinations in research work began in the 1970s. Hunt had one of the first definitions in 1971; its image is defined as people's all impressions about other places than the place of residence. In recent decades, many researchers clarified the concept of tourism image. Crompton's (1979) definition draws attention that the tourism image involves beliefs, ideas and facts. According to Parenteau (1995) among the elements of the image there are positive and negative impressions to. (Gallarza, Gil, Calderon 2002) Sulyok (2006) wrote that the tourism image is a constantly changing, complex, has complicated structure, and relative and changing patterns in space and time.

According to Gunn (1998), the tourism image appears in two levels, the organic and the indicated level. The first one means the non-tourism specific news, television reports, articles, and other information. The second level is the marketing messages mediated by destination management organizations. Fakeye and Crompton (1991) complemented these two levels with a further one, the personal experiences.

The elements of tourist image can be determined by Mazanec (1994) along functional and psychological axis, which we also used in our analysis. Mazanec (1994) analysed the image elements based on 25 researches. Along the axis, the elements appear from tangible towards the emotional elements. The basic functional elements are the wide variety of attractions, landscape, environment, natural environment, cultural attractions and entertainment, nightlife. Among the emotional image elements the quality of services, originality and hospitality play the most important role. In tourism image the landscape, the natural environment, cultural attractions the hospitality, the local people's attitude and the entertainment are the strongest elements, so most of the tourist experts examine these elements. More important, but less commonly accepted elements of image are the accommodations, hospitality, gastronomy, destination accessibility, climate, shopping facilities, as well as the peace of mind.

**Trends of cruise tourism**

The river cruising industry is one of the fastest growing vacation markets. Its growth rate is almost double compared to the overall transportation sector.

The increased market demand leads to the formation of new round cruise trips every year. However, due to the increased competition not only the cruises but the destinations also have to keep up with the quality demand with their programs. Recognizing this demand cruises have to meet their guests' needs not only on the cruise hotel but also with the destination program to special and different target groups. With new packages and thematic tours they can reach new segments of guests.

Cruise hotels offer a very good possibility to destinations where they stop to show their attractions and complex programs to the cruise guests. It is often carried out in such a way that the passengers disembark the cruise and have a one day sightseeing. (Jászberényi 2014) These destination specific programs make the cruise tourism more and more interesting, which could be a horse or folklore show;

wine tasting, cooking trainee etc. The starting and the ending point of the cruise trip have the most possibilities to convince the guests with creative ideas to stay some more days and better know the destination.

**Cruise tourism in Budapest**

The capacity of cruises on the Danube is around 160–180 people. Every year 450–500 thousand passengers visit Budapest on cruises. The European sender countries stagnate, the overseas market increases 20 % per year. 80 % of the overseas passengers are American. 40% of guests from overseas extend their stay in Budapest by 2–3 nights. Their hotel reservation is concentrated on the 4–5 star hotels on the bank of the Danube, like Sofitel Budapest Chain Bridge, Budapest InterContinental, and Budapest Marriott Hotel. (Jászberényi 2014) Annual number of ports by cruise is 15–20. There are 200 river cruises on the Danube, belonging to 10–12 bigger companies. There are five big operators in the cruising market. One of these five is the Tauck World Discovery. Budapest is the starting or the ending point of the trips in most of the times.

**Methodology**

We chose the method of document analysis to explore the image of Budapest. The advantage of the document analysis is that the documents are easily and quickly accessible via the Internet which makes this research method highly economical. In some cases, such materials are the exclusive sources of information. Another advantage of this method is that it does not affect the research results, but the materials concerned are not always comparable. The documents may reflect a unilateral view as they represent the approach of the company Tauck World Discovery about Budapest by brochures (Golnhofer 2001). However, these sources are sometimes difficult to access and/or deficient, and coding may also be a serious problem (Krippendorf 1980).

Table 1 – The elements of tourism image by Tauck World Discovery's trips

| The elements of image | Trips to Budapest | Trip from Budapest | Trips through Budapest |
|---|---|---|---|
| A wide variety of attractions | Szechenyi Baths, Heroes square, House of Terror Museum, castle Hill, Fisherman's Bastion, Matthias Church, Parliament, State Opera House, Chain Bridge | Chain Bridge, Castle of Buda, Matthias Church, St. Stephens's Basilica, Heroes' Square, Parliament, Andrássy Avenue | City Park, Andrássy Avenue, UNESCO World Heritage Site, State Opera House, St. Stephens's Basilica, Synagoge at Dohány street, Heroes' Square, Imre Nagy Memorial House, House of Terror, Fisherman's Bastion, Matthias Church, |
| Landscape, environment | Historic sites | mediavel sites in the Hungarian countryside | two cities on opposite sides of the Danube |
| Natural attractions | | Danube, park | Danube |
| Cultural attractions | Jewish history, Hungarian Icons, Romanian musician at home, insights into Liszt | Bartók Béla Memorial House, historic monuments | cultural sites, jewish heritage |
| Entertainment, nightlife | Trendy ruin pubs, district 8 walk, Budapest Concert | Private piano recital | guided tours |
| Shopping facilities | shop like a local, Covered Market | | |
| Information | The brochures | | |
| Sport facilities | | | |
| Transport facilities | Pedi cab | | |
| Accommodations | Le Meridien, Kempinski Hotel Corvinus | Le Meridien | Le Meridien |
| Gastronomy | pastries and schnapps, local restaurants with traditional and international cuisine | | private dinner |
| Price/value ratio | | | |
| Climate | | | |
| Relaxation vs. Mass tourism | | | |
| Availability | Budapest Ferenc Liszt Airport, Keleti train station | | |
| Security | | | |
| Relationship | | | |
| Hospitality | Puszta horse farm | | |
| Originality | folk traditions of Hungarian betyárs of centuries ago, horseback ride in Kunsági National Park | | |
| Quality of services | | problem-free, most exciting and memorable | |

**Results from document analysis**

Tauck Word Discovery was founded in 1925 which runs lands tours all over the world, but its river cruises focus in Europe. The first European river cruise launched in 1992 (Tauck World Discovery 2015) These cruise hotels have a lot of luxury services and another plus is that the guests spend less time on the cruise and more time exploring the stop destinations as Budapest. (OverwaterWorld.com 2015)

We analysed the Tauck World Discovery's three brochures (Tauck 2014 2015ab) by document analysis, in which there are seven trips where one of the stops is Budapest. In four of them Budapest is the ending point (Imperial Europe: Budapest, Vienna &Prague, Blue Danube, Amsterdam to Budapest by Riverboat, Musical Magic along the Blue Danube), one of them start from Budapest (Budapest to the Black Sea) and two of them go through Budapest (Warsaw, Budapest, Vienna & Prague, Grand European Cruise).

Table 1 shows the results of the document analysis. We collected all of the elements which refer to the image of Budapest in three types of tours. There are some elements which were mentioned in brochures in all trips such as Heroes' Square and Matthias Church, so especially the wide variety of attractions. The accommodations and the availability were the same in all of the trips as the Meridien Budapest hotel, and the Budapest Liszt Ferenc Airport and the Keleti train station. The brochures themselves mean the information element. It is interesting that the shopping and transport facilities, hospitality and originality elements were mentioned only in the trips to Budapest. About quality of service only a citation referred to: Our entire Budapest to the Black sea cruise was seamless and problem-free", "one of the most exciting and memorable adventures we've had". There are some elements for which there is not any referred words as sport facilities, price/value ratio, climate, relaxation/mass tourism, security and relationship. It could be because the brochures as marketing tool cannot be appropriate to refer these elements.

**Conclusion**

Analysing the image of Budapest by document analysis we could say, that not all of the elements of tourist image could appear in brochures. It is interesting that some elements totally miss from brochures as sport facilities, price/value ratio, climate, relaxation/mass tourism, security and relationship. The typical functional elements are very strong but most of the psychological elements are weak in the image of Budapest. So the results show that we should concentrate in our marketing tools to the psychological elements. Cruise tourist should know about our security and relationship. And we also have to emphasize our good price/value ratio, our good climate and the sport facilities as well.

Despite the fact that cruise tourism has long history in the river Danube, the organization which is responsible the tourism of Budapest did not deal with this segment. They thought it is not useful for Budapest because of all-inclusive service on cruises. Nowadays the approach has already changed and they see all of the advantages which cruise tourism can bring to Budapest. Travel agencies started to offer optional programs, which bring plus income. Trips could be supplemented with a 2-3 days staying, which tourists have high willingness to spend. Without marketing the country could be advertised by cruises. But we also have to know there are some threats. Vienna also applying for this transit position as Budapest, and the city has already carried out major port developments. On the other hand Budapest port infrastructure needs development. There is also a big problem there is no consensus about the place of international ports: If they remain in the city, they cut of locals and tourists the direct contact with the river Danube. But if they are in quay out of the city, Budapest loses the competitive advantages against Vienna.

Assuming our results and conclusions we could say that it is worth dealing with this segment of tourists and also investigating to analyse the impact of cruise tourism to the image of Budapest.

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**Usman Zainab A., Olagunju Kehinde O.**

# COCOA PRODUCTION AND QUALITY IN NIGERIA: AN ANALYSIS OF PRE AND POST-LIBERALIZATION EFFECT

**Abstract:**
The Nigerian cocoa industry has undergone the wave of policy effects which has impacted its output, and so far determined its position among prominent world cocoa producers and also once determined the faith of Nigeria as an agrarian economy in the 60s and 70s period. This study reviewed the policy characteristics and effects in the cocoa industry in Nigeria and among prominent cocoa producing countries. This was divided into pre-liberalization and post-liberlization era. The Ivorian and Indonesian system due to their position in world cocoa production, featured as a case study. It was discovered that their policy systems were not so much a super-duper, they also have vagaries of defects in their policy system, and thus did not rule out the Nigerian fully liberalized policy as bad, but was sufficient enough to point out the belligerent attitude of the Nigerian government towards creating the basic structures for a free market system to survive. The liberalized system is however characterized with decreasing output, poor quality, poor infrastructural facilities, poor market information, wider gap between the farmers and the market, too many middle men in the supply chain, increasing farmers' vulnerabilities to middlemen amongst others. To basically meet the aim of liberalization, it was recommended that cocoa farmers should be empowered with information (production and marketing), inputs and infrastructures among others of which government has a cogent role to play.

**Key words:** Cocoa, Cocoa production, Cocoa Quality, Pre-liberalization, Post liberalization, Nigeria.

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## 1.0 INTRODUCTION

### 1.1 Cocoa and its Importance

Cocoa(*Theobroma cacao*), from the *Genus Theobroma* and family *Stericuliacea*, originated from the Amazon basin and are cultivated in more than forty countries around the world on estimated land areas of 3.6 million hectares and over 3 million tonnes of dried beans annually (deZaan cocoa manual, 2008). Africa produced 72 % (2.942 million tonnes) of the world cocoa which forms the largest share, while Latin, Asia

Oceania accounted for 16 % (666,000 tonnes) and 12 % (496,000 tonnes) respectively (ICCO, 2014). West and central Africa are responsible for 70 % of world cocoa with Indonesia as the highest (13 %) outside the African continent (ICCO, 2007). A larger percentage of cocoa production is from West Africa, of which Cote D'ivoire holds the ace as the highest producer of cocoa in the region, continent and the world.

Major cocoa producing countries in the world include-Cote D'ivoire (39 %), Ghana (21.4 %), Nigeria (6.3 %), Brazil (5.3 %) Cameroun (5.2 %) and Indonesia (17.0 %) (FAO, 2010). Others include Ecuador, Dominican republic, and Malaysia contribute 3.5 %, 1.4 %, 1.3 % of the total world cocoa output respectively (Joseph and Adewale, 2013). The importance of cocoa to the world as a whole cannot be overemphasized as 46 % is consumed in Europe, 14 % and 10 % by North and Latin America respectively, while Africa consumes 4 % of the apparent consumption in 2011/2012 cocoa season (ICCO Quarterly bulletin of Cocoa Statistics).Cocoa is one of the major agricultural cash crop produced in Nigeria and had once left a landmark in the Nigeria's agricultural industry as a major source of income before the discovery of crude oil and it still reckons to the country's Agricultural sector as the highest foreign exchange earner (Oluyole, 2009, Adegeye 1996). Despite the effect of crude oil discovery on the country's agricultural sector, cocoa still maintains the second most valued export produce after petroleum and the most valued non-oil export produce (Adeniyi and Ogunsola, 2014). Nigeria is currently the fourth and third largest cocoa producer in the World and in Africa respectively (FAO, 2010). She upholds the largest market economy status after the rebasing of its GDP in 2014, but in reality the recent depreciation in the value of its naira due to the price fall in crude oil price is presently an eminent warning of looming economic problems such as increasing food insecurity, unemployment rate amongst others. The country's cocoa sector is not left out in the wave of poor investment, poor practices and policy effects. Notwithstanding, cocoa could still serve as a messiah like the case of the Indonesian cocoa. It is thus important to state the need for an urgent review of the country's cocoa sector policy and government intervention at the farm level.

### 1.2 Overview of Cocoa Production and Quality in Nigeria

In Nigeria, like many other cocoa producing countries, cocoa is a non-oil export crop, produced by small-holder farmers and serves as a means of livelihood to millions of her populace who are cocoa farmers, local buying agents, exporters and processors. The trend of cocoa production in Nigeria is widely attributed to pre and post oil boom, because of its characteristics as a one-time mainstay of the economy with an immense contribution in the 1960s and 1970s (Adeyeye, C. T., 2011, A. E. Oguntade, 2010). The peak of production was recorded at 308,000 tonnes in early seventies putting the country among

the highest cocoa producers, it recorded a decline in early 1980s to 155,000 tonnes (Adeyeye C. T. 2011) and continually to 140,000 tonnes in 1983 (FAO-STAT, 2015). The pre-oil boom cocoa era also recorded Nigeria as the second largest producer of cocoa, this contributed to the growth rate of agriculture from 8–10 % per annum, it also contributed to the country's development as the main foreign exchange earner (Ayinde *et al,* 2012).

In cocoa export market, quality is key to the export value of cocoa beans and a country's premium earnings. Quality in cocoa is defined as a measure of the superiority of the dried beans and the percentage of high grade beans with the intended flavor profile; it also includes presence of low levels of foreign material, proper fermentation, appropriate humidity levels, low levels of diseased and insect damaged beans and low levels of free fatty acids. Quality parameters in physical and flavor quality parameters include bean size, waste foreign material, moisture content, broken beans, uniformity, insect and rodent infections, number of defects, degree of fermentation, the flavor quality as a result of good fermentation and drying of the beans (deZaan 2008. Other quality characteristics include flavor profile, varietal selection, and certifications such as organic certification on demand by certain markets (Fair trade International; 2013).

Policy changes effect in cocoa producing countries is evident in their production, marketing and quality of cocoa beans and a major factor for policy changes is the volatility nature of cocoa price in the export market. The cocoa industry in Nigeria has witnessed policy changes from the pure state control of its exportation to a free-market affair, and thus the cocoa era can be discussed based on its pre- and post-liberalization periods. The State control (pre-liberalization) era in Nigeria's cocoa industry featured the sole exportation, price and quality control by the monopoly Nigeria Cocoa Board (NCB) which had its selected crop of licensed cocoa buying agents and also (A.E Ogunta-de 2010). This era though recorded increased cocoa production also documented poor incentives to producers, corruption and inefficiency, afurther decrease in the early eighties led to the introduction of the Structural Adjustment Policy in 1986, it was an era opened to private exporters where the forces of supply and demand determines the price. Till date, post liberalization has further worsen cocoa beans quality and not added to increasing production and the new price was the major concerns of stakeholders (Adeyeye C.T, 2011) creating a wider gap between the farmer and the export market (Olajide and Adewoye, 2012), a poor or no input supply and poor extension services since the government is no longer involved (Adeyeye C.T 2011, Olajide and Adewoye, 2012). Apart from policy problems, the cocoa industry in Nigeria is subjected to old trees stock liable to persisting diseases and insects attack, poor management practices, poor extension services among others (A.E. Ogunta-de, 2010). All these problems persisted and aggravated at post-liberalization. Of concern is the increasing middle men activities in the cocoa supply chain, thus creating a wider gap between the small holder farmers and the export market. Coupled with this, major cocoa producing zones lacks infrastructural facilities to convey produce from their farms; most cocoa farmers are left at mercies of local buying agents in a bid to prevent further defects to cocoa beans which outrightly means decreasing income for farmers. The importance of quality in the cocoa industry in Nigeria is more pronounced in post-liberalization as farmers gets the bunch of the cut in the worth of their produce, this has continuously reflect on the low investment in cocoa production and quality management.

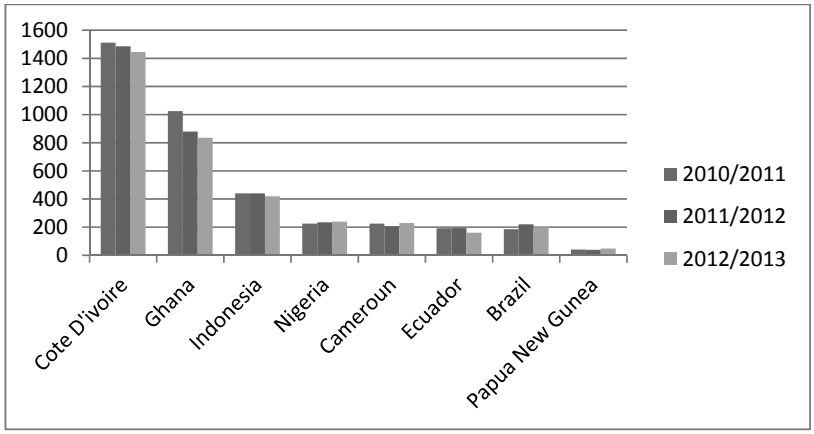


**Figure 1** – cocoa production in tonnes between 2010 and 2013

Source: www.statista.com. Authors' own editing, 2015

## 2.0 STRUCTURE OF PRE AND POST-LIBERALIZATION SYSTEM

### 2.1 Structure of the Pre-liberalization system

The characteristic of cocoa sub-sector in the early years was the use of marketing boards and the caisse system (Gilbert 2009). The significant difference between the two is that while the former is in total control of the government which Gilbert 2009 described as the British monopoly-monopsony system, the caisse system still accommodates the presence of private individuals but with the regulations solely owned and controlled by the government. While the marketing board was practiced in Nigeria and Ghana, the *caisse* system operated in Cote D'ivoire. In Ghana, the cocoa marketing board was established in 1947 and was saddled with

the responsibility of protecting farmers from the volatile nature of cocoa price (GAIN, 2012). Among its other functions was price fixing, quality control, supply of input, give allowance to license buying agent to cover transportation and procurement costs (Stryker*et al*, 1990). The board further contributed to community development programmes funded from surplus earnings from cocoa. Apparently, the Ghana COCOBOD was besotted with inefficiency and corruption which led to the decrease in cocoa production from 591,000 tons in 1964 to 159,000 in 1983 and decrease in producer share in free on board prices to as low as 21 percent (IFPRI, 2012). The Nigeria cocoa industry also witnessed the state control through the marketing board prior to the Structural Adjustment Policy in 1986. It was introduced in 1947, like other marketing boards under state control; its aim was to protect farmers from the volatile nature of cocoa prices in world market (Joshua, 2012). To ensure this, cocoa producers were given prices; it also appoints its license buying agent which could be individuals group or cooperative.In the cause of balancing prices, producers receive prices far below world prices with high taxes, this was a disincentive to increasing production , also prominent was inefficiency and corruption in the board which led to its scrapping in 1986 (Joshua 2014, A.E Oguntade, 2010, Anti-Slavery international, 2004). The Ivorian and Cameroonians Cocoa sector earlier experienced the *caisse* system (Caisse de Stabilisation et duSoutien des Prix des Produits Agricoles-Caistab). The *caisse* system although was devoid of total control of cocoa produce. It only focused on price stabilization and costs for farmers and exporters through the use of stabilization funds (Anti-Slavery International, 2004).

**2.2 Structure of Post-liberalization System: Partial and Full Liberalized System**

It is of noteworthy to state that despite the pressure of the Ghana COCOBOD, its cocoa industry never succumbed to full price liberalization of its sector and has thus been known to enjoy high premium prices (GAIN report, 2012) of about 3–5 % (Gilbert 2009). It rather transformed to the partially liberalized system. The partially liberalized system features the presence of the state and private control system. In this system the function of the Ghana COCOBOD include, determination of cocoa purchase season, monitor and control of exports and internal marketing of cocoa beans, subsidize seeds to farmers, seed improvement/hybridization, cocoa quality control and provision of extensive services to cocoa farmers (GAIN report, 2012).This system effectively controls the activities of the middlemen who are the private companies tagged License Buying Companies (LBC) by fixing prices to buy cocoa from the producers at established buying centres and sell to the COCOBOD also at a fixed price (GAIN report 2012).

A different scenario can be seen in the existing liberalized sector in Nigeria and Cameroon. The Structural Adjustment Policy (SAP)in 1986 in Nigeria saw to the emergence of private exporters, powerful local buying agents with the incentive of no export tax, no government interference except in the areas of state inspection, payment of warehouse inspection fees, merchant registration fees, and fees on movement of cocoa (Anti-slavery, 2014). With many players in the scene it has thus created a wider margin between the producers and the market (Olajide and Adewoye, 2012). Coupled with poor road networks in the cocoa producing areas, farmers are left at the mercy of local buying agents and exporters. The system features a poor backward investment towards improving production; cocoa farmers are faced with increasing cost of pesticides, which apart from labour is a cogent need in cocoa production, insufficient fund to purchase agro-chemicals and poor access to credit institutions (Sanusi and Lawal, 2006). The local buying agent and exporters in Nigeria to an extent have strong presence and controlling effect on cocoa farmers because farmers' are left at their mercy for input supply and a promise to deliver their cocoa beans (Ojo 2005). Also, the LBAs have caused the exit of some exporters; while farmers are at their mercy for input provision, the exporters are at their mercy to deliver cocoa based on previous advances, huge indebtedness has occurred, trust is what the present cocoa industry thrives on (Hamzat, 2005) but has seen little of it . All these, greatly adds to the quality issues of cocoa (Hamzat *et al*, 2006). The liberalization process has further promoted a competitive level for exporters and local buying agents, while they protect themselves from the cocoa price volatility, farmers bears most of the brunt and are surcharged at a certain percentage based on quality issues of their cocoa. Exporters are forced to go into certain cocoa certification in order to meet international market needs based on quality and quantity; prominent among these certification programmes are the UTZ certification, fair trade certification, and a quest for certified organic cocoa among others.

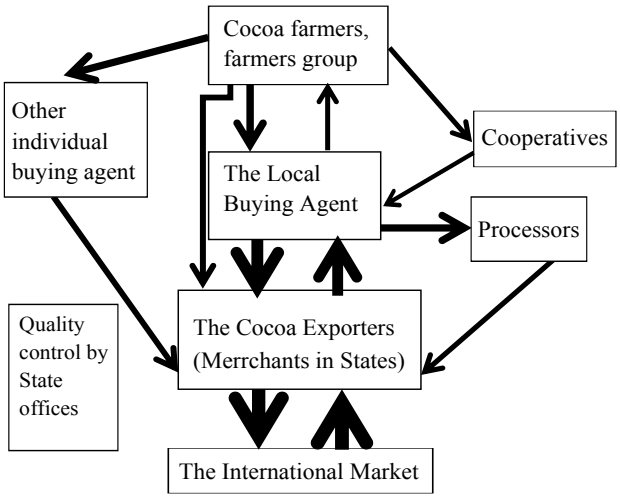


**Figure 2 –** The Liberalized system in Nigeria.
Source: GAIN Report 2012; Author's own editing, 2015.

**2.3 Case Study: The Ivorian and Indonesian cocoa sub-sector**

Figure 3shows the cocoa output for five major contributors to world cocoa production. The figure shows a sporadic growth of the Indonesian cocoa output and a significant geometric rise in the Cote D'ivoire cocoa output. Both countries overthrew Ghana and Niger-

ia who were the leading producers in the early 60's towards mid 70's. While Ghana's output compete to take over its once lost glory, the output from the Nigeria's cocoa sector has not fared better than expected. The three toppers have a trade system which is different from the liberalization system. They all showa characteristic of significant state involvement. Exactly the reason for the Ghana's partially liberalized sector and the Indonesian government owned cocoa farms has an effect on policies in the cocoa industry. Indonesia is the third largest producer of cocoa after Cote D'ivoire, and Ghana ( FAO, 2010). The Indonesian cocoa sub-sector's messianic performance in the face of Asian economic crisis in mid-1997 contributed largely to the country's economy, this, Daryanto 1997 referred to the agricultural sector as a social safety valve (Muhammad Arysyad, 2007). Like its counterpart West Africacompetitors, Indonesia cocoa industry has small-holders farmers' family of 800,000, in major producing areas of Sulawesi Island, Sumateria Island, Bali, Maluku and Papua (Har Adri Basr, 2006). With 992,000 ha of land under cultivation , small holder farmers holds 89 % of farm lands, 5 % and 6 % for Government estate and private estate respectively (Har ADI BASRI, 2006). The yield of smallholders cocoa farmers is more than the West African (like Nigeria with over a million hectares under cocoa cultivation) to the tune of 1299kg/ha and contributes 88 % of total production (World bank, 2002),it can be as high as over 2000kg/ha in areas of low pest and diseases incidence (Muhammad Arysyad, 2007), a major factor responsible for this is low age of tree stock (Gray, 2000, cited in Muhammad Arysyad, 2007), other factors include abundant suitable land areas and supportive climate, low cost of labor, good transport and infrastructure in Sulawesi which is the major producing area, huge macroeconomic support such as no export tax and a devaluated exchange rate, relatively low government intervention (research and development), proximity to Malaysia aid transfer of technology easily ((Muhammad Arysyad, 2007).

Cote D'ivoire's cocoa sector also features the heavy presence of government investment and revenue managementbetween 1960 and 1980, the country recorded increased production from 100,000 tonnes to 370, 000 tonnes. Most significant victory can be attributed to investment in industrial production, infrastructural development, and creation of parastaltals corporations to encourage agricultural and industrial development (Sarah Grossman Green and Chris Bayer, 2009). The country's marketing system is more pronounced on price stabilization which has a backward effect on its increasing cocoa beans production, while there are presence of private individuals, there is a minimum set price at the farm level, a price refund to the exporters or to the state control in case of decrease or increase in world price markets (AntiSlavery International, 2014).

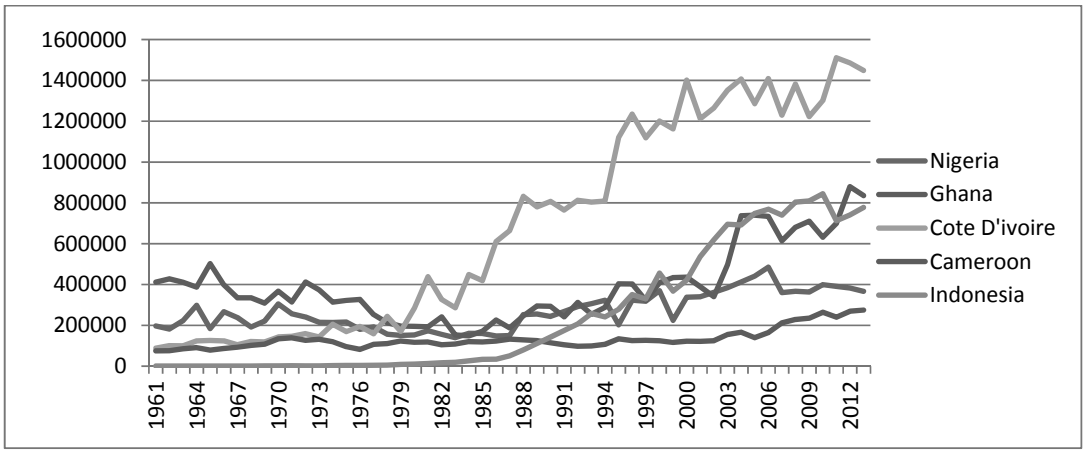


**Figure 3 –** Graph of cocoa production from 1961–2013

Source: FAOSTAT 2015, Authors own editing, 2015

### 3.0 SUMMARY

This study recognizes that while price is a major determinant of the production and quality of cocoa beans, the level of adopted control in the face of currency devaluation, forces of demand and supply, climatic factors, management practices at farm levels, infrastructural interventions, speaks volume of the output and quality of cocoa beans. On the basis of control of this price volatility, while the partially liberalized system in Ghana strictly controls middle men activities and the government is still responsible for cocoa exportation, this approach has favoured the quality attribute for the Ghana's cocoa and has earned it the best premium among its Africa's cocoa producers (Gilbert, 2009). The Nigeria liberalized system has recorded an increment in cocoa output more than the marketing board days as shown in the figure 4, but has not improved in quality; it is obvious that the same tale befalls Cameroon's cocoa industry. Gilbert and Tollens 2003 argued that poor quality effect should not only focus on exporters supply of quality but on their demand for quality. However, farmers lack poor management practices (Faturoti, 2010), poor extension activities among others cannot allow small-holders farmers to meet the demanded quality, Olajide and Olawoye 2010, established a positive correlation between farm income and cocoa quality.

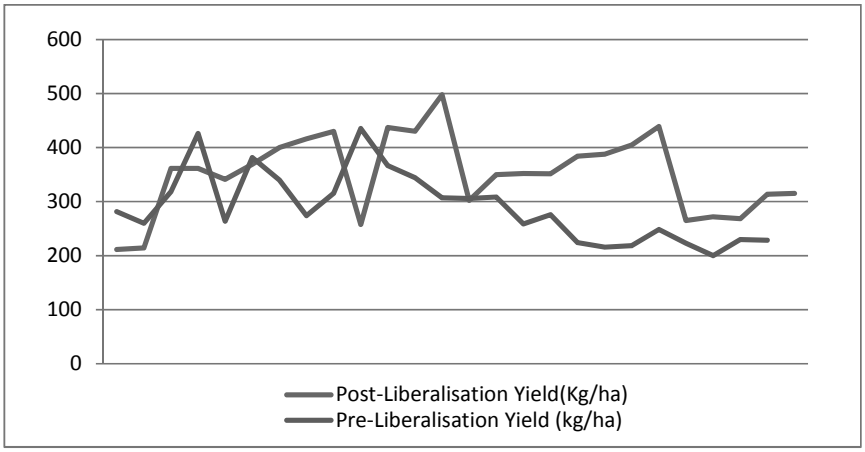


**Figure 4 –** Cocoa yield/ha in Nigeria (Pre and Post Liberalization)

## 4.0 CONCLUSION

It is evident that the present liberalized policy in Nigeria neglected the cogent farm level subsidy support; input supply and cocoa quality control and most importantly infrastructural incentives needed in free market system. It has not successfully increase the farmers' income, but rather exporters' income; expose farmers more to cocoa price volatile effects without a cushion, reduce farm level income, poor market information, little or no premium trickles down to the farmers from the exporters angle among others. These, however cannot be totally attributed to failure of the liberalization system but the failure of non-availability of incentives to improve liberalization. On the other hand, the Ivorian system cannot however be said to be a superduper, but has shown a surviving trend as world leading cocoa producer and has flawed liberalisation (Gilbert 2009), with yet a limit to quantity exported, price control and price stabilization, like the Ghana cocoa, all was to create a buffer and protect farmers. According to Gilbert, 2009, the Ivorian technique has rather created a chaotic and expensive system. On the following note it is recommended that as much as government should not be involved in cocoa marketing. It must mandatorily play its role in providing necessary incentives at the farm levels such as provision of inputs at subsidized rate, this would to a large extent decrease farmers' dependence on local buying agents, provision of farmers school, infrastructural development, allocate higher for research and development, make adequate extension services available. A cue can be taken from the Ivorian systems, for a tremendous investment in infrastructural activities which major cocoa producing zones are lacking.Other recommendations include:

- Youth programme should be centered towards improving cocoa production, youths can be used to enlighten aged cocoa farmers on good management practices, planting of new seedlings etc.
- Adopt susbsidy dispensation based on group to encourage farmers to form groups and cooperatives.They can sell into their groups and to the exporters directly. This will create a further awareness of market price and improve direct participation of farmers in marketing.
- Adopt technological market information for farmers on cocoa market price and input price information should specially include cocoa, this is most important for cocoa and other commodity crops
- Liberate farmers from depending on input supply from other stakeholders in the coco chain, by providing inputs at subsidized rate.
- Create a stricter quality control at the exporters' warehouses.

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**Zoltán Bujdosó, János Pénzes**

# TOURISM COMPETITIVENESS AND TOURISM DEVELOPMENT IN THE BORDER REGIONS OF HUNGARY

**Abstract**

Following the changes of regimes in Central Europe, research into border regions has been increasingly adverted. On the estimation and development of borders and border regions were impacted to the highest degree. In our research, we intended to explore, by applying statistical indicators, to what extend the situation of border micro-regions is different from other micro-regions and the national average. As a next objective, our research focused on how, from the point of view of tourism, the micro-regions studied can be distinguished beyond the significant spatial differences represented above as well as on to define the most relevant groups and the differences among them. In this paper, on the one hand, by applying the approach by this latter author and, on the other, similarly by applying the method of desaggregation, the authors intended to study tourism competitiveness and its components in the tourism regions of Hungary. According to the results of our surveys, countries wiling to gain access were not blocked from each other by Schengen borders as they received facilitations in cross-border tourism. In the field of cross-border cooperation, within the tourism industry, a west-to-east and north-to-south gradient can be detected that, by the present logic, can be explained by the changes of economic circumstances and the succession of European Union accession.

**Key words:** border; tourism; regional development; theories; cluster analysis.

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## Discussion

Almost one-third of the territory and 21.9 percent of the population of Hungary could be regarded as borderland in January 2009 (Figure 1). In general, these LAU-1 (former NUTS-4) microregions are backward areas in the light of the most important statistical indicators, because they are characterised by low population density and low level of enterprising spirit, significant out-migration and unfavourable income situation (Kozma 1995, Bujdosó et al. 2011).

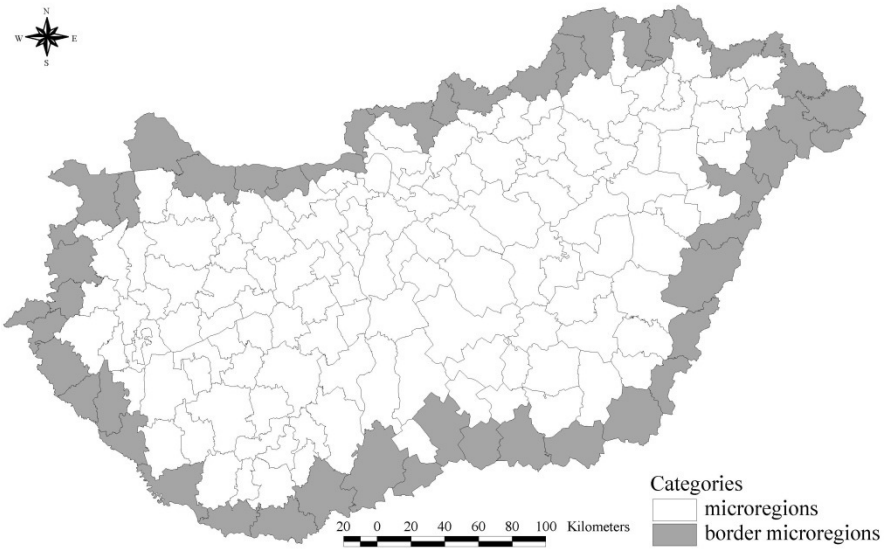


**Figure 1 –** Border microregions in Hungary

(Source: edited by Bujdosó et al. 2011)

Lots of ideas came to light in order to resolve the peripheral situation, but most of them remained unsuccessful. At the same time, tourism and tourism development were regarded as a possibility to break out in every concept (Kozma, G. – Asworth G, 1993, Süli-Zakar, I. et al. 1999, Dávid, L. – Baros, Z. 2007, Kozma, G. 2007, Kozma, G. 2008, Kozma, G. 2009). The Regional Operational Programmes (ROP) might

be viable from the concepts due to the financial resources added to them. Two operational objectives were outlined within the priority of tourism; on the one hand, the prolongation of the touristic season, and on the other hand, the extension of the target areas of tourism (with the involvement of the less preferred settlements).

The following preconceptions were composed on the basis of the previous statements: the touristic supports – according to the ROP objectives – concentrated on two fields, namely on the frequented touristic target areas and the less preferred territories.

We had a threefold goal, as the analysis of the per capita touristic supports of the border microregions were aimed from territorial point of view besides the investigation of touristic competitiveness and the calculation of correlation between the touristic competitiveness and the distribution of touristic supports.

The investigation of static and dynamic competitiveness was carried out (for the year 2008 and for the interval 2000–2008) using the Hoover index and correlation calculations. The database is from the HCSO TSTAR and the EMIR (HSCO – Hungarian Central Statistical Office; EMIR (Unified Monitoring and Information System) database.

## RESULTS

### Competitiveness in the border microregions

The international literature of regional competitiveness is expanded as a result of Michael Porter's activity (see Porter, M. 1996; 1998; 1999). In the recent years, articles were published about touristic competitiveness (Schroeder, T. 1996; Enright, M. J. - Newton, J. 2004) but in the current study – in contradiction to their work – we mainly focus on the possibilities of measuring.

In the last few years, remarkable studies appeared about the measuring possibilities of the concept of regional competitiveness in Hungary as well and we tried to utilize the results of these (Kozma,G 2002, Pénzes, et al., 2008). These studies represented the quantitative decomposition of the relative personal incomes into the adaptable and clear social-economic factors (Lengyel, I. 2000; Nemes Nagy, J. 2004). The method of decomposition was carried out by the study of József Nemes Nagy in order to investigate the competitiveness and its components of the border microregions. The multiplication became more easily treatable summary after the logarithmic transformation, using the formula below:

$$\log\left(\frac{Income\_from\_accommodation\_fee}{Population}\right) = \log\left(\frac{Income\_from\_accommodation\_fee}{Tourism\_night}\right) + \log\left(\frac{Tourism\_night}{Capacity}\right) + \log\left(\frac{Capacity}{Population}\right)$$

In our study, the total income from accommodation fee, the number of tourism nights and the capacity of the public accommodation establishments, and the number of population for the microregions were applied. The total income from accommodation fee per capita expresses the tourism development of microregions, the income from accommodation fee per tourism night refers to the effectiveness, the number of tourism nights per one bed of accommodation establishments means the occupancy rate of capacity and the number of accommodation establishments could provide reasonable estimation about the importance of tourism in the microregions.

The current typology was based on the relative values of microregions compared to the national average in the case of the specific income from accommodation fee and its three components. According to the definition of competitiveness, the microregions with above average income per capita level were regarded as advantageous and those with below average were classified as disadvantageous. If a given microregion represented an above average level by three of the income components then it was labelled with complex competitiveness. In the case of two or two components with above average, multi-factored advantage and single-factored advantage was pointed out. The concept of disadvantageousness was created by similar analogy.

The map of border microregions represents the categories separated by the static analysis of competitiveness (Figure 2). Six microregions could be regarded as competitive in Hungarian comparison by the tourism, however five microregions from this group are located in the western part of Hungary – the Gyula microregion constituted an exception. Complex touristic advantage could not be found in any of the border microregions, multi-factored advantage appeared in four cases and single-factored advantage was detected in two cases. Most of the microregions (43 microregions) were disadvantageous in this respect, complex disadvantage could be found in 29 microregions and multi-factored disadvantage was observed in 14 ones (Bujdosó et al., 2011).

Dynamic analysis was carried out in order to investigate the changes between 2000 and 2008. (This definition was applied by József Nemes Nagy in his study – Nemes Nagy, J. 2004) However, this kind of analysis cannot be regarded as dynamic in its terms, as only the data for the first and the last years are compared to each other instead of the investigation of the whole period.

It is clearly seen that the situation of the border microregions is not so unfavourable at all by the dynamic investigation, as it was discovered by the static analysis previously (Figure 3). More than half of the microregions represented better dynamism than the national average and these 27 microregions can be regarded as competitive. Complex advantage appeared in the case of five microregions and moreover only one is located in the western part of Hungary. Multi-factored advantage could be detected in 21 microregions and single-factored in one. Five microregions out of the 22 units with disadvantage were characterised by single-factored, 12 by multi-factored and five by complex disadvantage in the touristic competitiveness (Bujdosó et al., 2011).

### The competitiveness of the Hungarian microregions and the spatial distribution of the touristic supports[1]

1 This paper was supported by the János Bólyai Research Scholarship of the Hungarian Academy of Sciences.

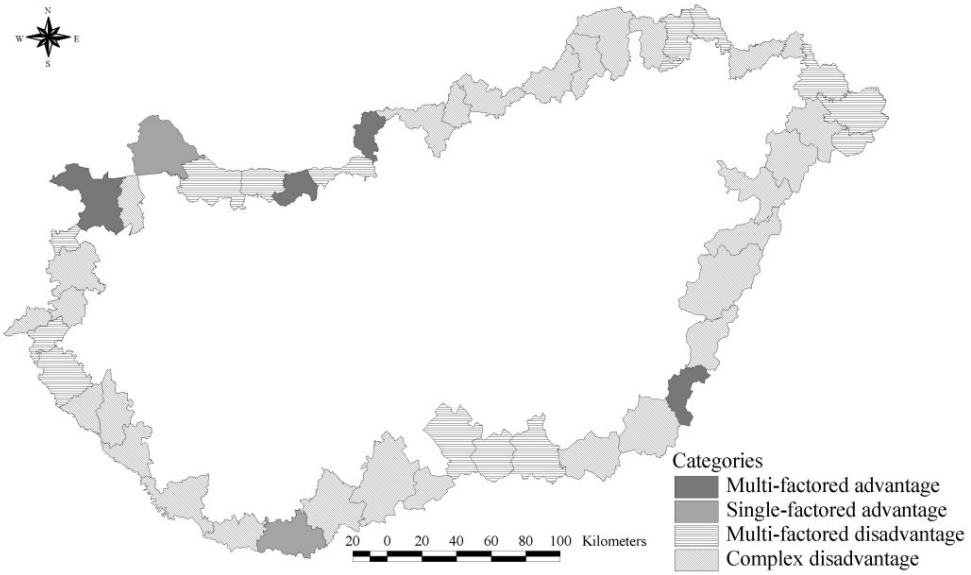


**Figure 2 –** Types of tourism competitiveness in the border microregions of Hungary, 2008.

(Source: edited by Bujdosó et. al. 2011)

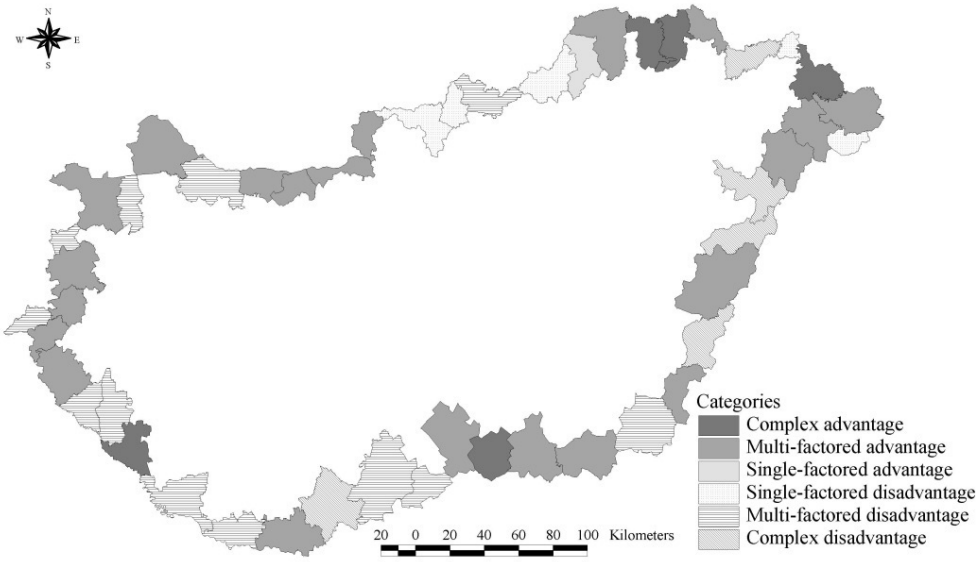


**Figure 3 –** Types of tourism competitiveness in the border microregions of Hungary, 2000-2008.

(Source: edited by Bujdosó et. al. 2011)

Correlation calculation was the second phase of the current investigation between the competitiveness of the microregions and the distribution of the touristic supports. The aim of this survey was to discover the statistical relationship between these indicators. First of all, the distribution of the touristic supports was completed. The database of this analysis was based on the EMIR that contained the accepted touristic development supports of the NFT (National Development Plan), the ÚMFT (New Hungary National Development Plan) and the ÚSZT (New Széchenyi Development Plan).[2]

The Gyula microregion – and the touristic developments of the town Gyula – received the largest amount of development support (more than one billion HUF) from the NFT between 2004 and 2006. More than half billion HUF financial support was approved in the case of the microregions of Csurgó, Tata, Baja, Szob, Siklós and Esztergom. 12 border microregions did not receive any support during the period of NFT.

Eleven microregions were missing on the list of the supported microregions during the ÚMFT and the highest total amount of developments reached 7 billion HUF. Each of the Szegedi, the Sopron-Fertődi, the Siklósi, the Edelényi, the Nyírbátori and the Mohácsi microregions received more than 2 billion HUF supports.

2 These development plans fitted to the principles of the European supports in different financial periods (the New Széchenyi Development Plan launched by the Orbán Government in 2011).

The summarized supports per capita values of the two periods are illustrated by Figure 4. Polarized distribution of the resources can be seen that tends to represent significant spatial differences. Four border microregions had no kind of supports from these applications. Most of them are backward along the eastern border of Hungary (the Csengeri, the Hajdúhadházi and the Sarkadi microregions). However, at the same time, the largest values of support can be found in this part of the borderland (the Sátoraljaújhelyi, the Edelényi, the Gyulai, the Mórahalomi and the Szobi microregions).

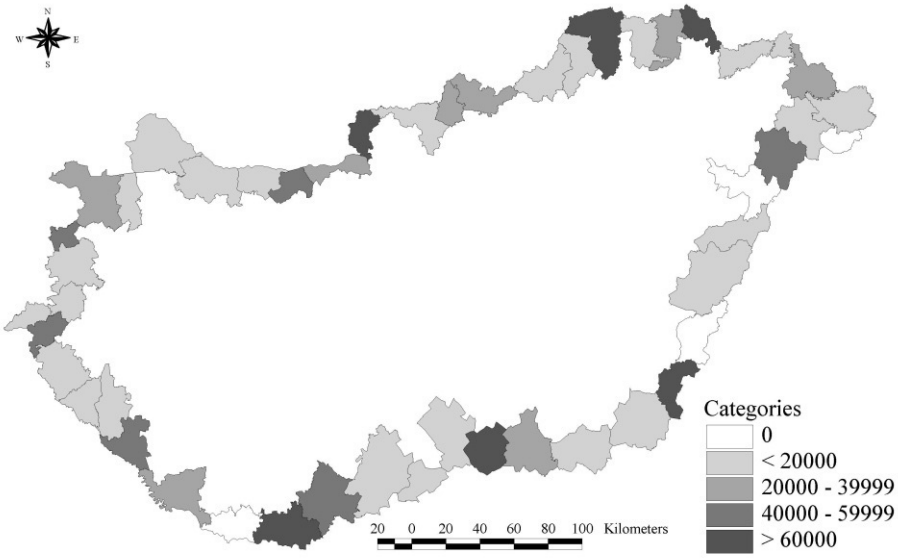


**Figure 4 –** The total value of the touristic supports per capita in the border microregions of Hungary, 2011, HUF

(Source: edited by the authors)

The correlation calculation might discover the relationship between the types of competitiveness and the approved supports. The high level of correlation coefficient would primarily represent the dominance of developed microregions that might strengthen their touristic profile even more. This fact might mean the further increase of the significant level of inequalities. Weak-medium – and significant – correlation was calculated in the case of the touristic supports per capita and the categories of competitiveness (correlation coefficient = -0.42). The other indicators – in spite of the calculations – did not show significant coefficients.

Table 1 – Border microregions categorized by the supports per capita and the types of static competitiveness (Source: edited by the authors)

| categories | multi-factored advantage | single-factored advantage | multi-factored disadvantage | complex disadvantage |
|---|---|---|---|---|
| without support | – | – | Csengeri | Hajdúhadházi, Sarkadi, Sellyei |
| <20,000 | – | Mosonmagyaróvári | Fehérgyarmati, Győri, Kiskunhalasi, Komáromi, Lenti | Bajai, Balassagyarmati, Berettyóújfalui, Bodrogközi, Derecske-Létavértesi, Encsi, Kapuvár-Beledi, Kazincbarcikai, Körmendi, Letenyei, Makói, Mátészalkai, Mezőkovácsházai, Nagykanizsai, Ózdi, Szentgotthárdi, Szombathelyi, Záhonyi |
| 20,000-40,000 | Sopron-Fertődi | – | Abaúj-Hegyközi, Esztergomi, Szegedi, Vásárosnaményi | Barcsi, Salgótarjáni, Szécsényi |
| 40,000-60,000 | Tatai | – | Kőszegi, Őriszentpéteri | Csurgói, Mohácsi, Nyírbátori |
| >600,000 | Gyulai, Szobi | Siklósi | Mórahalomi, Sátoraljaújhelyi | Edelényi |

The results of the correlation calculation between the total values of supports in each period separately tended to represent a weakening but negative correlation. The correlation between the approved supports during the NFT and the static categories of competitiveness showed a medium strong relationship (-0.53) that was weaker during the era of ÚMFT (-0.33). More competitive microregions received higher amount of development supports by these calculations, however the correlation became weaker between the two periods.

The investigated microregions were categorized by the approved supports per capita and by the competitiveness besides the correlation-calculation. The unfavourable situation of the microregions with complex static disadvantage can be clearly seen in Table 1 as only one microregion – the Edelényi microregion – was in the highest category of supports. And what is more, this outstanding value appeared as a result of only one large-scale investment, namely the reconstruction of the L'Huillier-Coburg castle in Edelény (the total budget of the project amounted to 2.2 billion HUF) (http://edelenyikastelysziget.hu). 18 microregions with complex disadvantage belonged to the lowest category of per capita supports, while three similar microregions did not receive any kind of financial support. All of the four microregions with multi-factored static advantage received at least 20,000 HUF support per capita.

Table 2 – Border microregions categorized by the supports per capita and the types of dynamic competitiveness (Source: edited by the authors)

| catego-ries | complex advantage | multi-factored advantage | single-factored advantage | single-factored disadvantage | multi-factored disadvantage | complex disadvantage |
|---|---|---|---|---|---|---|
| without support | – | – | – | Csengeri | Sellyei | Hajdúhadházi, Sarkadi |
| <20,000 | Encsi | Berettyóúj-falui, Fehérgyar-mati, Kiskunhalasi, Komáromi, Körmendi, Makói, Mátészalkai, Mosonmagyaróvári, Lenti, Szombathelyi | Kazincbarci-kai | Balassagyarmati, Ózdi, Záhonyi | Bácsalmási, Bajai, Győri, Kapuvár-Beledi, Letenyei, Mezőkovácsházai, Nagykanizsai, Szentgotthárdi | Bodrogközi, Derecske-Létavértesi, |
| 20,000-40,000 | Abaúj-Hegyközi, Vásárosnamé-nyi | Esztergomi, Sopron-Fertődi, Szegedi | – | Szécsényi | Barcsi, Salgótarjáni | – |
| 40,000-60,000 | Csurgói | Nyírbátori, Őriszentpéte-ri, Tatai | – | – | Kőszegi | Mohácsi |
| >600,000 | Mórahalomi | Edelényi, Gyulai, Sátoraljaújhelyi, Siklósi, Szobi | – | – | – | – |

The dynamical categories of competitiveness provide a more mosaic-like pattern than the previous categorisation (Table 2). Microregions with competitive advantage received financial support for their touristic developments. It is an interesting fact that most of the microregions with complex or multi-factored advantage were in a backward situation. The touristic dynamism of these microregions arose from the low level of basic data in 2000 however the developments of the touristic indicators by 2008 were not significant which is reflected by their moderate positions of static competitiveness. On the other hand, the tourism of these peripheral territories can be characterised by the higher participation of inland tourists that are less sensitive to the economic recession than the foreign visitors. Tourism is highly responsive to the changes of the macroeconomic environment because the effect of the narrowing income of individuals and companies can be especially destructive on the touristic expenditures. The result of this negative process mainly affected the territories with developed tourism (e.g. by the absence of orders from the business sector) (ÁSZ 2010).

The current investigation contained the analysis of spatial inequalities of the approved supports by the Hoover-index. The Hoover-index is one of the most frequently applied methods to measure inequalities (for the detailed description of the method see Nemes Nagy, J. 2005)

In order to calculate the index, the distribution of the summarised accepted supports (and personal incomes[3]) in the microregions and the population number were compared to each other. The results of the Hoover-index was extremely high – $h_{NFT}$=57.7 % – for the period of NFT. This value decreased in the next – ÚMFT – period ($h_{ÚMFT}$=45.3 %), however it is many times higher than the income inequality among the border microregions in 2010 ($h_{INCOME}$=11.6). The results proved the more unequal and concentrated distribution of touristic supports, however the process of convergence tends to appear in time.

3 The concept of income means the gross incomes confessed in the personal income tax which has been published by the PM-APEH (Ministry of Finance – Hungarian Tax and Financial Control Administration) (National Tax and Customs Administration from 2010) and the HCSO (Hungarian Central Statistical Office) since 1988.

These results are not in contradiction with the objectives of the Regional Operational Programme, but the flowing of the largest touristic supports into the most developed and competitive touristic microregions fulfilled only one part of the previously aimed principles. This process was more spectacular in the case of the NFT (this statement was confirmed by the study of the National Audit Office) (ÁSZ 2010).

**Conclusions**

The border microregions of Hungary can be regarded as heterogeneous from a touristic aspect and can be characterised by significant spatial disparities. These specific features were represented quantitatively by our static competitive analysis for 49 microregions and the characteristics became more detailed by the dynamic analysis for the period between 2000 and 2008. The macroeconomic impacts affecting the touristic trends (terror attack in 2001, financial cutting downs in 2006, and the global economic recession from 2008) had negative influence mainly on the territories with developed tourism. Underdeveloped areas are primarily orientated towards the inland tourism and this fact with the low level of basic data resulted in larger dynamism in their case.

The investigations carried out represented the concentration of supports during the NFT period with the flowing of resources into the microregions with developed tourism. This process caused pushing one of the operational objectives – the development of areas with underdeveloped tourism – into the background and the increase of inequalities. The homogeneity of supports did not decrease effectively by the end of the investigated ÚMFT period, but the concentration of resources preferring the developed areas partly melted. However, it has not still accomplished the determined objectives of the regional operational programme. The resource-absorption capacity of the underdeveloped microregions is much lower than in the developed ones and most part of the backward territories primarily concentrate on the development of basic physical and human infrastructure (Radics, Zs. – Pénzes, J. – Molnár, E. 2011).

Calls for applications and the system of supports should be smaller scaled, should take the local characteristics into consideration and should compensate for the lack of local additional financial resources in order to effectively decrease the significant disparities among the microregions.

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UDK 338.48(498)

**Andrean Ungureanu**

# THE IMPORTANCE OF PRAHOVA'S TOURISM IN SOUTH-MUNTENIA DEVELOPMENT REGION

**Abstract**

Importance of tourism is enormous both Prahova county economy and for development of the region to which it belongs. As the region's economic development components, tourism industry are taking into an active role which is played by the increasingly manifest. The tourism resources within the region and scientific planning & development should be the only way to achieve sustainable development of tourism industry within the region and also an effective protection to promote this region's harmonious development.

**Key words:** tourism, touristic accomodation, arrivals and overnights stays.

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## Introduction

South-Muntenia region is located in the South Eastern of Romania bordering the north with Central region, to the East with region South East, to the south with Bulgaria, the limit being the date of natural border Danube river, and to the West with South-Western region. This region in the south of the Danube river gives it an opportunity to carry out communications with the 8 riparian countries, and through the Danube - Black Sea channel country outputs to the Black Sea and access to Constanta port - main access gate sea of the country.

There is in the center region, but not part of this country's capital city, Bucharest, part of the region Bucharest-Ilfov which constitute the social infrastructure and institutional a real advantage and for the South-Muntenia region.

Region South Muntenia is composed of 7 counties, Argeş, Călăraşi, Dâmboviţa, Ialomiţa, Giurgiu, Prahova şi Teleorman county.

## Base analysis technical materials and of the supply of services

At the end of 2014, the South-Muntenia region, in the field of tourism were in operation of tourist accommodation units 656 (accounting for 10.7 % of the statistical observation).

Table 1 – Establishments of touristic reception in South-Muntenia region – 2014 (number of units)

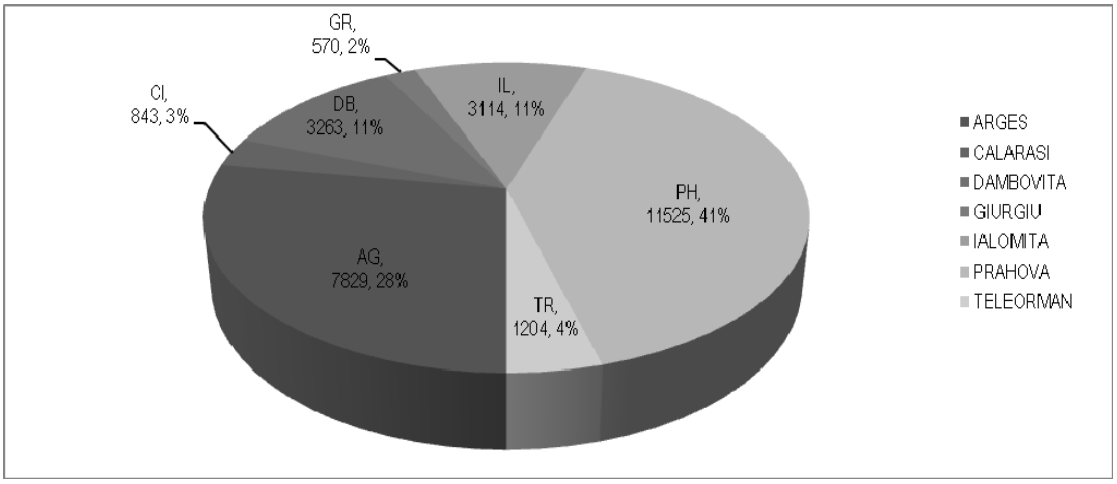
| Region/County | South region | AG | CL | DB | GR | IL | PH | TR* |
|---|---|---|---|---|---|---|---|---|
| Hotels | 155 | 40 | 3 | 18 | 4 | 10 | 74 | 6 |
| Hotels apartament/Motels | 42 | 3 | 5 | 3 | 6 | 6 | 18 | 1 |
| Hostels | 24 | 4 | 1 | 8 | 1 | 2 | 7 | 1 |
| Touristic inns | 2 | - | - | 1 | - | - | - | 1 |
| Touristic villas | 59 | 12 | - | 3 | - | 2 | 40 | 2 |
| Touristic chalets | 29 | 11 | - | 5 | - | 1 | 12 | |
| Bungalows | 3 | 1 | 1 | - | - | - | 1 | - |
| Campings and houselet – type units | 3 | - | - | 1 | - | 1 | 1 | - |
| Touristic halting places | 1 | 1 | - | - | - | - | - | - |
| Touristic houselets | 4 | 2 | 1 | - | - | 1 | - | - |
| School and pre-school camps | 9 | 3 | - | - | - | 1 | 3 | 2 |
| Touristic boarding houses | 149 | 34 | 3 | 10 | 1 | - | 99 | 2 |
| Agro-touristic boarding houses | 174 | 112 | 3 | 24 | - | 2 | 31 | 2 |
| Ships accommodation spaces | 2 | - | - | - | - | - | - | 2 |
| Totals | 656 | 223 | 17 | 73 | 12 | 26 | 286 | 19 |

Source: author`s own processing based on: https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR101C

(* AG=Argeş, CL=Călăraşi, DB=Dâmboviţa, IL=Ialomiţa, GR=Giurgiu, PH=Prahova, TR=Teleorman)

By analysing statistical data of the of South Muntenia region you can see that in Prahova county are developed most units of accommodation, the number of 286. Second position is occupied by Arges county with 223 units of accommodation. Together, the two counties, Prahova and Arges is 77,6 % per employee percent of the total number of units of accommodation in the region of development south Muntenia.

Numeric difference between these two counties and the remaining counties is obvious, so that, although Dambovita county is 3rd in number of structures, the 73 units do not compete with those in the Prahova county and Arges. Top 3 of the region is followed by greater distance of counties of Ialomita (26 units), Teleorman (19 units), Calarasi (17 units), and Giurgiu (12 units).

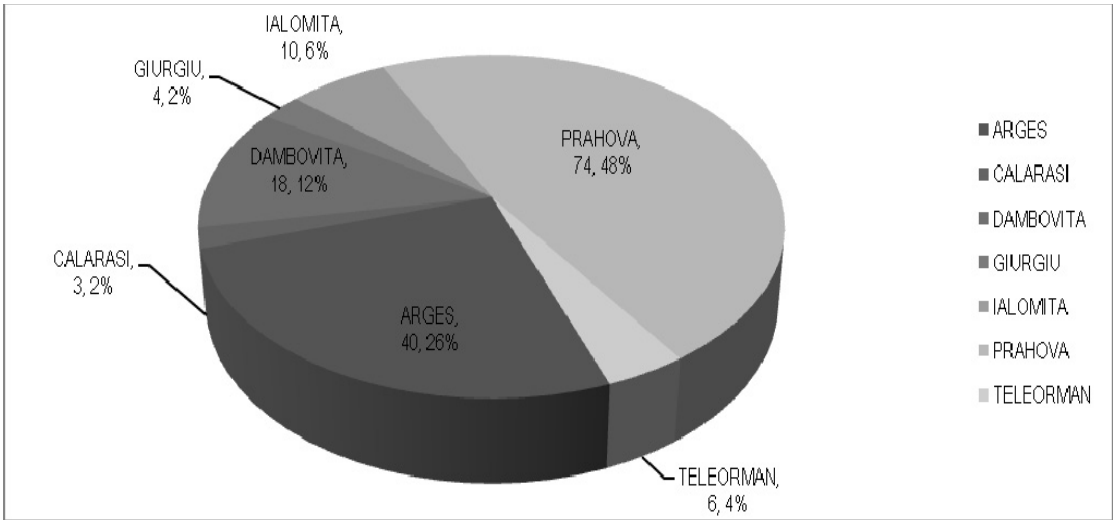



**Graph 1 –** The share accomodations units in South-Muntenia region – 2014

Source: author`s own processing based on: https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR101C

From the analysis carried out we can specify that in the year 2014, in the region of development South Muntenia, within the framework of the accommodation establishments share million Euro are meant for boarding and lodging is owned by tourism and rural tourism by approximately 49,23 % as regards hotels, they are located in number, to position per second.

Within the region shall be separated in Prahova county with the 74 units of type accommodation hotel (48 % of the total 290 million euros in the region), mainly in mountain resorts on the Prahova Valley.




**Graph 2 –** The share of hotels on counties in South-Muntenia region – 2014

Source: author`s own processing based on: https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR101C

As regards the capacity of the accommodation availability at the level of 2014, no more than seven questions have hotels -50,83 % -, followed by tourism and rural tourism million Euro are meant for boarding and lodging -21,05 % -, a result of accessibility (lower prices) and development of rural tourism. The share held by large hotels may be explained by the fact that these units have a profile complex, greater convenience and provides a wider range of services, for a superior quality. By analysing the ability of existing ac-

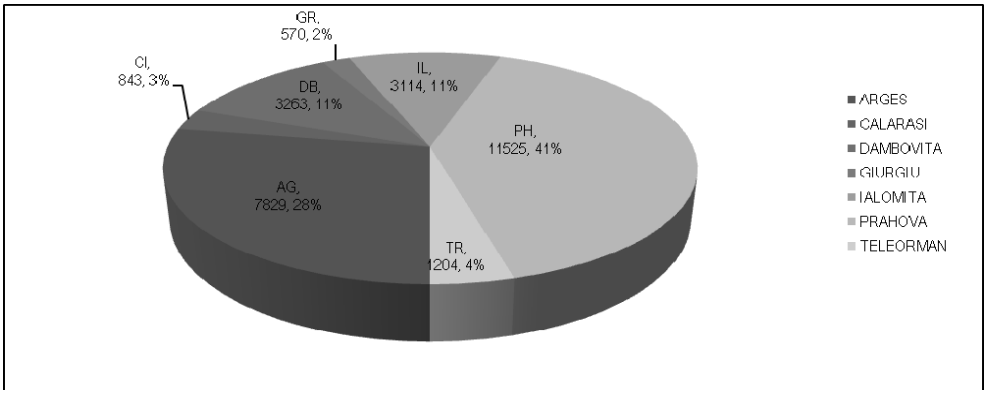
commodation at county level it can be seen that counties of Prahova (41 %) and Arges (28 % ), represent the strong points for this region of development in relation to this indicator. The seats immediately neighboring counties are Dambovita (11 %) and Ialomita (11 %).

In conclusion, the offer of accommodation available in South Muntenia region must be diversified, must be carried out further investment in this field on the basis of a strategy drawn up on a regional basis. Tourism supply must be conceived in such a way as to respond as much as possible existing tourism demand on the market.

Table 2 – Tourist accommodation capacity in operation in South-Muntenia region – 2014 (places)

| Region/County | South region | AG | CI | DB | GR | IL | PH | TR |
|---|---|---|---|---|---|---|---|---|
| Hotels | 14411 | 3046 | 406 | 1499 | 286 | 2210 | 6414 | 550 |
| Hotels apartament/Motels | 1615 | 38 | 233 | 70 | 264 | 208 | 770 | 32 |
| Hostels | 1377 | 272 | 84 | 474 | 20 | 42 | 467 | 18 |
| Touristic inns | 42 | - | - | 22 | - | - | - | 20 |
| Touristic villas | 1382 | 359 | - | 92 | - | 50 | 855 | 26 |
| Touristic chalets | 1240 | 673 | - | 181 | - | 14 | 372 | - |
| Bungalows | 36 | 20 | 8 | - | - | - | 8 | - |
| Campings and houselet – type units | 614 | - | - | 244 | - | 342 | 28 | - |
| Touristic halting places | 30 | 30 | - | - | - | - | - | - |
| Touristic houselets | 183 | 52 | 26 | - | - | 105 | - | - |
| School and pre-school camps | 1114 | 720 | - | - | - | 90 | 154 | 150 |
| Touristic boarding houses | 2919 | 682 | 46 | 202 | - | 27 | 1924 | 38 |
| Agro-touristic boarding houses | 3049 | 1937 | 40 | 479 | - | 26 | 533 | 34 |
| Ships accommodation spaces | 336 | - | - | - | - | - | - | 336 |
| Totals | 28348 | 7829 | 843 | 3263 | 570 | 3114 | 11525 | 1204 |

Source: author`s own processing based on: https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR102D




**Graph 3 –** The share accomodation capacity on counties in South-Muntenia region - 2014 (places)

Source: author`s own processing based on: https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR102D

**Tourist traffic analysis in the South-Muntenia region**

Number of arrivals of tourists recorded in the South Muntenia region, in tourist facilities, in the year 2014, was 679 360, with May 107 603 higher than in 2003.

Under the aspect of weighting of tourists in the region arrival South Muntenia region in total arrivals, It should be noted that this decline in known records. If, at the level of 2003 we record a weight of 11.3 percent, 10 years later these decreases by 2.7 percentage points, reaching minimum value of the analysis period (2003-2013), of only 8.6 %. World economic crisis and fluctuations in exchange rates have affected arrivals from South Muntenia region. Number arrival lounges foreign tourists in structures of receipt with tourist accommodation functions have been directly affected by economic crisis. Although in the year 2008, were arriving in this region 103,387 foreign tourists (maximum value recorded), a year later, 2009 shall be recorded 78,816 arrivals (minimum value recorded), the figure which is equivalent to a drop of 13,77 % as compared to the previous year. Starting from the year 2010 we are witnessing a continuous increase in the number of foreign arrivals in the region South Muntenia region, but the figures recorded are not able to reach the values before the trigger economic crisis. Most arrivals have been recorded for tour-

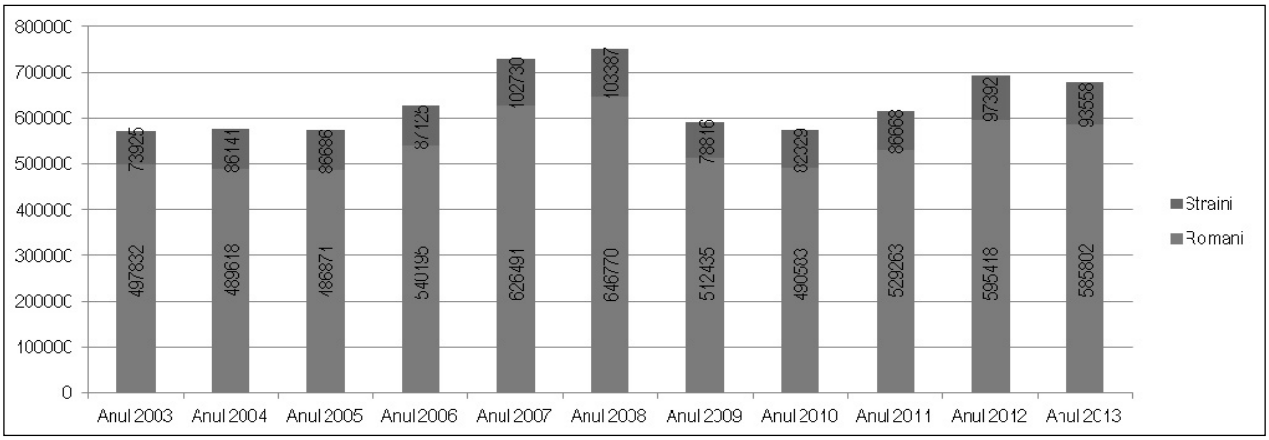
ists resident in Romania (86,22 % of the total), the difference (13.78 in %) belonging to foreign tourists. The types of units of tourist accommodation, most arrivals have been recorded in hotels (64,76 %), at the opposite pole namely bungalourile with only 0.08 percent of the total.


**Graph 4 –** Arrivals of tourists in the establishments of tourists with tourists' accommodation functions in South-Muntenia region, (2003–2013)

Source: author`s own processing based on: https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR102D

World economic crisis and fluctuations in exchange rates have affected arrivals from and powerful South Muntenia region. Number arrival lounges foreign tourists in structures of receipt with tourist accommodation functions have been directly affected by economic crisis. Although in the year 2008, were arriving in this region 103,387 foreign tourists (maximum value recorded), a year later, 09 shall be recorded 78,816 arrivals (minimum value recorded), the figure which is equivalent to a drop of 13,77 % in 1991 compared to the previous year.

Starting from the year 2010 we are witnessing a continuous increase in the number of foreign arrivals in the region South Muntenia region, but the figures recorded are not able to reach the values before the trigger economic crisis.

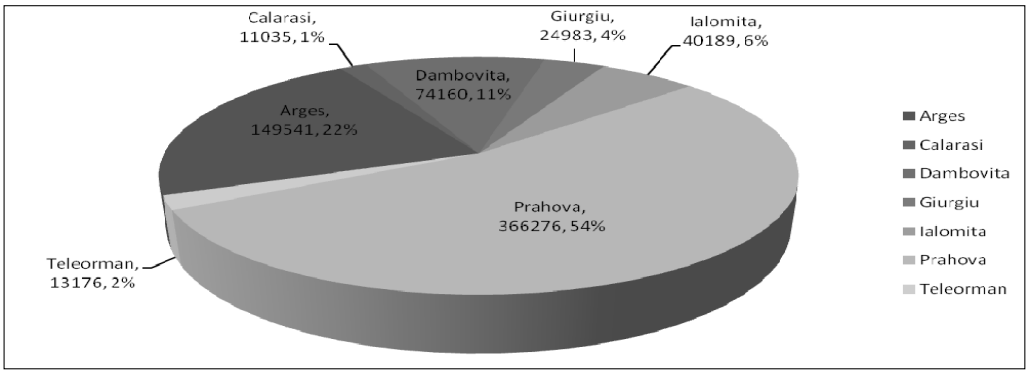



**Graph 5 –** Arrivals of romanian and foreign tourists in the establishments of tourists with tourists' accommodation functions in South-Muntenia region, (2003–2013)

Source: author`s own processing based on :https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR103B

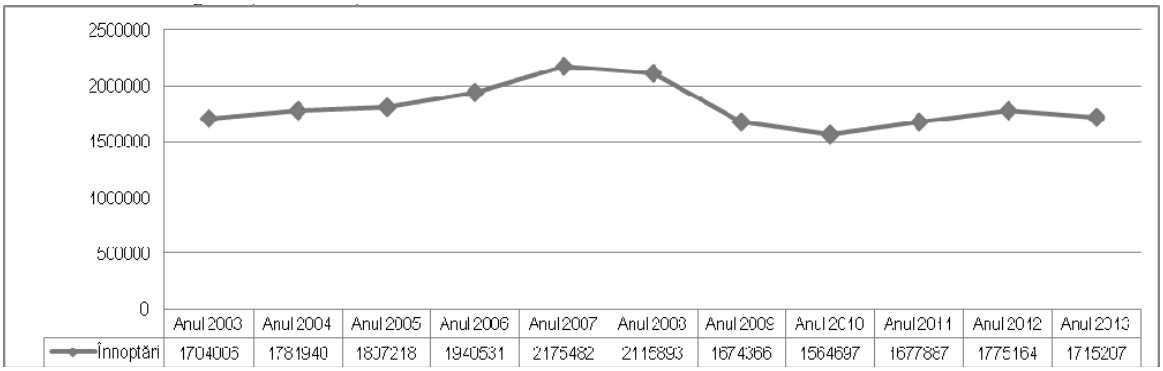
From the point of view of the weighting of the counties, have been preferred units in Prahova county (recording 53.9 % of the total arrival lounges) and Arges (22 %)- according to Graph 6-, and from the point of view of comfort, were preferred units of 2 and 3 stars. It should be noted that the two counties of the region groups 77,6 % per employee percent of the total number of units of accommodation in the region and at the same time attract 75.9 percent of the total arrival lounges. The figures supplied by the National Institute of economic statistics, very clearly indicates that in the region foreign tourists have preferred all in Prahova county, with approximately 51.9 %

Number of overnights stays structures in tourist accommodation was in the year 2013 the 1715207 overnights stays, of which 1453731 of Romanian tourists (collected 84.8 %) and 261476 innoptari of foreign tourists (15.2 %). As regards tourism in accommodation spaces in the region South Muntenia region -the number tourists accommodated and innoptarile developed ecotourism during the period 2003–2008 and significant decrease between 2008 and 2013.




**Graph 6 –** The share arrivals on counties in South-Muntenia region, (2003–2013)

Source: author`s own processing based on :https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR104B




**Graph 7 –** Overnight stays in the establishments of tourists 'reception with tourists' accommodation function in South-Muntenia region, (2003–2013)

Source: author`s own processing based on :https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR104B

Average length of stay have been reduced from 2.98 days in 2003 to 2.52 days in 2013 and the trend to share holidays and of the pursuit of itinerant tourism. That arrivals from tourists in accommodation spaces and their innoptarile decreased represents a negative factor in the light of the prospective dezoltarii tourism. For this trend to reverse it is necessary to create vacation packages more attractive, increase quality of services rendered to modernize infrastructure (access routes in the area – maybe even build the Comarnic-Braşov freeway), but also the technical and material of tourism. With a view to assessing downward trend, for the period immediately following (2014–2019), the number of arrivals of tourists in the South Muntenia region, it has used the criterion based on changing average:

Table 3 – The calculation algorithm needed to adjust the number of the arrivals through the average growth method ($y_t$), 2003–2013

| Year | $y_t$ | Δt/t-1 | t-1 | $Y_t = y_1 + (t-1)\Delta$ | $(y_t–Y_t)^2$ |
|---|---|---|---|---|---|
| 2003 | 571757 | 0 | 0 | 0 | 0 |
| 2004 | 575759 | 4002 | 1 | 582517.3 | 45674618.89 |
| 2005 | 573557 | -2202 | 2 | 593277.6 | 388902064.4 |
| 2006 | 627320 | 53763 | 3 | 604037.9 | 542056180.4 |
| 2007 | 729221 | 101901 | 4 | 614798.2 | 13092577160 |
| 2008 | 750157 | 20936 | 5 | 625558.5 | 15524786202 |
| 2009 | 591251 | -158906 | 6 | 636318.8 | 2031106597 |
| 2010 | 572912 | -18339 | 7 | 647079.1 | 5500758722 |
| 2011 | 615931 | 43019 | 8 | 657839.4 | 1756313991 |
| 2012 | 692810 | 76879 | 9 | 668599.7 | 586138626.1 |
| 2013 | 679360 | -13450 | 10 | 679360 | 0 |
| Total | 6980035 | | | | 39468314162 |

Sursa: Calcule proprii ale autorului pe baza: https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR101B

| | |
|---|---|
| Δ | 10760.3 |
| ȳ | 634548.6364 |
| Standard deviation σ | 59900.15493 |
| Coefficient of variation υ | 9.44 % |

Source: author`s own processing based on :https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR104B

The value of 9,44 % of the coefficient of variation suggests that the arithmetic mean (ȳ) of the series historical record – structures to receive tourist accommodation with functions, has a high degree of representativeness.

Table 4 – Previsions of the number of arrivals in South Muntenia region, 2014–2019

| Year | t-1 | $Y_t = y_1 + (t-1)\Delta$ |
|---|---|---|
| 2014 | 11 | 690120.30 |
| 2015 | 12 | 700880.60 |
| 2016 | 13 | 711640.90 |
| 2017 | 14 | 722401.20 |
| 2018 | 15 | 733161.50 |
| 2019 | 16 | 743921.80 |

Source: author`s own processing based on :https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR104B

In accordance with during preview of the table below, for the period 2014–2019, there has been an upward trend, the dynamics of number of arrivals in the region March . Trend resulting presents a favorable situation for tourism region analyzed as a whole and is due to both investments, as well as realization of the potential in the Prahova county tourism.

**Conclusion**

In conclusion, tourism demand is concentrated, at present, very powerful in Prahova county from a great distance in Arges county. This not only affects the revenue streams in the region, but also the results of the use of existing infrastructure and personnel. After the analysis, it might be asserted that the offer of accommodation available South Muntenia region should be spiced up by investments in the field. These investments should be drawn up taking account of existing tourism demand in the profile area and local. Another aspect that must be highlighted when strategies are drawn up at the central level is decreasing negative effects of sezonalitatii for supply of accommodation.

Tourism South Muntenia region is made up of indigenous people's holidays. In the case of region analyzed international tourism movement is represented in the greater part of European tourists of provenance. Most of them foreign tourists come from the Republic of Moldova and Bulgaria. Taking into account the situation in Romanian tourism industry in general, hotel capacities, adaptation to needs can be hallowed by upgrading hotels built before 1980s, and by the construction of new hotels, mainly those of great comfort. Modernization should be such as to ensure alignment with international standards and resolve, in a timely manner, this is only possible through participation foreign capital.

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UDK 330.567.22(1-924)

**Monika Utzig**

# EXPENDITURES ON RESTAURANTS AND HOTELS OF EUROPEAN HOUSEHOLDS

**Summary:** Household's expenditures on restaurants and hotels increases when their incomes increases because spending on restaurants and hotels can be treated as luxury good. In the paper the structure of household's spending on hotels and restaurants and its share in total consumption expenditure in European countries are presented. European countries were analysed by the share and structure of expenditures on hotels and restaurants taking into consideration household income per capita.

**Key words:** expenditures on restaurants and hotels, households, European countries.

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**Household is defined as a group of persons living together and sharing their incomes and expenditures. Main factor affecting household's consumption expenditure is household's disposable income [Keynes 1936]. Macroeconomic approach is interested on the decision: how much of income to consume today and how much to save for the future. According to Engel analysis, the structure of consumption expenditures changes with disposable income [Utzig 2011]. As income rises, the proportion of income spent on food falls, despite of actual expenditure on food rising.**

When household income increases expenditures on luxury goods are going up. Spending on hotels and restaurants can be seen as such a luxury goods.

Expenditure on restaurants and hotels are determined by factor similar to expenditures on holidays. They are as follows: personal restriction (income and family size), socio-demographic characteristics (age, education and size of the city of residence) and psychographic characteristics (opinion on taking holidays) [Nicolau, Mas 2007].

In this paper differences between European countries are analysed, so only per capita income is treated as a factor determining expenditure on hotels and restaurants level and percentage. It seems to be proper approach according to the fact that within the same country households of highest income are characterised by highest share of expenditures on hotels and restaurants, clothing and footwear and recreation and culture [Radziukiewicz 2012].

The percentage of expenditures on hotels and restaurants in total consumption expenditure of households differs between countries (table 1.).

Table 1– Percentage of expenditures on hotels and restaurants in total consumption expenditure of households in the span of 2005–2013.

| GEO/TIME | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|
| Belgium | 5.8 | 5.7 | 5.7 | 5.7 | 5.7 | 5.6 | 5.7 | 5.7 | 5.7 |
| Bulgaria | 7.5 | 8.0 | 6.1 | 5.6 | 5.8 | 6.0 | 6.6 | 7.3 | 7.1 |
| Czech Republic | 7.7 | 8.1 | 8.3 | 7.6 | 8.1 | 8.1 | 8.5 | 8.1 | 8.2 |
| Denmark | 5.3 | 5.4 | 5.6 | 5.6 | 5.5 | 5.4 | 5.5 | 5.6 | 5.7 |
| Germany | 5.0 | 5.1 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.3 | 5.3 |
| Estonia | 7.0 | 6.9 | 6.9 | 6.6 | 6.1 | 6.5 | 7.1 | 7.2 | 7.3 |
| Ireland | 13.4 | 12.9 | 12.7 | 12.8 | 13.3 | 13.3 | 13.2 | 13.4 | 14.3 |
| Greece | 12.1 | 12.1 | 12.1 | 12.1 | 12.1 | 12.1 | 11.8 | 12.8 | 12.9 |
| Spain | 17.5 | 17.2 | 16.8 | 16.3 | 15.9 | 15.6 | 15.7 | 15.3 | 15.4 |
| France | 6.5 | 6.6 | 6.6 | 6.5 | 6.4 | 6.4 | 6.5 | 6.5 | 6.5 |
| Italy | 8.8 | 8.9 | 9.1 | 9.1 | 9.4 | 9.4 | 9.4 | 9.5 | 9.5 |
| Cyprus | 15.3 | 15.2 | 14.9 | 13.7 | 14.0 | 13.8 | 14.7 | 15.6 | 16.4 |
| Latvia | 7.2 | 8.4 | 6.2 | 5.7 | 4.9 | 5.1 | 5.0 | 5.0 | 5.0 |
| Lithuania | 2.8 | 2.7 | 2.7 | 2.9 | 2.8 | 2.6 | 2.8 | 2.9 | 2.9 |
| Luxembourg | 7.3 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.0 | 7.1 |
| Hungary | 6.2 | 6.2 | 6.4 | 6.5 | 6.7 | 6.9 | 6.7 | 6.8 | 7.0 |

*Continued*

| GEO/TIME | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|
| Malta | 15.0 | 15.1 | 15.5 | 13.7 | 15.0 | 16.2 | 16.5 | 17.2 | 18.1 |
| Netherlands | : | : | : | : | : | 7.0 | 7.1 | 7.2 | 7.3 |
| Austria | 11.3 | 11.5 | 11.6 | 11.7 | 11.9 | 11.9 | 12.0 | 12.3 | 12.6 |
| Poland | 2.9 | 2.9 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.9 | 3.0 |
| Portugal | 10.6 | 10.6 | 10.6 | 10.2 | 10.6 | 10.6 | 10.6 | 11.0 | 10.4 |
| Romania | 5.2 | 5.5 | 5.0 | 5.2 | 5.9 | 3.3 | 3.4 | 3.3 | : |
| Slovenia | 6.5 | 6.4 | 6.8 | 7.1 | 6.9 | 6.6 | 6.4 | 6.8 | 6.9 |
| Slovakia | 6.7 | 7.3 | 6.8 | 6.5 | 5.8 | 5.7 | 5.5 | 5.4 | 5.4 |
| Finland | 6.7 | 6.7 | 6.7 | 6.6 | 6.4 | 6.3 | 6.3 | 6.3 | 6.3 |
| Sweden | 5.0 | 5.1 | 5.2 | 5.5 | 5.5 | 5.5 | 5.7 | 5.7 | 5.9 |
| United Kingdom | 10.1 | 9.9 | 9.8 | 9.6 | 9.2 | 9.2 | 9.6 | 9.6 | 9.6 |
| Iceland | 7.8 | 8.0 | 8.1 | 7.8 | 7.8 | 8.1 | 8.2 | 8.4 | 9.3 |
| Norway | 5.4 | 5.7 | 5.8 | 6.0 | 5.8 | 5.7 | 5.8 | 5.9 | 6.0 |
| Former Yugoslav Republic of Macedonia | 3.7 | 4.2 | 3.8 | 3.1 | 3.4 | 3.3 | 3.4 | 3.2 | 3.4 |
| Serbia | 2.8 | 2.8 | 2.7 | 2.5 | 2.3 | 2.3 | 2.3 | 2.2 | 2.2 |

Source: Eurostat database.

The highest share of household expenditures on hotels and restaurants in total household consumption expenditures is observed in Malta (between 15.0 and 18.1 percent), Cyprus (between 13.7 and 16.4 percent), Ireland (between 12.7 and 14.3 percent), Greece (between 11.8 and 12.9 percent) and Portugal (between 10.2 and 11.0 percent).

The lowest share of household expenditures on hotels and restaurants in total household consumption expenditures is observed in Serbia (between 2.2 and 2.8 percent), Lithuania (between 2.6 and 2.9 percent), Poland (between 2.8 and 3.0 percent), Albania (between 2.8 and 3.4 percent) and Former Yugoslav Republic of Macedonia (between 3.1 and 4.2 percent).

The percentage of expenditures on hotels and restaurants in total household consumption expenditures in particular countries is rather stable in time.

Household expenditure on hotels and restaurants is a sum of expenditure on catering services and accommodation services. Table 2. shows percentage of household expenditure on catering services in expenditure on hotels and restaurants in the span of 2005-2013.

Table 2 – Percentage of household expenditure on catering services in expenditure on hotels and restaurants.

| GEO/TIME | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|
| Belgium | 91.4 | 89.5 | 89.5 | 87.7 | 87.7 | 87.5 | 87.7 | 87.7 | 87.7 |
| Bulgaria | 65.3 | 61.3 | 60.7 | 58.9 | 62.1 | 63.3 | 72.7 | 74.0 | 71.8 |
| Czech Republic | 75.3 | 75.3 | 73.5 | 75.0 | 74.1 | 72.8 | 71.8 | 72.8 | 73.2 |
| Denmark | 83.0 | 83.3 | 82.1 | 83.9 | 83.6 | 83.3 | 85.5 | 85.7 | 86.0 |
| Germany | 84.0 | 82.4 | 84.6 | 82.7 | 82.7 | 82.7 | 82.7 | 81.1 | 83.0 |
| Estonia | 74.3 | 75.4 | 76.8 | 74.2 | 75.4 | 73.8 | 73.2 | 73.6 | 78.1 |
| Ireland | 90.3 | 89.9 | 89.8 | 88.3 | 88.7 | 89.5 | 89.4 | 88.8 | 88.8 |
| Greece | 85.1 | 85.1 | 85.1 | 85.1 | 85.1 | 85.1 | 83.9 | 82.8 | 82.2 |
| Spain | 89.7 | 90.1 | 90.5 | 90.8 | 91.8 | 92.3 | 92.4 | 92.2 | 92.2 |
| France | 80.0 | 78.8 | 78.8 | 76.9 | 79.7 | 79.7 | 78.5 | 78.5 | 78.5 |
| Italy | 75.0 | 75.3 | 74.7 | 75.8 | 76.6 | 76.6 | 75.5 | 75.8 | 76.8 |
| Cyprus | 52.3 | 53.3 | 54.4 | 54.7 | 58.6 | 58.7 | 55.8 | 55.1 | 52.4 |
| Latvia | 86.1 | 84.5 | 79.0 | 78.9 | 79.6 | 80.4 | 80.0 | 78.0 | 80.0 |
| Lithuania | 71.4 | 74.1 | 74.1 | 82.8 | 82.1 | 76.9 | 82.1 | 79.3 | 75.9 |
| Luxembourg | 75.3 | 74.6 | 73.2 | 74.6 | 76.1 | 74.6 | 74.6 | 75.7 | 76.1 |
| Hungary | 79.0 | 77.4 | 78.1 | 80.0 | 82.1 | 82.6 | 82.1 | 82.4 | 80.0 |
| Malta | 62.0 | 62.9 | 63.9 | 59.9 | 66.0 | 66.0 | 64.8 | 64.5 | 64.6 |

*Continued*

| GEO/TIME | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|
| Netherlands | : | : | : | : | : | 81.4 | 81.7 | 81.9 | 80.8 |
| Austria | 79.6 | 80.0 | 80.2 | 78.6 | 79.0 | 79.0 | 78.3 | 78.0 | 77.0 |
| Poland | 79.3 | 82.8 | 82.1 | 78.6 | 78.6 | 75.0 | 71.4 | 72.4 | 70.0 |
| Portugal | 80.2 | 81.1 | 81.1 | 80.4 | 80.2 | 80.2 | 79.2 | 76.4 | 79.8 |
| Romania | 53.8 | 54.5 | 58.0 | 55.8 | 57.6 | 42.4 | 41.2 | 42.4 | : |
| Slovenia | 75.4 | 78.1 | 75.0 | 76.1 | 75.4 | 77.3 | 75.0 | 75.0 | 75.4 |
| Slovakia | 91.0 | 90.4 | 89.7 | 89.2 | 89.7 | 89.5 | 89.1 | 88.9 | 88.9 |
| Finland | 92.5 | 92.5 | 92.5 | 92.4 | 92.2 | 92.1 | 93.7 | 93.7 | 93.7 |
| Sweden | 88.0 | 88.2 | 86.5 | 85.5 | 87.3 | 87.3 | 87.7 | 87.7 | 86.4 |
| United Kingdom | 86.1 | 85.9 | 84.7 | 85.4 | 85.9 | 85.9 | 83.3 | 83.3 | 83.3 |
| Iceland | 83.3 | 85.0 | 84.0 | 83.3 | 79.5 | 82.7 | 78.0 | 76.2 | 75.3 |
| Norway | : | : | : | : | : | : | : | : | : |
| Former Yugoslav Republic of Macedonia | 91.9 | 85.7 | 92.1 | 96.8 | 91.2 | 93.9 | 97.1 | 96.9 | 97.1 |
| Serbia | 75.0 | 71.4 | 74.1 | 72.0 | 73.9 | 73.9 | 73.9 | 77.3 | 77.3 |

Source: Own calculation based on Eurostat database.

In the majority of European countries household expenditures on catering services are higher than expenditures on accommodation services. The highest share of catering services occurred in Former Yugoslav Republic of Macedonia, Finland and Spain (above 90 percent), in Slovakia, Ireland, Belgium, Sweden, United Kingdom, Greece, Denmark, Germany and Netherlands (between 80 and 90 percent).

Further analysis (figure 1.) shows that there is no significant relationship between percentage of expenditure on hotels and restaurants and catering services in total consumption expenditures and the level of GDP per capita in European countries.

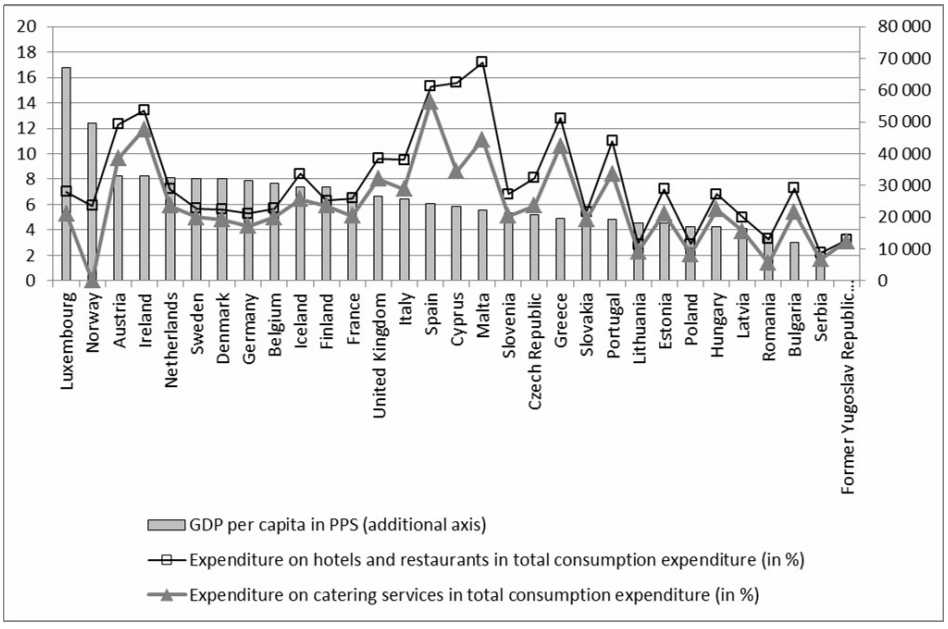


**Figure 1 –** GDP per capita in PPS and share of expenditure on hotel and restaurants and catering services in total household consumption expenditure in 2012.

Source: Eurostat database.

Higher percentage of expenditure on hotels and restaurants and catering services weren't observed neither in the countries of the highest GDP per capita nor in the countries of the lowest GDP per capita. It can be maintained that differences between countries in their preferences about household expenditure on hotels and restaurants are so crucial, that dissimilarity of income is becoming insignificant.

**Conclusions**

European countries differ in the percentage of expenditure on hotels and restaurants in household

total consumption expenditure as well as in the expenditure on hotels and restaurants structure. Differences in preferences between countries are much more important that differences in GDP per capita. High percentage of expenditure on hotels and restaurants in total household consumption expenditure are observed as well in high GDP countries as medium and low GDP countries.

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UDK 332.1(492)

**Jan Willem, Bart Goedknegt, Wim Heijman**

# REGIONAL ECONOMIC IMPACT OF AN EVENT: THE CASE OF THE ROTTERDAM MARATHON

**Abstract**

The Rotterdam Marathon is an annual sports event in Rotterdam. This biggest one-day event in the Netherlands attracted around 925,000 visitors in 2014. This paper aims at evaluating its regional economic impact by way of input output analysis in terms of number of jobs.

**Key words:** Rotterdam Marathon, Event evaluation, Regional development, Input-output analysis.

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## 1. Introduction

The Rotterdam Marathon is an annual event in the city centre of Rotterdam. In this paper we aim at the computation of its economic impact on the municipality of Rotterdam in terms of employment.

Events can impact the local economy. Economic impact is described by Crompton (2006) as: «The net economic change in the incomes of host residents that results from spending attributed to tourist» (Crompton, 2006: p. 67). Events are frequently used as booster for regional economic development (Heijman et al, 2011).

The most important reason to host an event is to create a touristic attraction. The importance of evaluating the impact of events may be necessary because «producing an economic impact study to demonstrate that economic returns to a community will exceed its investment has become almost a requirement for event organizers». (Crompton, 1995: p. 33)

Foreign investments, exports, increasing infrastructure are some examples of economic returns to a community which are generated by an event. Moreover many tourists arrive at the airport or train station, they stay in hotels, they use public transportation, and they enjoy the city by night.

The annual Rotterdam Marathon is a major event with close to a million visitors. Economic assessments of events like this is important for decision making by the local authorities. In this case we aim to evaluate the impact of the Marathon on the economy of the Municipality of Rotterdam.

## 2. Method

Input-output analysis (IOA)is the basis for this analysis. With the use of IOA, interdependencies between different sectors within an economy can be measured. The input-output table is an important feature of the IOA. It shows the intra – and intersector flows of goods and services between sectors of an economy given a certain time frame (Leontief, 1986).

A regional IOA is required to evaluate the impact of the event. Because, for Rotterdam, no regional IOT existed the national (Dutch) IOT needed to be regionalized. This was done with the help of location quotients.Two methods were applied: the simple location quotient (SLQ) and the location quotient of Flegg and Webber (1997, 2000): (FLQ). The SLQ has been said to overestimate the impact on the regional economy (Flegget al.,2013), where the FLQ is the method resulting in the lowest regional impact (Steijart, 2013). By computing the impact according to these location quotients we get a good impression of the possible variation in outcomes.

After the construction of the regional IOT the analysis could be carried out with the help of the Leontief Equation (Heijman et al.,2010):

$$\Delta X = (I - A)^{-1}\Delta F.$$

**X** Output Vector; **A** Matrix of technical coefficients; **F** Final Demand Vector; **I** identity matrix.

## 3. Data

The most recent Dutch national input-output table of 2012 was used. The five most relevant sectors were chosen in which the impact of the event seemed most likely. A sixth ‘sector’ (sector F) was created to combine all other sectors of the input-output table.

The questionnaire is an important aspect of the research to obtain the primary data (Adler et al. 2011; Kramer et al., 2014). During the marathon in 2014, interviews were conducted amongst the spectators along the course. The survey was carried out at random places in the city centre of Rotterdam by two different persons. Also, the questionnaire was put online to receive larger feedback and therefore to collect more data.

Respondents were asked to answer four questions with regard to their visit of the Rotterdam Marathon. The questionnaire was available in both Dutch and English, since the Rotterdam Marathon has an

international character. The results gave an overview of the expenses made by the visitors as well as of their reason of visiting. All respondents were anonymous, voluntarily and aware of the research project. The sectors in which the visitors spent money are the following: A. Wholesale and retail, B. Transportation and storage, C. Lodging, meals and drinks, D. Information and communication, E. Culture, Sports and recreation.

The questionnaires were collected on the day of the marathon, namely April 13th, 2014. The total of 77 questionnaires was conducted amongst the visitors of the Rotterdam Marathon (58 during Rotterdam Marathon, and 19 on the online questionnaire). In total the 77 responded spending of €1,348.00.The average spending was € 17.51 per person. Most of the money was spent in the wholesale and retail sector (see Figure 1).

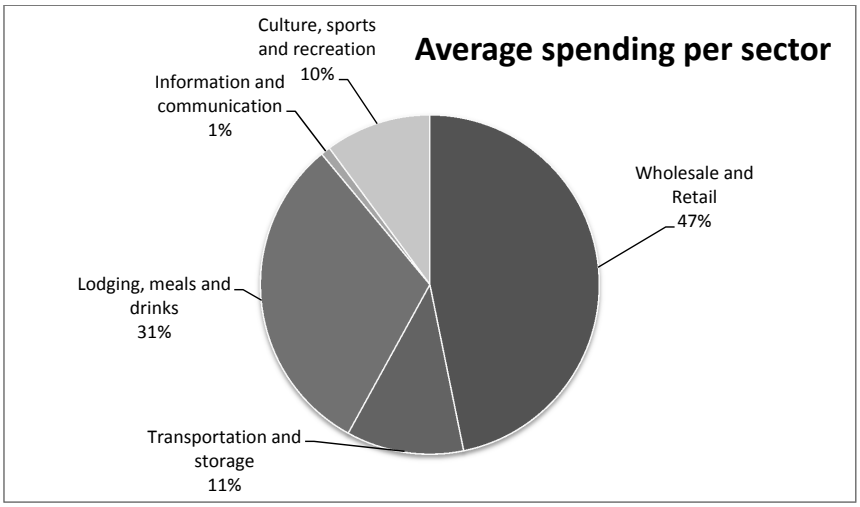


**Figure 1 –** Average spending per sector by visitors of Rotterdam Marathon

**5. Results**

On estimation 925,000 visitors were in Rotterdam for the marathon of 2014. On the basis of the survey and the total number of visitors the following results for the extra spending during the marathon (ΔF) were found (Table 1).

With the help of the Leontief equation, the change in outputs could be computed. In order to compute the extra number of jobs the changes in outputs needed to be divided by the annual national output per employee per sector, which resulted in the additional number of jobs (Table 2).

Table 1 – Spending by visitors per sector

| | ΔF |
|---|---|
| A | €7,575,750 |
| B | €1,813,000 |
| C | €5,013,500 |
| D | €148,000 |
| E | €1,637,250 |

Table 2 – Additional jobs using FLQ and SLQ.

| | Additional jobs with FLQ | Additional jobs with SLQ |
|---|---|---|
| A | 94.91 | 96.36 |
| B | 14.98 | 15.41 |
| C | 94.89 | 96.37 |
| D | 4.62 | 5.87 |
| E | 40.61 | 42.85 |
| Total | 249.81 ≈ 250 | 256.86 ≈ 257 |

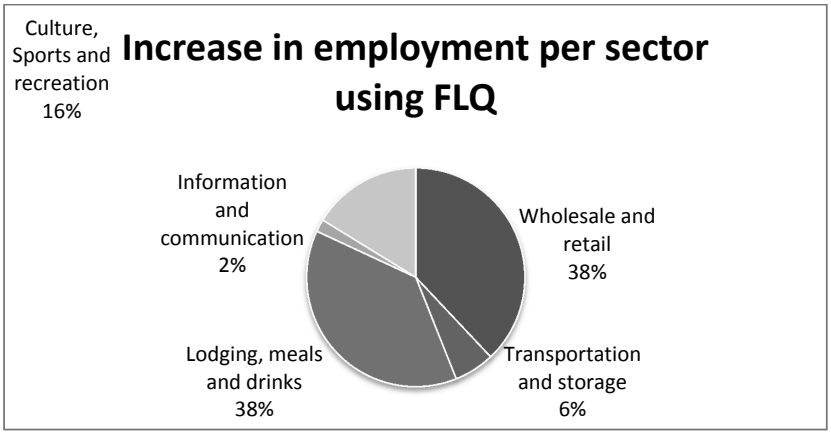


**Figure 2 –** Increase in employment with FLQ.

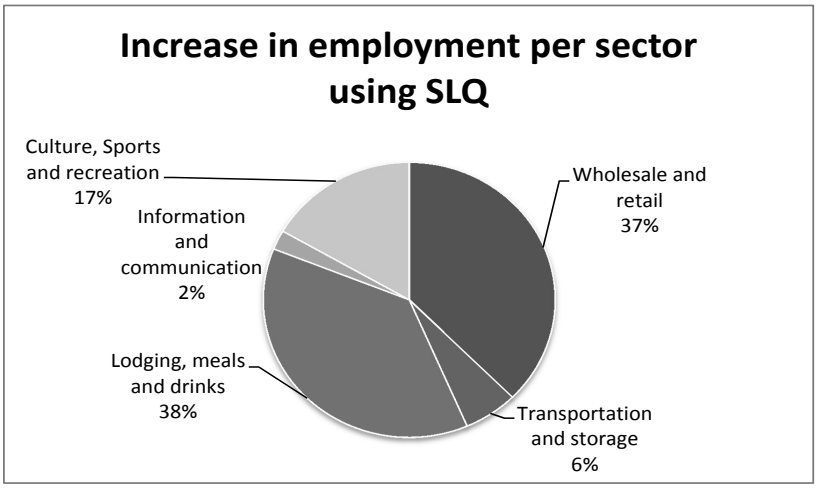


**Figure 3 –** Increase in employment per sector withSLQ.

**6. Conclusion**

This aim of this paper was to evaluate the economic impact of an event, the Rotterdam Marathon, in terms of number of jobs.

To evaluate the economic impact an input-output analysis was applied. To regionalize the national input-output table, two different types of location quotients were used: *SLQ* and *FLQ*.

The results show that there is an impact in terms of additional employment and that there is a relatively small difference in outcomes between the two location quotients. The impact of the event was an estimated 257 extra jobs according to *SLQ* and 250 according to *FLQ*.

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**Marian Zaharia, Aniela Bălăcescu**

# EVOLUTIONS OF FOREIGN TOURISTS' OVERNIGHT STAYS IN ROMANIA. AN ECONOMETRIC APPROACH

**Abstract**

This paper presents a comparative study of overnight stays of foreign tourists in the establishments of touristic reception with functions of touristic accommodation in macroregions and development regions of Romania with the purpose of identifying their influence factors. In order to achieve the objectives of this research has been carried out a quantitative analysis based on the data provided by data bases of EU (Eurostat) and of National Institute for Statistics from Romania. Was identified eight econometric models (one for each development region), of which one AR, two ARIMA, and five linear regression models. They provide a description and a good image of the evolution of the number of foreign tourists in Romania, and their trends in 2006-2013 period.

**Key words:** tourism, overnights stays, sustainable regional development, Romania, ARIMA models.

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## Introduction

The tourism potential represents a source of opportunities for entrepreneurs at development of business and as support for the development of sustainable regional. Tourism has a major role in economy with benefice effects which include infrastructure modernization, easy access to medical services, education, generally to increase the standard of living.

The relationship between tourism, community life and regional development needs to be analyzed in terms of three functions: a function of impact (economic, social, environmental), a function of stability and a function of convergence - combined into a matrix model because tourism also needs other industries, because this branch cannot develop in isolation from other components of the economy of any destinations (Pascariu, Ţigănaşu, 2014).

The tourism may become an important component of economy capable of important mutations in the territorial profile, determining a social-economic growth of some poor regions. A good project of lasting development, included in a program of regional development, supposes investments less expensive if the integration is harmoniously organized. (Scutariu, 2008)

The overall objective of regional development policy, namely reducing existing regional imbalances can be also achieved by stimulating areas with tourism potential which tourism could be a way to increase living standards and progress of the people. Development of tourism by exploiting the existing potential may lead to the development of disadvantaged areas through employment of a part of the unoccupied population in those areas. Tourism can boost internal development of a certain areas and thus reduce regional imbalances. Thus, tourism is proving to be a viable alternative for the development of different areas. (Babucea, Răbonţu, 2013)

The demand for products and services in tourism depends on a number of factors, and depends on consumer behavior. In general, some factors are related to time, income, prices etc. Revenues of tourists can influence the tourism demand. Prices are also important elements considered by tourists when they decide to spend their income, for example, within a trip.(Surugiu, et. al, 2009).

Other factors of influence of tourism industry, which refer to by other authors (Hong, 2008) are: a) infrastructure investments (including: accessibility design, lodgings, transportation systems and specific food) of a destination, which are the most important functional bases, also known as advanced factors (in Porter's terminology); b) strategic planning to market ties (including: building tourism linkages with related characteristics and creative activities) of a destination, that are the secondary functional institutional investments which can attract potential tourists, also known as internationalization of domestic demand (in Porter's case); c) growth and development (including: economic growth and public security system development), which constitute the socio-economic status of a destination and that can robustly support tourism related facilitates (infrastructure) and tourism safety network systems; d) operational performance effectiveness (including: one-stop tourism package services) of a destination is the primary motivation of tourists; the operational performance effectiveness of a destination mainly depends on the sophistication of domestic tourists and their high level of demanding expectations in comparison to other destinations; thus, according to the Porter analysis, sophisticated domestic tourists not only provide incentive to review tourism related services delivering high performance but also serve as an early warning indicator of mainstream tendencies in worldwide tourism services or the need for transition or change.

According to some Romanian authors (Coroş, Negruşa, 2014) one of the problems of Romanian tourism is linked to the fact that the service providers struggle to survive, as the continuously decreasing occupancy rate generates a genuine crisis among them.

Other Romanian authors (Pociovălişteanu, Niculescu, 2010) emphasize the importance that ecocultural tourism could have in the sustainable development of some less developed communities and which could easily develop through the transformation of its cultural and natural heritage in an open-air museum, where the locals should be the main actors and beneficiaries.

A quantitative indicator of tourist traffic measurement is overnight stays in the establishments of touristic reception with functions of touristic accommodation, obtained from the statistics information provided from hotel units is calculated as a sum of products between the number of tourists and tourist activity duration in days. The evolution of the number of foreign tourists' overnight in Romanian accommodation structures is subject to our research and the main objective was to identify econometric models (Gogonea R.M., Zaharia M., 2008) to describe their evolutions.

**Discussion**

Analyzing the evolution of the number of overnight stays in establishments of tourist reception with functions of accommodation in the four macroregions of Romania (table 1) shows that the year 2009 was a negative year for the tourism industry both in terms of residents and foreign, the total number of them decreased over the year 2008 with a percentage ranging from -15.2 % in Macro_2 and 18.9 % in Macro_3.

In the case of foreign tourists, the impact of the economic crisis on their number of overnight stays was much higher. Thus, the number of foreign overnight stays decreased between -15.3 % in Macro_4 and -26.3 % in Macro_2.

Table 1 – Evolution of number of overnight stays in the establishments of touristic reception with functions of touristic accommodation in macroregions of Romania

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|
| Total overnight stays | 18991695 | 20593349 | 20725981 | 17325410 | 16051135 | 17979439 | 19166122 | 19362671 |
| Macro_1 | 5293303 | 5726924 | 5688970 | 4763887 | 4603924 | 5396189 | 5788778 | 6151314 |
| Macro_2 | 6452775 | 6986112 | 6994408 | 5933278 | 5106911 | 5606675 | 6125899 | 5800968 |
| Macro_3 | 3598509 | 4199965 | 4328785 | 3510145 | 3545094 | 3807513 | 4013610 | 4088219 |
| Macro_4 | 3647108 | 3680348 | 3713818 | 3118100 | 2795206 | 3169062 | 3237835 | 3322170 |
| Foreigners Total | 3242105 | 3586439 | 3359244 | 2667666 | 2766581 | 3066882 | 3297433 | 3477854 |
| Macro_1 | 844709 | 975559 | 855861 | 666455 | 741088 | 829689 | 905018 | 980387 |
| Macro_2 | 801101 | 757110 | 594952 | 438735 | 396354 | 440904 | 488902 | 535807 |
| Macro_3 | 1196487 | 1450334 | 1546506 | 1256032 | 1338920 | 1446149 | 1510935 | 1575010 |
| Macro_4 | 399808 | 403436 | 361925 | 306444 | 290219 | 350140 | 392578 | 386650 |

Source: http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=TUR105D

In the period under review, with the exception of Macro_3, have been recorded adverse developments in the number of overnight stays of foreign tourists in two and even three consecutive years. For example, Macro_2 the decline began in 2008 (a decrease by 21.4 % compared to 2007) and lasted until 2010. Although starting from 2011 the number of overnight stays in the region begins to increase, in 2013 reached level represented 66.88 % of the maximum level recorded in 2008. A somewhat similar situation was registered in Macro_4, with the difference that the value recorded in 2013 is only 4.2 % lower than the maximum recorded in 2007 (403,436 overnight stays).

The only of macroregions, where in 2013, the number of overnight stays of foreign tourists was higher than the maximum values recorded in the period under review were Maro_1 (by 0.5 % higher than the maximum recorded in 2007) and Macro_3 (with 1.85 % higher than the maximum recorded in 2008). Note that in Macro_3 the decreases with an 18.8 % of the number of overnight stays of foreign tourists was determined by significantly decreases of the activities most companies with direct impact on business tourism development in Bucharest-Ilfov region. After 2009 the number of overnight stays foreign tourists begin to grow, the highest percentage (8.0 %) was recorded in 2011.

On the other hand, the share of overnight stays resident tourists in the total overnight stays recorded in the four macro-regions are very small. In Romania they are between 15.40 % in 2009 and 17.96 % in 2013. On the macroregions, the highest values are recorded in Macro_3, ranging between 33.25 % in 2006 and 38.53 % in 2013 and lowest values were recorded in the Macro_2, ranging from 12.84 % in 2006 and 7.39 % in 2009.

Deepening the analysis to the eight development regions of Romania (Figure 1) the evolutions of the number of overnight stays of foreign tourists can be grouped into three groups.

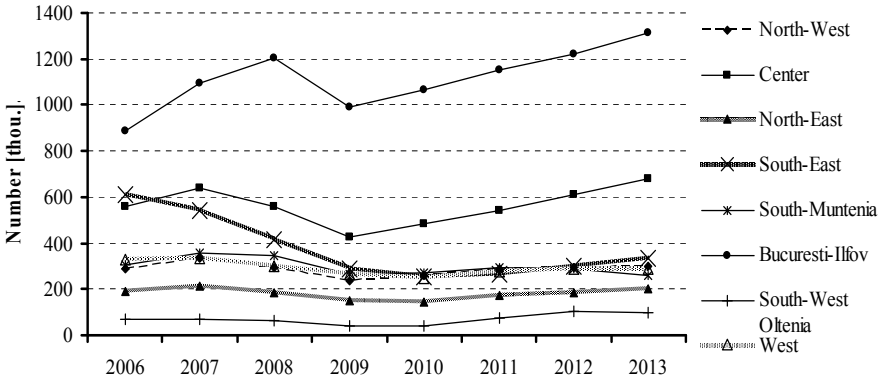


**Figure 1 –** Evolution of the number of overnight stays of foreign tourists in establishments of tourist reception with functions of accommodation regions

Source: own after construction after http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang =ro&ind=TUR105D

A first group is formed by Bucharest-Ilfov Region and Center, though at different levels have evolved relatively similar in 2006–2013. Although its have suffered a sharp decline in 2009 (-17.5 % in Bucharest-Ilfov and -23.7 % in the region Center), after 2009 recorded significant increases away from the values recorded in other regions. The share of these regions in total overnight stays overnight stays of foreign tourists is significantly higher than in other regions. In 2013 the share of overnight stays of foreign tourists in total was 37.77 % in the Bucharest-Ilfov and 19.57 % in the Center; the total share of the other six regions of development is only 42.66 %.

A second group is composed of developing regions whose share of the overnight stays of foreign tourists was included in 2013 between 7.5 % and 10 %. These regions are North-West (8.62 %), the South-East (9.68 %), the South-Muntenia (7.52 %) and West (8.22 %). Among these, South-Muntenia region has the particularity that, unlike the others, in 2012 and 2013 the number of overnight stays foreign tourists decreased by 5044 and respectively by 25938 overnight stays compared to previous years. In the third group are developing regions which the share of overnight stays of foreign tourists in the total overnight stays at the level of Romania in 2013 was under 7.5 %, and respectively North-East (5.72 %) and South-West Oltenia (2.9 %).

Although the relative values in these regions recorded annual growth rates and large drop, due to the very low absolute values and their influence on the level of Romania is very small. Moreover, the share of overnight stays of foreign tourists in South-West Oltenia region ranging from 1.45 % in 2010 and 2.90 % registered in 2013.

**Results**

Characterization of developments of the number of overnight stays of foreign tourists in tourist structures with functions of accommodation in Romania's development regions and determining the evolutionary trends in the short term, while those economic and political developments are not significant changes can be made using econometric models of the form:

$$Y = F(t) + \varepsilon \quad (1)$$

In the model (1), $Y \in R^9$ is the vector of results values, represented in our case by the number of overnight stays of foreign citizens registered in Romania, as well as those of the 8 developed regions, *F(t)* is the vector of functions corresponding to those 9 results variables, and $\varepsilon \in R^9$ is the vector of residual variables which modeling the influence of all factors on Y with except factorial variable *t*.

Considering that in 2009 outbreak of the economic crisis caused a discontinuity in evolutions of the number of overnight stays of foreign tourists, discontinuity which is unlikely to occur in the next period and under the assumption of political and economic stability in the immediate period were tested models which analyzed indicator describing trends in the period 2009–2013. In these circumstances, taking account of the small number of data for the function F (t) can be used only for linear form:

$$f(t) = a_0 + a_1 \cdot t \quad (2)$$

Results of testing of the validity of models (1) specific by each region using the ANOVA and F-test for the 95 % confidence level $\alpha$=0,05 are shown in table 2. To statistical significance testing of the model coefficients ($a_0$ and $a_1$) was used test t (student). IT support was used SPSS (Laber, 2008) and Excel (Oprea C., Zaharia M., 2011)

From the analysis of other available models whose main elements are presented in Table 2, Bucharest-Ilfov development region has the highest contribution to the increase of the total number of overnight stays of foreign tourists in Romania. Thus, if economic and political conditions are maintained, then the region will bring an annual increase between 75040 and 85150 overnights of foreign tourists.

Also, a significant contribution to the increase in the number of overnight stays could bring the Center development region. This, together with the Bucharest-Ilfov can help annual increase of overnight stays of foreign tourists, at the country level, with between 132,060 and 154,860 overnight stays, exceeding by about 17 % the contribution of all the other six regions in total overnight stays of the foreign in Romania.

Table 2 – Results of test of model (1) for the evolution of overnight stays of foreign tourists in the tourist accommodation functions in developing regions in Romania

| Dependent variable | Coefficients | | Sig.t | 95 % confidence interval | | R Square | Sig. F |
|---|---|---|---|---|---|---|---|
| | | | | lower | upper | | |
| TOTAL | a0 | 2409.91 | 0.000 | 2235.89 | 2583.93 | 0.991 | 0.001 |
| | a1 | 215.12 | 0.001 | 162.65 | 267.59 | | |
| NW | a0 | 227.60 | 0.000 | 197.08 | 258.125 | 0.909 | 0.012 |
| | a1 | 15.81 | 0.012 | 6.61 | 25.02 | | |
| CENTER | a0 | 359.38 | 0.000 | 338.33 | 380.43 | 0.997 | 0.000 |
| | a1 | 63.36 | 0.000 | 57.02 | 69.71 | | |
| NE | a0 | 128.89 | 0.001 | 101.64 | 156.15 | 0.908 | 0.012 |
| | a1 | 14.08 | 0.012 | 5.86 | 22.29 | | |
| SE | - | - | - | - | - | 0.481 | 0.194 |
| S Muntenia | - | - | - | - | - | 0.011 | 0.869 |
| Bucuresti Ilfov | a0 | 909.54 | 0.000 | 892.78 | 926.31 | 0.999 | 0.000 |
| | a1 | 80.10 | 0.000 | 75.04 | 85.15 | | |
| SW Oltenia | a0 | 18.08 | 0.262 | -23.69 | 59.87 | 0.872 | 0.02 |
| | a1 | 17.91 | 0.020 | 5.31 | 30.51 | | |
| West | - | - | - | - | - | 0.659 | 0.095 |

Source: own processing using SPSS.

The contributions of North-East regions, and of North-West region, in the total number of overnight stays are modest and range between 5860 and 22290 overnight stays in North-East region, and between 6610 and 25020 overnight stays in the North-West region. In total, the share of contribution of these two regions to annual increase of foreign tourists in Romania is about 14 %.

In the case of the development regions South-East, South-Muntenia and West, for analysis of the overnight number of foreign tourists and possibly making short-term predictions, the model type (2) can not be used. Under these conditions were used monthly series in the number of overnight stays in the three regions developed in the 2010-2014.

After removing the seasonal component, time series obtained are shown in Figure 2. Comparing evolutions in the foreign tourists number of overnight stays of three development regions during 2006–2013, shown in Figure 1, with evolutions recorded during 2014, presented in Figure 2, there is maintaining increase trends in the number of overnight stays in the West and South-East regions, and decrease in the South-Muntenia region.

To check the stationarity of seasonal adjusted series was used Dick-Fuller Unit Root Augmented Test. For the series of the regions South-East and West, the level of significance ($\alpha$=0,05), Null Hypothesis was accepted (Has a unit root). To obtain the stationary processes, they have been distinguished, the resulting series being W_SA_D and SE_SA_D.

In the case of SM_SA series, the results obtained from the application of the test are shown in Table 3. Given that $\text{Prob.} = 0.0166 < 0.05$ . Null hypothesis is rejected and therefore SE_SM series can further use without any changes.

After testing several models for the evolutions of each time series, for South-East region (SE) was chosen the model ARIMA(1,1,1) for the West (W) was chosen the model ARIMA(2, 1.3) and for South-Muntenia region (SM) was chosen the model AR(1). The characteristics of the models are shown in Table 4.

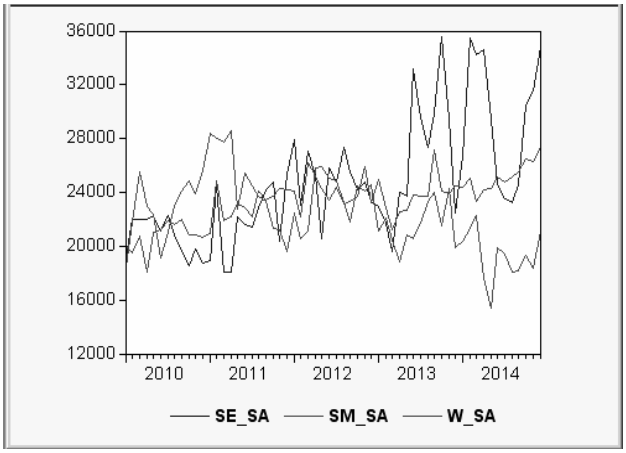


**Figure 2 –** Final seasonal adjusted series of foreign tourists' overnights for the development regions South-East (SE_SA), South Muntenia (SM_SA) and West (W_SA). Source: own processing using EViews.

Table 3 – The test results for SM_SA series

| Null Hypothesis: SM_SA has a unit root | | | | |
|---|---|---|---|---|
| | | | t-Statistic | Prob. |
| Augmented Dickey-Fuller test statistic | | | -3.357335 | 0.0166 |
| Test critical values: | 1 % level | | -3.546099 | |
| | 5 % level | | -2.911730 | |
| | 10 % level | | -2.593551 | |

Source: own processing using EViews

The values of t-statistic and the corresponding probabilities ( $\text{Prob.} < 0.05$ ) lead to rejection of the null hypothesis and acceptation of the alternative hypothesis and therefore all the coefficients of the three models are statistically significant.

These conclusions are underlined by the results of residual tests. Hypothesis testing regarding the normal distribution of residues was performed using the Jarque-Bera (JB) test. The corresponding probability values ( $\mathrm{Prob.} < 0.05$ ) means that the residues have normal distributions.

Table 4 Characteristics of ARIMA(1,1,1), ARIMA (2,1,3), AR (1) models and their test results.

| Region | Variable | Coefficient | t-Statistic | Prob. | DW | JB (Prob.) | LM (Prob.) | ARCH (Prob.) |
|---|---|---|---|---|---|---|---|---|
| SE | C | 198.9267 | 3.55281 | 0.0008 | 1.800 | 0.286 | 0.377 | 0.477 |
| | AR(1) | 0.455054 | 3.60931 | 0.0007 | | | | |
| | MA(1) | -0.964143 | -31.431 | 0.0000 | | | | |
| W | C | 76.74922 | 6.32099 | 0.0000 | 1.667 | 0.178 | 0.365 | 0.379 |
| | AR(1) | -0.785568 | -7.4835 | 0.0000 | | | | |
| | AR(2) | -0.616109 | -6.3504 | 0.0000 | | | | |
| | MA(3) | -0.934819 | -31.490 | 0.0000 | | | | |
| SM | C | 22518.54 | 26.7798 | 0.0000 | 2.043 | 0.618 | 0.911 | 0.185 |
| | AR(1) | 0.685412 | 7.31483 | 0.0000 | | | | |

Source: own processing using EViews

Similarly, the results obtained by applying Breusch-Godfrey Serial Correlation LM Test (Lagrange Multiplier test), ARCH Test (autoregressive conditional Heteroskedasticity) and Durbin-Watson statistic (DW), leading to acceptance homoskedasticity hypothesis and lack of the residues autocorrelation.

**Conclusions**

In the tourism industry, and therefore in the national economy number of overnight stays foreign tourists in the establishments of tourist reception in Romania is of particular importance, because it determines a cash flow entering the country, increasing national income. The contribution of the eight development regions in the creation of this cash flow in the analyzed period was significantly different. The region with the largest contribution is Bucharest-Ilfov. This area is favored by the fact that here is located the capital city the number of overnight stays are significantly influenced by foreign business flow, and to a lesser extent, the flow of tourists.

An important contribution to the cash flow coming in Romania by the tourism industry has the development region Center, in which there are the counties Alba, Brasov, Covasna, Harghita, Mures and Sibiu. Of these, in 2013, Brasov County ranks second in the country (after Bucharest) in terms of the number of overnight stays of foreign tourists, and the counties Mures and Sibiu which was ranked on the fifth and sixth.

Although the economic crisis triggered in 2009 had a great impact on the number of foreign overnight stays, from 2010, econometric models of the evolution of the regions Bucharest-Ilfov and Center shows a clear trend and significant of increasing. Evolutions relatively linear, but with annual increases of four or five times lower than in the Center, were recorded in the regions of North-West, North-East and South-West Oltenia.

Contradictory developments over which overlapped, in some counties, seasonal fluctuations of large amplitude (Constanta and Tulcea counties) did not allow finding of some valid linear increasing models, and the small number of observations in the annual series of the development regions of South-East, South-Muntenia and West, did not allow search of higher order polynomial models.

To identify valid econometric models of evolution in the number of overnight stays of foreign tourists, in development regions South-East, South-Muntenia and West were used monthly records available for the period 2010–2014. For these was identified an autoregressive model AR(1) for South-Muntenia region, and two autoregressive and moving average models of ARIMA type for the other two regions. These together with other five linear models provide a good description of the evolution of the number of overnight stays of foreign tourists in the structures of tourist reception with functions of accommodation of the eight development regions of Romania.

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UDK 81'276.3

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# CARNIVALISATION AS TELEOLOGY OF LANGUAGE SUBSTANDARD

The article describes the concept of language substandard carnivalisation.The research program in terms of WHAT-, HOW-, WHY- and WHAT FOR-linguistics corresponding descriptive, explanatory, integrated and goal-directed stages of the language game study is presented. The results of the study are explicated in the language models, cognitive mechanisms and linguo-cultural modusses. Carnivalisation is teleology of substandard speech, setting the parameters of WHAT FOR-linguistics.

**Key words:** carnivalisation, substandard, language game, language model, cognitive mechanism, linguo-cultural modus, teleology, WHAT-, HOW-, WHY- and WHAT FOR-linguistics.

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**We understand language substandard as heterogeneous language (speech) continuum that is characterized by a deviation from the norms of the literary language (standard) or their violation [9], or with a specific norms following, what formed the so-called norms of the second order [22], mostly verbally exist or in such written forms, that follow the settings of oral speech (e.g, informal internet communication), the indistinct boundaries between its varieties, which is typical, for example, for youth and criminal jargon representation primarily on lexical (lexical and phraseological) level as well as manifestation of subcultural values.**

In this relatively extended, vivid and moving space of speech we consider the phenomenon of language game, and we chronologically began our study from that.

Based upon the work of Ludwig Wittgenstein [3], V.Z. Sannikov [17] Johan Huizinga[19] B. Y. Norman [15] and collection of articles «Logical analysis of language. Conceptual fields for game» [13], we have defined the language game as a creative, substandard, deviating from the linguistic, stylistic norms, the rules of verbal behavior and the laws of logical language use.

In the word combination «language game in substandard» there is an element of tautology: it should seem that any deviation from the norm takes the phenomenon beyond the standard. For example, the author of the literary work (Yuri Polyakov, «I have a plan to escape ...[Zamyslilyapobeg….]») plays with the character's patronymic *ОлегТрудовичБашмаков.* Depending on the narrative collisions from time to time he gets the patronymic *Тунеядыч* in the words of his wife or friends, but this fact already switches the fragment of the story to substandard as well as the play with the family name: *Башмаков – Тапочкин.* [16]. Of course, we cannot equate the example from the work of Yuri Polyakov and a series of cognate words from the youth jargon as *ксерачить* – make a photocopy; *ксерево* – what was photocopied, photocopy; *ксерня* – photocopied documents [14]. Slang words *ксера* – copying machine and *ксерить* – make a photocopy are not counted to the phenomena of the language game remaining (at least this applies to the noun *ксера*) belonging to the slang speech i.e. they are beyond the standard language. Such forms of neuter gender in networking as *книжко, собачко, тётко, задачо, проблемо, пятниц*оshould also be referred to substandard, as well as the game model that was set by the Internet meme *Йакриветко* (*Йакриведко*, *Йакреведко*) [7]. The examples of the second row (like *ксерево* and *криветко*) we mean when we talk about language game in substandard.

A.E. Kibrik, in the context of typological method in linguistics, distinguishes taxonomic HOW-typology and explanatory WHY-typology. HOW-typology puts the classification of languages on various parameters as the main task, whereas the WHAT FOR-typology does not only answer the questions about the existence, but also about the reasons of the existence of certain phenomena [10]. We would like to expand the proposed approach to the typology and the method of notation, both in the terms of application field and the number of taxons and their denotation.

As for the volume of it is proposed to transfer the approach and its extension to the area of the languages typology and all Linguistics in general. This expansion we mentioned in the works of researchers who write not only about the HOW-typology, but also about HOW- linguistics and WHY- linguistics in general.

The expansion in the taxons is expected in the form of line construction, starting with WHAT-linguistics and continuing in HOW-linguistics and WHY-linguistics and ending with the taxon of WHAT FOR-linguistics. In this representation, the whole structure is not correlated with the taxonomy as a medium of typology, and it is represented as an epistemology where WHAT-, HOW-, WHY- and WHAT FOR- components introduce episteme. Episteme of WHAT- linguistics explores the object (subject) by its release from a number of similar. The above examples of language games are of WHAT-episteme. The fact of paying attention to this or that phenomenon and its general characteristics from epistemological point of view is a descriptive WHAT-linguistics. It is essential to recognize that there are no clear boundaries between epistemes, and the term «narrative» is conventional to a certain extent in respect of the first episteme. Emphasizing the linguistic phenomenon (for example, *I hear she uses big-O – I heard she smokes opium*), the researcher classifies it as related to substandard and describes it in terms of the language game. Thus, at the level of WHAT-linguistics the researcher highlights the phenomenon, distinguishing it among others, thereby performing an act of qualification. The above example can be described as a derivational phenomenon (*U-turn*), or as syntactical phenomenon (*big O* without the hyphen, it is considered as attributive phrase), or as lexical-semantic in a series of similar items (*big-O, big-C* – cocaine), on the one hand, and *Big Apple, Big Ben*, on the other, and etc.

Therefore, selective and qualitative activity in the study of language, we can define as a narrative and refer to WHAT-linguistics.

Despite the importance of the starting point and its crucial nature, researchers rarely settle for WHAT-linguistics, although this epistemology is quite acceptable, and even appropriate for publications «challenge problem», when a linguist allocates materials and describes them in various linguistic categories. So, in our materials the obligatory research steps are not only the selection of the language (speech) facts, but the understanding of the phenomenon (language game), as well as the materials limitation (substandard variety of Russian and English). Such limitations (or extension) have not only objective (the existence of a phenomenon in a particular area), and also subjective nature (research preferences, knowledge of languages, availability of sources and its interpretation, etc.).

The next step of the study is HOW-episteme, which is an explanatory stage. If at the first stage, in WHAT-linguistics, the subject is a linguistic fact, an element of the structure, but at this stage the subject is the actual structure of the phenomenon. In our case these are the models of language game in substandard. As the model of language game we understand the typed methods of forming units of language (speech) that implement speech sender adjustment to create the game effect [12].

Depending on the nature of linguistic means we allocate the following models of language game: 1) graphical (violation of the syllabic principles of graphics – *йакриветко*, *выпеййаду*); 2) orthographical (*превед**Медвед, аффторжжот*); (3) phonetic (simple repetitions – *buddy-buddy*, repetitions with ablaut – *tip-top*, rhymed repetitions – *scream-ie-meemie*, distortion of the phonetic form – *fer-shur*, *Из**о**бильный*, metathesis – *ossifer*); 4) lexical (borrowings – *фазер-мазер*; semantic shift – *AC/DC* 'bisexual'; antonomasia – *ильич, карлсон*'male genital organs'); 5) phraseological (*pig heaven* 'police station'); 6) word-formative (affixation – *lifer* 'life sentence'; composition, including complicated by affixation – *beefcake* 'overstuffed musclehead'; abbreviation – GIB 'good in bed') 7) grammatical (gender change – *мужчинко*); 8) integrated (phonetic and syntactical, lexical andsyntactical, phonetic andderivational, and derivational and syntactical) (see for details [12]).

Thus, HOW-linguistics deals with the structuring of a researched phenomenon, and is an explanatory aspect of a linguistic epistemology.

Further, on the basis of the models of language game, the cognitive mechanisms are selected that find their expression in the language model. Under the cognitive mechanisms we understand the mental attitudes that define the methods of language modeling in the game coordinate system [4]. In our understanding of cognitive processes we use a different approach, for example, of O.V. Zhuravleva, who identifies the following cognitive models of language games (based on headings in journalism): actualization of t one of the cognitive structures, rethinking of the meaning or forms of the word, assimilation of cognitive structure, its deactualization and cognitive structure sopposition [6].

First of all, in this classification at least two classifications are mixed and brought into one, which are offered by A. N. Baranov and D. A. Dobrowolski in the interpretation of the semantics phraseology [23]. Activation and deactualization of one of the cognitive structures can be described in terms of highlighting and exceptions of one of the cognitive structures as a part of another. The rethinking of the value or the external form should be clarified, as quoted authors, for example, offer seven of its kinds: rethinking as such, non-denotative rethinking, holistic vs. partial rethinking, rethinking of reference boundaries, rethinking of the usage conditions, secondary rethinking, pseudo exhaustive enumeration [23]. The contradistinction of cognitive structures can also be described in terms proposed by Moscow scientists.

It appears that the criticism has an explanation not only on the grounds of the subject itself, i.e. disagreement with a particular interpretation of the cognitive structure, but also, if not primarily, on epistemological grounds: staying within the HOW-episteme, it cannot be adequately explained in terms of system. Thus, the reduction into the system means the tran-

sition from an explanatory aspect, with its focus on the structure to the framework aspect, with its emphasis on the system.

WHY-episteme, in the case of study of the language game phenomenon in substandard, results in identification of the cognitive mechanisms, which not only answer the question «why» regarding language models, but also perform the function of nonrigid determination of language models.

At this stage, we distinguished replicative cognitive mechanism (determines phonetic language model, in particular, various types repetitions), xenolect-mechanism that has phonetic model as language correlates, graphic or orthographical model – the distortion or complex models. Finally, the cryptographic mechanism in the context of WHY-episteme allows us to answer the questions regarding the language structures. Thus, in the example *She's numerouno in our office. You'll have to ask her – She is a boss here. You should ask her* the speaker uses in substandard the lexical units of another language, from xenolect [8], to create the effect of «estrangement» and by means of it – the game effect. Consequently, as models of language games allow take another look at the phenomenon itself, so the cognitive mechanisms bring a new level of understanding of these models.

The further ascension along the line of linguistic epistemology leads us to WHAT FOR-linguistics. WHAT FOR-episteme introduces the research in the teleological, purposeful dimension (compare the meaning of lexemes *why* «on what ground?» and *what for* «for what purpose? »). For the description of phenomenon in terms of WHAT FOR-episteme the concept of modus is used. Under the modus we understand linguistic cultural attitudes for the purpose of broadcasting them into the cognitive mechanisms, and then translate into the language models. Based on the idea of V. V. Khimik [21], we distinguish such linguistic cultural modes as a mode of ridicule and irony, game simulation, reduce and vulgarization.

Carrying out research in terms of the WHAT FOR-episteme showed that between linguistic cultural modes, cognitive mechanisms and language models there are relationships of nonrigid determination, the proposed scheme has epistemic praegnans, shows the relationship of culture, cognition and language by means of framework of certain research procedures, terms and methods of proof.

Following the logic of our analysis, we enter to the function of language. I. G. Torsueva points to the need not to mix the function of language and the function of the statement: «We should distinguish between the main functions of the language, such as the denotative, communicative and expressive (in our terminology) and subordinate (optional) functions – such ludique, aesthetic, magic and others. These types of functions make open list because many of them are situational, i.e. occur in certain situations, moreover, this situation can be quite rare and specific» [18, p. 22].

Without coming into discussion on the functions of language and not having the problem fully and consistently describe the substandard functions, note the fact that even V.M. Zhirmunsky distinguished language game as a distinctive feature of slang speech: «... corporate jargons are a kind of public amusement, language game, subordinated to the principles of emotional expressiveness [5, p. 118].

This would seem possible to complete the study, which has risen to the level of what for episteme. Meanwhile, as it often happens, where, apparently, you need to finish and to sum up, there is a different theme, topos [18] perspectives and all research reaches a new level.

Having answered the question «why?» in order to implement ludique functions, we remain within the framework of linguistics and just open the door to the sphere of culture. The broader cultural concept – carnival helps to reveal the real teleological essence of language game.

As we know, the concept of carnival was introduced into scientific circulation by M.M. Bakhtin. He subtly noticed that, «in the carnival the life itself plays and the game becomes the life itself for a while» [1, p. 13].This is a specific nature of the carnival, a special kind of its existence. M.M. Bakhtin says that «a new type of communication always generates new forms of verbal life, new speech genres, rethinking or abolition of some of the old forms, etc.» [1, p. 22]. The scientist gives an example of such a change while reducing the distance between participants of communication: the emergence of «on a first-name basis» form of address, change of the form of address and name, sometimes replacing the name with the nickname, the weakening of speech restrictions, and the emergence of obscene words.At the same time, M.M. Bakhtin points out that modern familiarity social interaction is very far from the familiarity of folk carnival area of communication. Theworld-renowned philologistcounted as features of «carnival areal treatment of familiar» the quite frequent use of profanity and oaths and vows.And swearing, profanity and oaths emphasizes the scientist, «were ambivalent: reducing and slaughter, they are simultaneously reborn and renewed [1, p. 23].

It should be emphasized that we consider carnivalization of language not as acquired by the substandard speech manifestations of carnival speech, although these manifestations, of course, take place and some of them are obligatory, others are frequent and the third are commonly used in one way or another. Staying within WHAT FOR-episteme, we project the features of the carnival as a cultural phenomenon in the substandard speech. Thesefeatures, inouropinion, include:

1. Game character of carnival, which is based on the comic basis.
2. The construction of another world, another life on the different, not official start.

Thus, under carnivalisation of language we understand these constitutive cultural attitudes that allow through the language game to build a different world, in many ways opposite to the official.

In this sense carnivalisation regarded as the language substandard teleology that defines the original coordinates for the entire epistemological line.

Carnivalisation as the teleology of substandard verbal forms at the level of WHAT FOR-episteme is specified in linguacultural moduses.Whereas, the moduses define the format of the cognitive mechanisms in WHAT FOR-episteme that allows you to manifest the modelsin HOW-episteme and emerge in the phenomena of the language game inWHAT-episteme.

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**E. A. Grudeva, A. I. Chepurnaya, R. V. Chvalun**

# LANGUAGE AS A REFLEXION OF THE NATIONAL CULTURE

We are able to understand the world and ourselves through the language; any language is universal in its basis and national through various modes of its expression, socio-historical experience – both universal and national are assigned in the language as well. It is the latter that determines the specific features of conceptosphere of the language at all the levels. Due to the specific characteristic of any language there is a specific linguistic picture of the world in the minds of its speakers, through the prism of which one sees the world.

**Key words:** valued picture of the world, conceptual picture of the world, linguistic picture of the world.

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**The concept of «picture of the world», which became the basis for the study of the cultural development of the people, is interpreted by scientists W. von Humboldt, N. D. Arutyunova, Y. D. Apresjan, A. Wierzbicka, Y. N. Karaulov, A. A. Potebnya et al. As a language picture of the world, which reflects the hierarchy of meanings and values of national identity as well as the language’s value creates a picture of the world; «a way of rooting human reality – its focus on individual sensory and/or rational reflection of reality, which determines the ratio of subjective and objective language in the notation»; «world in the mirror of language», the picture of the world (the image of the world) is understood as a «display of the human psyche subject of reality»; «set forth in terms of people’s perceptions of reality, reflected in the values of linguistic signs – linguistic division of the world, language ordering of objects and phenomena, the system laid down in the meanings of words – information about the world».**

Each language in its own way describes the world; it has its own way of conceptualization. Thus, each language has a particular view of the world, and the linguistic identity is obliged to organize the content of the statements in accordance with this picture. And this shows specifically human perception of the world, inscribed in language.

Language is the most important method of formation and existence of human knowledge. Reflecting the activity in the objective world, man captures results in knowledge. The totality of the knowledge embodied in the form of language, the fact that different concepts called «intermediate world of language», «language representation of the world», «linguistic model of the world», «the linguistic picture of the world».

The concept of the picture of the world (including the language) is based on the study of human’s notion of the world. If the world is a man and the environment in their interaction, the picture of the world is the result of the processing of information about the environment and man. Our conceptual system is displayed in the form of a language; picture of the world depends on the physical and cultural experience and is directly connected with it.

In the picture of the world as a reflection of the real world and the linguistic world as fixation of this reflection, there are complex relationships. The picture of the world can be represented by a spatial (up-down, right-left, east-west, far-close), time (day-night, summer-winter), quantitative, ethical and other parameters. Its formation is influenced by the language, traditions, nature and landscape, education, training and other social factors.

Linguistic picture of the world is not standing in the row with special pictures of the world (chemical, physical, etc). It is preceded and produces them because the persons are able to understand the world and themselves through language, which secured the socio-historical experience. It determines the specific features of the language at all levels. Due to the nature of language a definite picture of the world through the prism of which one sees the world. Because human knowledge of the world is not free from errors, its conceptual picture of the world is constantly changing, whereas the linguistic picture of the world for a long time keeps tracks of errors and misconceptions.

Linguistic picture of the world forms a type of man’s relationship to the world (nature, animals, him-

self as a member of the world). It sets the standards of human behavior in the world, defines its relationship to the world. Each natural language reflects a certain way of perceiving and organization («conceptualization») of the world. It is expressed in the value added in a certain uniform system of views, a kind of collective philosophy, which is imposed as a mandatory all native speakers.

Consequently, the role of language is not just sending a message, but the internal organization that is subject to post. There is a kind of «value space» (in the terminology of Leontiev), i.e., enshrined in the language knowledge of the world, which certainly intertwined national-cultural experience of a particular language community. The world of speaking this language is forming, i.e, linguistic picture of the world as the body of knowledge about the world, sealed in vocabulary, grammar, phraseology, etc.

The term «linguistic picture of the world» is nothing more than a metaphor for the reality of the specific features of the national language, which recorded a unique social and historical experience of a particular national community, they create for native speakers not a kind of a different, unique picture of the world, other than by objectively existing, but only a specific color of the world, which is based on national significance of objects, phenomena, processes, selective attitude toward them, which is generated by specific activities, lifestyle and national culture of people.

The picture of the world that can be called knowledge of the world is in core of individual and social consciousness. The language also meets the requirements of the cognitive process. Conceptual picture of the world in different people may be different, for example, representatives of different ages, different social, groups, and etc. People who speak different languages can have, under certain conditions close conceptual picture of the world, and people who speak the same language – different conceptual pictures.

Thus, in the conceptual picture of the world we may observe a communication of universal, national and personal. The system of social and common positions, relationships and estimates of the display is a landmark in the national language, and it takes part in the construction of a linguistic picture of the world. Thus, the linguistic picture of the world in general coincides with a logical reflection of the world in people's minds.

So, linguistic picture of the world is a set of fixed language units of people's reality at a certain stage of development. Language «product of language content of the nation ... and therefore to the main questions about the origins and the inner science of language in general cannot properly be answered without rising to the point of view of spiritual power and national identity». [2] Language has a special place in the picture of the world.

Each carries its own national linguistic picture of the world, emerging expense of the linguistic and nonlinguistic resources. At the same time, as noted by V.N. Teliya, «the language of colors through its meanings and associations conceptual model of the world in the national-cultural color». Language is the embodiment of the uniqueness of the people, seeing the world identity, ethnic culture. Different languages in their essence, in their influence on cognition and feelings are really different visions of the world. People in the «course of the history has built their own language, laid him what seemed to them valuable in their internal and external destinies, in their historical and geographical conditions in the process of formation and growth of the spiritual and material culture in order to understand the world and master it» [7]. Idiomatic principles of language refer to specific and unique features of language use. The real world exists insofar as it is reflected in the language. Since every language reflects reality inherent only its way, then, consequently, languages differ in their «linguistic picture of the world».

So, in addition to the concept of a linguistic picture of the world, there are also notion-conceptual picture of the world, ethnic (national) view of the world. Conceptual picture of the world is richer than linguistic picture of the world; national picture of the world is reflected in the semantics of language units through a system of values and associations. Conceptual picture of the world is a system of ideas, human knowledge about the world; it is the mental reflection of the cultural experience of the nation. Perceptions of reality, captured in language of a certain period, allow judging what people were thinking, reconstructing the main features of the picture of the world.

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# AGRITOURISM AS A RAISING DRIVER OF MULTIFUNCTIONAL DEVELOPMENT OF RURAL AREAS IN RUSSIA

**Abstract**

The paper presents the issue of multifunctional development of rural areas and agriculture in Russia. It analyses potentials, challenges and problems of the agritourism from the point of view of its impact on multifunctional rural development, explores alternative sources of income for rural people by means of tourism and investigates effects of the agritourism on agricultural production in local rural communities. The paper shows the most important economic and non-economic benefits associated with the development of agritourism, as well as the threats arising from it for the rural areas. The aim is to identify the existing and potential tourist attractions within the rural areas in Russia on the case of the Southern Russia and to provide solutions to be introduced in particular rural settlements in order to make them attractive for tourists. The paper concludes with a substantiation of the tourism models to be implemented to ensure a multifunctional and sustainable development of the considered rural areas

**Key words:** agritourism, tourism potential; sustainable development; rural territories; agricultural production; diversification; alternative sources of income, multifunctional development.

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## Introduction

In the majority of the developed countries, rural communities do not make a critical impact on the gross domestic product (GDP), but at the same time they concentrate essential volumes of resources, which are lacking in other industries. After the change of the political and economy system during early 1990s, in Russia emerged features that showed its maladjustment to the new state model and market economy. Main features of farming and rural areas were the result of realised over the years development model, which fundamental goal was agricultural production.

Development of rural areas is understood as a process of improving the economic situation and living conditions of people residing in these areas. However, sustainability for rural areas is more than just a sustainable economic growth. The concept of sustainability in rural areas should integrate environmental, economical, cultural and social factors. Here is where a sustainability transforms into a multifunctionality.

According to Erokhin, Heijman, and Ivolga [6], one of the most valuable competitive advantages of rural areas over urban ones is that they harmoniously combine natural and cultural values into a unique mixture of attractions. The increasing trend of last decades in the developed countries is agritourism. Tourism is an effective tool to attract investments and promote interest in rural ways of life, traditions and local identities of rural areas. As an alternative source of income in addition to the traditional agricultural production, rural recreation is especially important in developing countries and economies in transition, where investments in agriculture and volume of state support are lower in comparison to the developed countries of the EU and the USA [16]. The diversity of rural culture in various countries (and even in particular rural areas within a country) provides opportunities to build attractive and competitive tourist products [17]. Potentially, agritourism provides alternative employment opportunities, which give rural inhabitants a sustainable income that is competitive in comparison to that of urban territories.

The approach implemented in the paper is the application of the principle of sustainable development to tourism. Sustainable tourism seeks to sustain the quantity, quality and productivity of both human and natural resource systems over time, while respecting and accommodating the dynamics of such systems. Drawing on the OECD, research suggests that rural regions need to address the particular challenges of business capacity infrastructure, human capital, innovation and services [18]. Tourism represents an important share of the service economy, both domestically and internationally, and the growth sector. According to Erokhin [5], the development of rural tourism increases employment in rural areas, helps to retain people in rural areas (and even attract them from cities), improves the quality of life by the development of rural infrastructure and related industries. Development of rural tourism also has an essential social impact, since it supports historical-cultural diversity and traditions on the regional level.

## Approaches to Multifunctional Development of Rural Areas and Agritourism

Agritourism is considered as dedicated travels to rural areas with relatively undisturbed ecosystems and ethno-cultural complexes, which have a direct impact on the rural development and are subjects for control in the purposes of sustainable rural development [12]. The given concept includes two major definitions. Firstly, agritourism is referred to as an environmentally-oriented tourist product on the domestic and international tourist markets. Secondly, agritour-

ism is expected to act as one of the tools for sustainable rural development [10]. Following this idea, agritourism may be defined as a kind of activity, related to organization of dedicated travels to rural areas, which provides tourists with a complex tourist product (accommodation, meals, excursion services and entertainment), reflects and preserves the natural and cultural identity of regions and ensures economic benefits for hosting communities through the development of employment opportunities and alternative sources of income for local population.

Multifunctional development of rural areas by means of agritourism may be considered on two levels – the socio-economic and spatial. The first aspect concerns the rational use of production factors available to the village, while the second refers to the proper distribution of socio-economic activities in economic space and results from the process of planning and area spatial management.

The idea of multifunctional development is the way to solve many problems of agriculture and rural areas, and the implementation of this model is based primarily on the creation of new, various sources of revenues for non-agricultural and agricultural population, who is not able to find a full employment in their own farms. For the purposes of the current research the issues of unemployment and depopulation in rural areas, and perspectives of alternative income opportunities are addressed in the works of Kundius and Chermyanina [15], Jelocnik and Ivolga [14], and Bondarenko [2], along with the issues of intensification of economic initiatives in the rural areas through the development of special economic zones of tourist and recreational type. International practices and success stories concerning the sphere of sustainable rural development by means of tourism are borrowed from the works of Cvijanovic and Vuković (investigations of perspectives of rural tourism in separate localities of Serbia and other Danube countries) [3], Vuković, Kljajić, and Arsić (research of the role of rural tourism in the promotion of multifunctional agriculture) [24], Zawadka [25-27] and Erokhin et al. (comparative analysis of various practices of rural tourism and rural development in Russia and countries of the Eastern Europe) [8].

The above listed approaches to the problem of rural areas multifunctionality were primarily focused on the issue of the rural economy diversification. But this is not a sufficient interpretation range of the analysed category. The concept of multifunctionality can not be identified solely with the process of creating new workplaces. This is a much broader concept, related to local development, entrepreneurship, strategic planning, diversification of agriculture, infrastructure development, improvement of demographic resources, etc.

It should be emphasized that beyond functions of an economic nature, more and more recognised and appreciated are social functions performed by rural areas. The basic activities realised in rural areas, such as agriculture and forestry, fulfill important natural and cultural functions. Understanding the multifunctionality of rural areas wider than as the socio-economic activities and taking into account their natural and cultural functions is consistent with the principle of sustainable development, understood as achieving simultaneous progress in three areas, i.e. economic, social and environmental.

According to Sillignakis [21], the concept of sustainability integrates environmental, economic, cultural and social considerations. In rural areas, population numbers may conceal an ageing population, with younger people moving to the cities for highly rewarded employment opportunities. This means that fewer people work locally and traditional rural industries continue to lose qualified and effective labor force. Attractiveness of rural areas and effectiveness of agricultural production cannot be increased with just a bigger amount of investments into agricultural complex. Rural areas need more than farmer-based development, because the rural way of life is like a social paradigm, which is developed under an influence of a whole set of non-economic factors: social, cultural, historical, ethnic, etc.

Local communities are becoming increasingly important in terms of actions taken to ensure their own sustainability, and are also forming part of wider alliances to preserve the environment globally. There is the recognition that to be sustainable, the preservation of local identities (environmental, cultural, social, historical, etc.) must be grounded in the communities and societies, which exploit those identities [21]. That is why stakeholders in rural areas (policy makers, community authorities, producers, rural dwellers) have increasingly turned to tourism as an alternative means of achieving economic growth and sustainable development through diversification [5].

**Contributions of Agritourism to Multifunctional Development of Rural Areas**

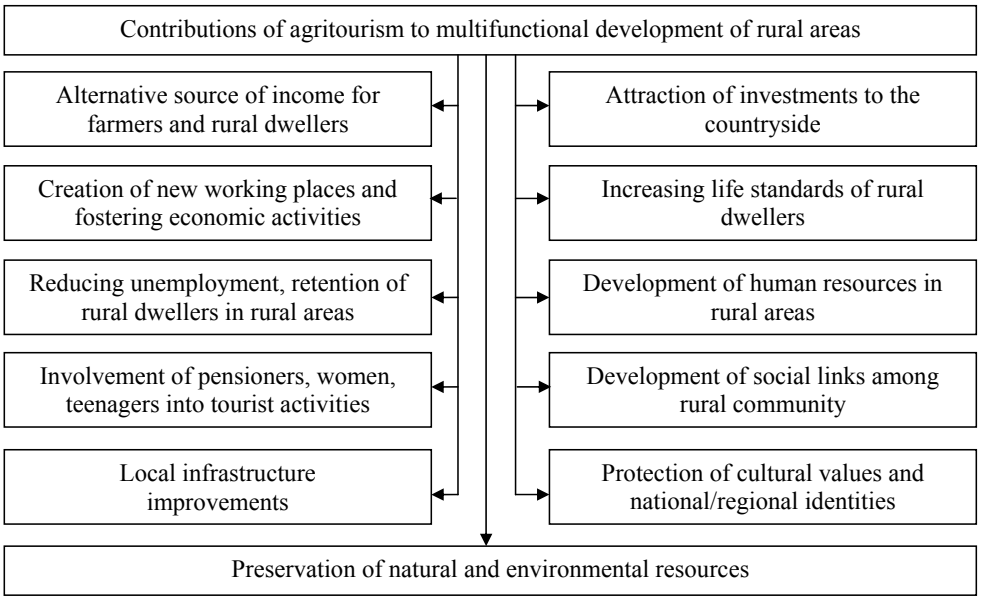
Economic and social consequences of agritourism development, as an alternative form to mass tourism, provide opportunities for its harmonious inclusion into socio-economic life of the community. The most frequently mentioned features and benefits associated with the development of agritourism are those with an economic character (Figure 1).

Incomes derived from tourists are possible from selling them products, meals, handicraft, hiring sports equipment, teaching horse-riding, providing rehabilitation services and many more. Due to the presence of tourists in the borough also its dwellers have benefits financially. At this point it should be mentioned about the so-called multiplier effect, stimulating local economic situation. Arrival of tourists triggers increased demand for other products and services, which may not have anything in common with tourism. Therefore, in many countries, much store is set by the development of tourism as a field allowing for an economy revival in a relatively short period of time.

Arrivals of tourists to farms and profits of farm owners may be a source of inspiration for many rural residents to start receiving guests in their own farm or providing additional services for visitors, which will diversify their stay and rest. The essence of entrepreneurship in a market economy is searching for new fields of activity or creative imitation of the existing ones. Depending on the local natural and cul-

tural values, as well as the resources of their own farms, active citizens wishing to take advantage of the presence of tourists often decide on the provision of food, recreation, sports or cultural services, as well as manufacturing and selling traditional food and souvenirs.

**Figure 1 –** The most important contributions of agritourism to multifunctional development of rural areas




Source: author's development

A common problem of the countryside in Russia is a high unemployment rate and labor surplus in agriculture. Starting from 2008, there has been an accelerated shortage of rural population, which has been worsened by active migration outflow. Depopulation is one of the main threats to sustainable rural development, as it brings about the loss of historically developed areas, degradation of small rural settlements, and depletion of the rural economy. Moreover, it threatens regional and national food security because of agricultural land withdrawal.

During the past 20 years (from 1990 till 2010) the proportion of rural inhabitants within the total population of Russia has decreased by 2.9 percent (from 45.7 % to 42.8 %). The dynamics of the main social and economic indicators of rural development in Russia (Table 1) confirms that small rural settlements are declining, while the population is becoming more concentrated in larger communities.

Table 1 – Social and demographic indicators of rural development in Russia from 2010 to 2013

| Indicator | 2010 | 2013 |
|---|---|---|
| Average size of settlement, people | 1700 | 1650 |
| Proportion of population below active working age, % | 22.8 | 22.4 |
| Proportion of population over active working age, % | 21.2 | 21.0 |
| Average size of household, people | 2.1 | 2.2 |
| Life expectancy, years | 66.6 | 66.8 |
| Share of population with higher and secondary education, % | 31 | 33 |

Source: author's development based on [6]

The labour market in rural areas of Russia is characterised by two divisive tendencies: a decreasing population in general and an increasing proportion of the population of an active working age. The growth of the population at an active working age is faster than economic expansion rates, which drives unemployment up in rural areas. Despite the slowly growing employment level (Table 1), rates of unemployment in rural areas of Russia are still very high (above 30 % in 2011). Moreover, growth rates for employment are slower than those for the economically active population, which forces people seeking jobs to migrate from rural settlement to urban areas.

Rural areas need a wide range of associated services positively influencing the creation of new work places in branches indirectly related to tourism services, which to a large extent may have an effect in the mitigation of the above mentioned problem. What is more, the chance of finding an employment in a place of residence is an inhibitor to migration of young people who can not see their prospects in the countryside.

Diversification of rural economics and expansion of income opportunities for rural inhabitants are the key tasks on the way to increasing the sustainability of rural areas in Russia. For rural territories, diversifi-

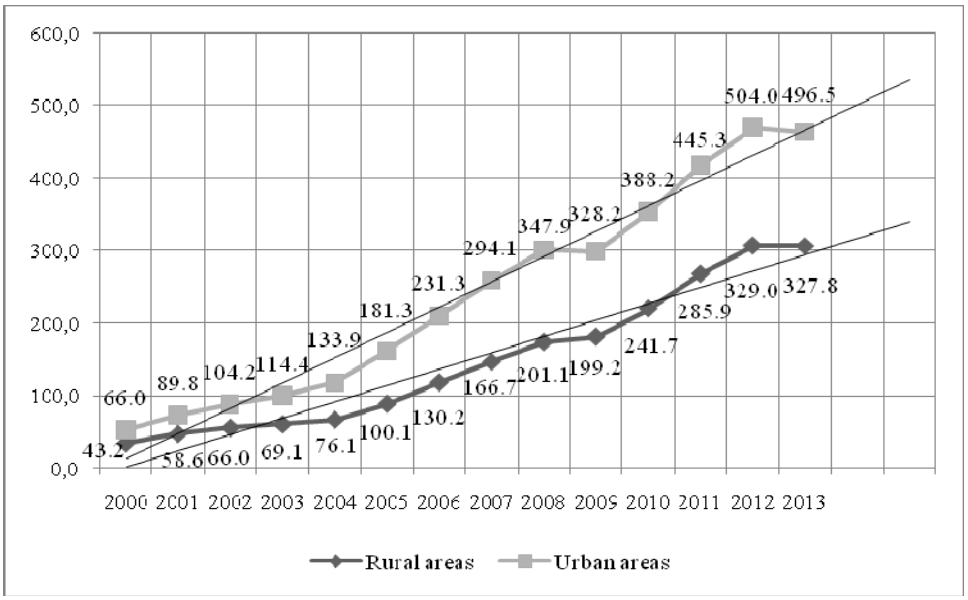
cation means going above traditional agricultural activities, which is currently a vital necessity.

Diversification has to be based on local infrastructure improvements. The improvement of the existing facilities and creation of new infrastructure are the essential actions of local government and entities interested in developing tourism, undertaken in order to create a positive image of the town, indespensable in effective development of this and also other forms of tourism. In order to strengthen the preconditions for sustainable rural development and utilise the existing competitive advantages in rural areas, the Government of the Russian Federation accepted the Federal Target Program «Sustainable Rural Development in 2014-2017 and for the period until 2020». Among the prior directions of that Program, those currently applicable for the Stavropol Region are:

- the satisfaction of needs of rural people, including young families and young specialists, in suitable dwellings;
- the development of integrated facilities in rural settlements, and their social, transport and engineering infrastructure;
- grant support for local initiatives coming from rural inhabitants.

Investments, undertaken by boroughs, focused on development and modernization of the local technical infrastructure which contributes to improving the quality of services for tourists, concern: local roads, parking lots, sidewalks, street lighting; waterworks and sewerage system, local sewage treatment plants; landfills, separate waste collection, etc.

Agritourism is mainly seen through the prism of economic benefits achieved by hosts and the local community, and also the prosperity of the local economy. Currently, it is hard for rural settlements to compete with urban and suburban areas for investments. Income gap between urban and rural territories is permanent over the referred period of 2000-2013– about 150 % (Figure 2).




Source: [5]

**Figure 2 –** Dynamics of average per capita disposable income in rural and urban areas of Russia in 2000-2013 and liner trends to 2015, euro per month.

Overcoming differences between urban and rural areas in income level in particular and in economic, technological, and social development in general should become the strategic trend of rural policy in Russia. People will migrate back to rural areas from cities only in case they are aware of certain level of income, as well as infrastructure, comparable to urban conditions.

As of today, almost a half of regions in Russia (47 %) are not favourable for sustainable rural development. Some of the regions are even considered as depressed ones, with various symptoms of economic downturn and social depression. Those regions concentrate about 64 % of rural population of Russia.

Thanks to the arrival of citizens to agricultural farms deeper understanding of two different communities (urban and rural) is possible. Tourists, who pleasantly and efficiently spent their free time in rural environment, made closer relationships with their hosts and other members of rural society (which often become long-term acquaintances and friendships) change their vision of rural residents. Having a rest at such a farm provides an opportunity for: gaining or expanding knowledge about agricultural practices, getting to know and taking part in production processes, learning about problems of animal husbandry and other issues related to the foodstuffs manufacturing. Staying at a farmland is also a great occasion to meet folk culture and learn about still cultivated rural customs and traditions which are often different from those of urban residents, and to taste local food and drinks.

A considerable part of residents, living in regions where agritourism is being developed, is characterised by great activeness in self-organisation and ability to cooperate. An evidence of this fact is at least presence of numerous agritourism associations and

local tourist organisations. Hosts aware of the benefits associated with tourist stay, who aim at attracting greater number of tourist, strive for an increase in quality of services they provide and its diversification. That is why, many times they undertake cooperation with other owners of agritourism farms, disposers of gastronomic infrastructure and diverse tourist attractions, and also the rest of rural residents who may contribute to enrichment of the offer and making it more attractive.

Rural residents cultural activity is extremely important for tourism development. Tourists presence gives an argument for folk bands to work, local culture and religious traditions to be supported, organisation of feasts, church fairs, harvest festivals and other common amusements uniting local population and visitors. Tourist interest in regional attractions also allows rural residents to look at their surroundings from other perspective and value it. Thanks to tourism influence increases tolerance for distinctness of behaviours and differences in customs.

Agritourism development, which one of the greatest trump is contact with non-polluted environment and its resources. However, agritourism realised in accordance with conception of sustainable development may occur to be a form of valuable terrains protection, which also does not exclude their simultaneous economical utilisation. Agritourism contributes to creation of so called «green workplaces», integrating development of tourism and principles of environmental protection, which is conducive to sustainable development of rural areas. A way of natural value areas protection against degradation and pollution caused by tourism exploitation is to increase an ecological consciousness of local governments, communities and people who should be the most interested in preserving natural habitat values, that is tourists.

It is impossible to predict all the benefits which may arise from starting an agritourism business. Many of them have incommensurable character or does not reveal oneself in material form, but simply embodies in better living conditions. Agritourism causes that the local economy gets multifaceted, becoming less susceptible to market unsteadiness, which is important in typically agricultural areas. Thanks to tourism business farm families acquire new skills and learn entrepreneurship, which can pay off in other disciplines. Mere contact with visitors and exchange of views bring immeasurable, but significant benefits. For example, in case of foreign visitors tourism mobilises foreign languages learning.

However, it should be noted that in a number of benefits associated with the development of agritourism may also occur risks and negative consequences. Agritourism, as well as other forms of agritourism may become a threat to the environment, especially in case of over-concentration of tourist attendance. Practicing various forms of active recreation, such as: downhill skiing, horseback riding, rock climbing, bike racing and hiking expeditions can cause degradation of the rural landscape, pollution and excessive noise. Just as an excessive number of tourists may harm the natural environment, so their stay in the rural areas can destabilise the local socio-cultural environment and disrupt the rhythm of rural life and work, and also raise conflicts between tourists and residents due to transferring of urban lifestyle and a different system of values to the village.

Agritourism can also cause irreversible changes in the rural area through its accompanying intense urbanization processes. Uncontrolled infrastructure development often destroys a traditional architectural layout of the place. A village sometimes loses its identity – a unique color and special atmosphere. Tourist destinations offer more commercialised and often counterfeited version of its customs and folklore, tailored to the tourists' expectations and imagination.

**Conclusion**

The implementation of such a multi-sided and complex approach to agritourism as a driver of sustainable and multifunctional development of rural areas in Russia involves the completion of a range of tasks. Among the top-priority tasks, we emphasise:

1. development of theoretic and methodical issues of sustainable rural development by means of rural tourism;
2. assessment of the current and long-term sustainability of the economic development of rural territories in Russia;
3. development of mechanisms for implementing the Strategy for sustainable rural development through particular kinds of tourism and action plans for short-, medium- and long-term perspectives;
4. elaboration of social, economic, legal, administrative and managerial measures which drive the touristic and recreational complex of Russia to a brand new qualitative level and provide complex sustainable solutions through economic, social and environmental tasks along with the preservation of the natural resources and historical and cultural potential of the country.

Prerequisite for success in agritourism is i.a. positive attitude of the main stakeholders towards tourism. Undertaking actions for the development of tourism requires carrying out a meticulous account of the benefits and risks. Tourism, beyond the benefits of raising money and economic recovery, also requires long-term investment aggravating all the inhabitants of a certain village, so not only those who will directly benefit from the influx of tourists. Tourists will not come to the village which lacks basic infrastructure related to recreation and leisure. Room rental, guest services, organizing their leisure time often requires a significant financial investment, related not only to the renovation of the house, but also to equipping it so as to provide visitors the appropriate standard.

To increase revenues from tourism, municipalities and local communities should concern about the largest possible number of tourists visiting a particular place, simultaneously taking into account the tourist capacity. It is lucrative not only to extend the length of tourists stay, but also to extend the tourist season by introducing new functions independent of weather conditions. Increased visitors expenditure can be achieved not only by raising prices, but

also by the introducing variety of additional attractions, suitably managing the area. Often reservation arouses the fact of indifference or jealousy of the rural population which does not gain the financial benefits from tourists' presence. Meanwhile, all residents may get some profits from the development of tourism in the municipality. Making the community and the authorities of territorial units aware of this fact and incorporating it during masterminding the municipality development strategy is an important factor in aiming at diversification of the municipality incomes and increasing revenues from tourism.

However, a particular attention should be paid to the fact that agritourism is only one of the elements of rural areas multifunctional development. Placing too much hope in agritourism is risky for the municipalities which are deprived of any tourist values. Researches concerning agritourism market, including existing and potential customers, are therefore necessary. Future of agritourism depends largely on good orientation in groups of services in which tourists are interested and also in segmentation of tourists.

Taking into account the unique resort resources of Russia, we consider the development of the regional recreational sector as one of the tools with most perspective to provide alternative sources of income to rural people and to ensure the sustainability of rural areas. The key factors which may promote sustainability are health and treatment tourism in rural areas, excursion and ethnographical tourism, educational and recreational rural tourism, and gastronomy tourism. The most important expected effects from the development of rural tourism are the growing involvement of rural people in new employment opportunities, a better quality of life of rural population, the development of rural areas, and the sustainable growth of agricultural production.

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**A. I. Chepurnaya, R. V. Chvalun, E. A. Grudeva**

# COOPERATIVE LEARNING OF FOREIGN LANGUAGES: HIGH SCHOOL EXPERIENCE

The article describes the experience of using the method of cooperative learning of foreign language in high school. The method is based on the principle of mutual assistance and cooperation, and allows combining student-centered and teaming approaches to learning.

**Key words:** cooperative learning, student team learning, student teams achievement division, teams games tournament.

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**Technology education in cooperation based on the idea of interaction of students in a group, the idea of mutual learning, in which students take on not only the individual but also a collective responsibility for solving educational problems, help each other and are collectively responsible for the success of each student. Unlike the front and individual training, under which a student acts as an individual subject of training activities, he is responsible only for «himself», for his successes and failures, and the relationship with the teacher is the subject-subjective in nature, in education, in collaboration it creates conditions for the cooperation «student – teacher – group», actualization of the collective subject of educational activity.**

The basic idea of this technology is to create the conditions for active co-curricular activities of students in different educational situations. If you combine the students into small groups (3–4 students) and give them one common task, specifying the role of each student group in performing this task, there is a situation in which everyone is responsible not only for the result of his work (which often leaves the student indifferent) but also for the result of the group. Therefore, the weak students are trying to find out from the strong ones all the unknown things, and strong students interested in that all members of the group, especially a weak student thoroughly understand the material (a strong student has the opportunity to test his own understanding of the issue). Thus, joint efforts eliminate gaps in knowledge (Polat, Buharkina, 1999).

There are many different learning options in cooperation, but they are implemented in compliance with the following principles:

– a teacher formed a group of students based on psychological compatibility of students. At the same time each group must have strong, medium and weak students, boys and girls, representatives of different national minorities;
– the group given a single task, but its implementation provides the distribution of roles between group members (usually distributed by the students themselves, but in some cases a teacher can make recommendations);
– evaluation of the entire group. It is important to evaluate not only knowledge, but effort of the students. In a number of cases it is possible to provide students with the opportunity to assess the results of their own work;
– the teacher chooses a student group that needs to account for the results of group activities. If the weak student is able to explain in detail the results of the joint work group to answer the questions of other groups, so the goal is achieved and the group coped with the task, as the goal of any job – not a formal implementation, but acquirement of material by each member of the group.

One option of cooperative learning is Student Team Learning (STL, training team). This method focuses on the «group goals» (team goals) and success of the entire group (team success), which can be achieved only as a result of independent work of each member of the group (team) in constant interaction with other members of this group when working on the topic , issue or issues to be studied. Thus, the task of each student is not only to do it together, to learn together, but each member of the team must take-over the necessary knowledge, form the necessary skills (Grudeva, 2011).

The whole group is interested in the assimilation of educational information for each member, as the team success depends on the contribution of everyone, from the joint solution of the problems they face. Briefly STL comes down to three basic principles:

1) Teams receive one award (team reward) in the form of evaluation in points, certificate, an insignia, praise and other forms of evaluation of joint activities. Groups do not compete with each other because they have different «bar» and time for its achievement;
2) Individual responsibility of each student means that the success or failure of the whole group depends on the success or failure of each of its members. This encourages all team members to monitor the success of each other and the whole team to come to the aid of his comrade in learning, understanding of the material so that everyone could feel himself an expert on this issue;
3) Equal opportunity for success means that each student brings his group points he earns by improving its own previous results. Comparison is thus not carried out with the results of the other students, or other groups, with their own previous achievements. It gives strong, average and weak students an equal opportunity to obtain points for their team.

Variants of this approach to the organization of training in partnership can be considered: a) individual and group (Student – Teams – Achievement Divisions – STAD) and b) command game (Teams – Games – Tournament – TGT).

In the first case, the students are divided into groups of four (required for different levels of education, girls and boys). The teacher introduces new material, and then offers students in groups to try to understand it, to understand all the details. From the point of view of psychology we organize work on the formation of a rough basis of action (but for each student). The groups are given certain tasks, necessary support. The task is carried out in parts (each student is doing his part), or each subsequent task will be executed by a following student, starting a student can be either strong or weak (Grudeva, 2011). At the same time each task is commented by a student and supervised by the whole group.

After the assignment the teacher gives all groups a test to verify understanding of new material. Assignments of the test students perform individually, outside of the group. At the same time the teacher is required to differentiate tasks for strong and weak students in complexity and volume. Each student is evaluated individually, and his mark will not affect the results of the group (Polat, 2000, p. 8).

The organization of the team game tournament activity is as in the previous case, the teacher explains the new material, organizing group work for the formation of orientation, but instead of the individual testing offers each week to hold tournaments between the teams. For this tournament tables are organized by three students (equal levels of education) at each table. Tasks are differentiated in complexity and volume. The winner of each table brings his team to the same number of points irrespective of the level of preparedness of students. The team that gains the most points is declared the winner of the tournament with an appropriate ceremony.

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**V. N. Avdeeva, Iu. A. Bezgina, E. V. Volosova**

# MODERN TECHNOLOGY FOR IMPROVING SEED QUALITY

The findings of wheat planting preparation are presented in the article. Productivity of agricultural crops depends on a seed grass quality. In this article the results of seeds quality improvement tests are given, in particular, the germinating energy and germinating ability of seeds, by means of electro ozonization, as modern, ecologically safe method.Two-factorial test allows revealing optimum ozone doses and a seeds exposure, from ozonization to germination setting up. Doses equal 14,0–17,0 g·s/m$^3$ of ozone are most optimal parameters for ozone stimulation of sowing qualities of wheat; 14 days is the recommended exposure period from ozonization to germination wheat seed setting up.Tests result, presented in the article, allow to make a conclusion that it is necessary to do further scientific researches in effective modes of processing definition of agricultural crops, by ozone-airy mixture for sowing qualities of seeds improvement.

**Key words:** electro ozonization, the ozone doze, the binning, the germinating energy, the germinating ability of seeds.

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**Working out of strict scientific bases providing environmental security, quality of foodstuff and society health, is a priority problem of each country. Creation of new update ecological technologies of getting in heavy yield is not less important. Productivity of agricultural crops depends on sowing quality of seeds. Now various technologies of seed treatment, however not all of them conform to the modern ecological safety standards and requirements.**

Thus scientific and practical interest represents a search of ecologically safe methods of influence on yielding qualities of agricultural crops. And with the help of the scientific literature we can make a conclusion that ozonization is such a method.

The great attention is given to ozonization in Russia as to a way of sowing quality seeds increasing and disinfecting of agricultural crops. In particular, tt the Kuban state agrarian university have experimentally proved that at processing of corn seeds with an exposure till 15 minutes, the germinating ability of seeds considerably increases. Also from references it is found out that energy of germination and germinating ability of seeds processed by ozone, depend on the binning time after processing to germination seeds setting up. The best result can be reached at the binning time from 5 till 20 days.

In the Stavropol state agrarian university for a number of years we conducted researches on ozone influence on a sowing material in order to increase germination energy and the germinating ability of seeds. Tests and experiments have shown the three factors influence on yielding properties of seeds. This three factors are: ozone concentration, time of ozone- airy stream processing to the sample an and the binning time of seeds after processing. For working out of common approach to an estimation of ozone influence on wheat seeds, we have introduce a concept «a processing dose». It is calculated by formula:

$$D = c \cdot t,$$

Where :

$D$ – a processing dose, g·s/m$^3$

$c$ – Concentration of ozone, g/m$^3$;

$t$ – Time of processing of seeds (exposure time)

Processing of seeds was spent on an ozonizer «Ozon-60P» ozone concentration equals 0,035 g/m$^3$. Ozone concentration was defined with the help of gas analyzer «Tsiklon-5.41». Researches have shown what germinating energy and the germinating ability of seeds considerably increase with the use of ozone doze from 9,0 till 19,0 g·s/m$^3$.

By results of the test, that we had done a two-factorial experiment of ozone influence on sowing qualities of wheat seeds. The factor *x* is the doses of ozone processing. The doses got out with the account of the past results. As doses from 9,9 to 18,9 g·s/m$^3$ on have greatly influenced on germinating energy and the germinating ability of wheat seeds, and the decision to repeat processing of seeds in the given range was accepted. Doses have made: 8,4, 9,9, 10,5, 12,6, 14,7, 16,8, 18,9 g·s/m$^3$. The processing

was made by an ozonizer of «Ozon-60P», concentration of ozone was 35 of mg/m$^3$. The factor *y* is an exposure of seeds from ozone processing to a germination setting up (0,7,14 days). The results of the experiments are shown in tables № 1 and № 2.

The dose (factor *x* ) has made a significant influence on germinating energy of winter wheat seeds (tab. 1). At a dose 8,4g·s/m$^3$ the value of an indicator from 82,3 % that is considerable above control (69,0 %). The increase in a dose of processing has led to improvement of germinating energy, and at a dose 12,6 g·s/m$^3$ there is an essential distinction between variants. The indicator reaches the maximum at a dose 16,8 g·s/m$^3$ (89,0 %).

Table 1 – Ozone Influence on germinating energy of wheat seeds, in % (Control – 69,0 %)

| Ozone doze, g·s/m3, x | The seeds exposure, 24 hours, y | | | Average value |
|---|---|---|---|---|
| | 0 | 7 | 14 | |
| 2,1 | 72,0 | 72,5 | 71,3 | 71,9 |
| 8,4 | 82,0 | 81,0 | 84,0 | 82,3 |
| 9,9 | 83,0 | 81,0 | 84,0 | 82,7 |
| 10,5 | 83,0 | 81,0 | 84,0 | 82,7 |
| 12,6 | 87,0 | 87,0 | 88,7 | 87,6 |
| 14,7 | 87,0 | 87,0 | 90,0 | 88,0 |
| 16,8 | 88,0 | 88,0 | 91,0 | 89,0 |
| 18,9 | 88,0 | 88,0 | 91,0 | 89,0 |
| 19,8 | 72,8 | 73,5 | 73,3 | 73,2 |
| Average value | 82,5 | 82,1 | 84,1 | - |
| **$HCP_{xy,0,95}$=3,1** | | | | |

The seeds exposure (factor *y*) hasn't influenced greatly on germinating energy of wheat seeds. variability index of an indicator dependents on the binning time and had symmetric character: 82,5, 82,1, 84,1, the maximum value germinating energy has reached at the binning time equals 14 days (HCPB95=1,9 %).The germinating ability of the wheat seeds has also increased, according to increase of an dose of ozone-airy stream (tab. 2) increased.

Table 2 – Ozone Influence on the germinating ability of wheat seeds, in % (Control – 75,0 %)

| Ozone doze, g·s/m3, x | The seeds exposure, 24 hours, y | | | Average value |
|---|---|---|---|---|
| | 0 | 7 | 14 | |
| 2,1 | 77,5 | 79,8 | 80,0 | 79,0 |
| 8,4 | 82,0 | 83,0 | 84,0 | 83,0 |
| 9,9 | 86,0 | 86,0 | 89,0 | 87,0 |
| 10,5 | 86,0 | 86,0 | 88,0 | 86,7 |
| 12,6 | 90,0 | 90,0 | 94,0 | 91,3 |
| 14,7 | 92,0 | 91,0 | 94,5 | 92,5 |
| 16,8 | 90,0 | 90,0 | 94,8 | 91,6 |
| 18,9 | 90,0 | 90,0 | 93,0 | 91,0 |
| 19,8 | 74,3 | 74,3 | 76,8 | 75,1 |
| Average value | 85,3 | 85,6 | 88,2 | - |
| **$HCP_{xy,0,95}$=3,3** | | | | |

The given indicator essentially changed, since an ozone dose of 9,9g·s/m$^3$, the germinating ability has reached the maximum value by ozone processing at a dose 16,8 g·s/m$^3$. Thus the germinating ability in comparison with control value (75,0 %) has increased by 19,5 % and has made 94,8 % at seeds exposure during 14 days.

Thus, processing of wheat seeds by an ozone-airy stream allows to improve sowing qualities of seeds in comparison with control value, raw ozone seeds. It is necessary to consider as optimum parameters of wheat seeds sowing qualities ozone stimulation the doses of 14,0–17,0 g·s/m$^3$; a recommended seeds exposure is the time from the moment of ozone processing by to a germination setting up . It takes 14 days.

Tests result, that had been done, allow to make a conclusion that it is necessary to do further scientific researches in effective modes of processing definition of agricultural crops, by ozone-airy mixture for sowing qualities of seeds improvement.

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**D. O. Gracheva**

# ON THE QUESTION OF THE VALUE CHAIN MANAGEMENT IN CROP PRODUCTION

This article describes the features of process-oriented management in the agricultural organizations functioning in the sphere of plant growing. Specifically identified two types of business process management upper level in the cultivation of winter wheat.

**Key words:** process-oriented management, business process, agriculture, winter wheat.

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**Using the value chain allows a different angle to consider the characteristics of agricultural production management. Dividing the main business processes of winter wheat production into two parts: before and after obtainig products in the material form, having a certain customer value (figure 1), can be distinguished into two different types of management with diverse characteristics.**

The first type covers the management of business processes associated with inbound logistics, growing crops, harvesting, and the object of the second type of management is a chain of consecutive business processes from wheat transportation to the threshing-floor to its sale.

A distinctive feature of the first type of management is the probabilistic nature of obtaining planned harvest and various methods of material resources consumption and methods of work.

The second type of management is characterized by certainty results of the physical parameters of volume and quality of grain, purification methods and storage, but, from the other side, the probabilistic nature of revenue from sales, depending on prevailing market conditions.

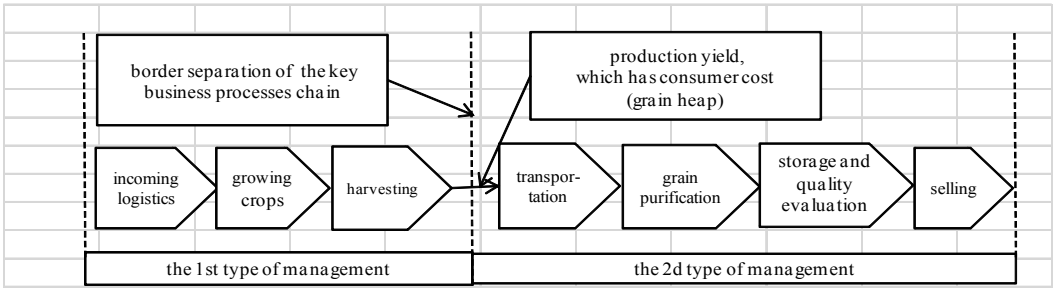


**Figure 1 –** Selecting of two types of management in the framework of the winter wheat production value chain

The main goal of the first type of management – to collect the maximum possible grain harvest in the current conditions of the agricultural year, and the task of the second type of control – to save the volume and quality of grain by minimizing losses during transportation, storage and processing, as well as selling products with the maximum benefit for the agricultural enterprise.

After harvesting in the economic turnover of agricultural enterprise appears product as an economic category, which has a certain value and quality indicators. Therefore, there are important questions, such as rational use and proper organization of storage and processing of grain, choosing the most economically feasible modes and methods.

Consider in more details features of processes control within the framework of the first type of management.

In accordance with the concept of M. Porter the kind of activity named «incoming logistics» means providing of production by certain kinds of raw materials, which then are converted directly into the product in technology conditions. This group of raw materials in the practice of management accounting is often referred as «basic raw materials».

Different types of raw and other materials relating to this group are used for production in accordance with technological norms and are variable costs, the value of which is directly proportional to the volume of output.

The calculation of the need for raw materials is mainly is made on the basis of the planned volume of production, taking into account the technological standards of consumption and stocks.

In the production of winter wheat to this group of raw materials can be referred seeds, fuel, fertilizers, plant protection products (herbicides, fungicides, insecticides), as well as the water used for soil fertilizer and plant protection products. These conditions are related to the characteristics of agricultural production.

In the process of cropping the main types of raw materials transfer their value to products not directly as in industrial production, but indirectly – through incorporation into the soil. Technological standards for the use of the main raw materials are determined per hectare of crops for each specific culture.

Within the framework of the particular technology application, the rate of productive consumption of the main raw materials are not constant and are adjusted depending on the conditions of the agricultural year (weather conditions, phytosanitary environment, changes in the characteristics of the soil, etc.). Therefore, the volume of using raw materials for one production cycle for each crop year has a variant character (for winter wheat about 330 days).

For example, seeding rate set depending on the climatic and weather conditions (early or late planting dates), seed quality, grade, sowing method, field weediness, precursors, and other factors. The norms of mineral fertilizers is calculated taking into account the needs of the crop nutrition, reserves of nutrients in the soil, moisture, etc.

When modeling business processes as part of «incoming logistics» must be represented the information as a separate object input into the process of production. The information obtained by the evaluation (diagnostics) the conditions of agricultural production, on the basis of which application rates of the main raw materials are adjusted.

In the industry in the absence of at least one commodity item from the group of the main raw materials provided by technology, output of finished products, in principle, is not possible.

In agricultural production situation is rather different. Influence of commodity item as a part of the main raw materials on the possibility of producing the crop is ambiguous.

So without the seed and a complex mechanized operations it is really impossible to get harvest (business process of growing crops will not take place). However, the crop can be obtained without fertilizers and plant protection, but in a relatively smaller volumes and lower quality.

Fertilization gives a boost to the future of the crop, and the use of plant protection products reduces the possible loss of future crops from pests and diseases.

Unlike most other economic activities in the agricultural production there is no direct proportional relationship between the volume of the crop and the amount of used raw materials.

As a result of impact on the process of growing crops such factors as climatic, biological, soil conditions, the relationship between the volumes of soil application of seeds, fertilizers and plant protection products and the volume of the resulting crop is probabilistic in its nature.

Even in the situation of «the one hundred percent» implementation of all agricultural activities some factors can provide the total or partial loss of weather can cause such natural phenomena as the long rains, the hot winds, droughts, ice crust, rising water, wind and water erosion, landslides and others.

The objective need is a crop insurance, and especially – for the winter wheat, which has among cereal the longest production cycle.

Modern types of insurance allow to insure agricultural crops in the event of loss or damage from drought, waterlogging, damping-off, freezing, hail, storms, hurricanes, floods, mudflows, lodging of plants, soil crusting, rotting of seeds in the soil, flushing, siltation and skid crops, a delay in the maturation and harvesting, as well as from disease and pests.

In our view crop insurance should be an important management (support) process in a process-oriented model of farm management.

The crop year conditions for growing the winter wheat make significant changes not only in the rules and make the volume of the main raw materials, but also in how to perform producing operations as a part of the business processes of the second and subsequent levels (figure 2).

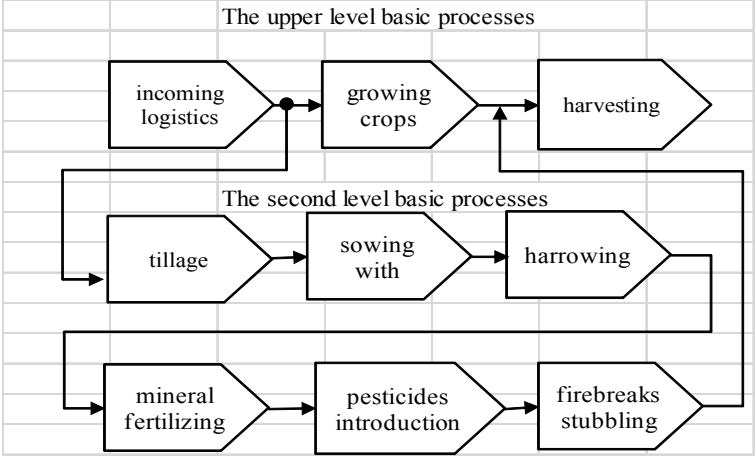


**Figure 2 –** Key business processes of the first and the second level of winter wheat production

For example, the method of tillage (plowing, treatment with plane or disc harrow) depends on the precursor particle size distribution (mechanical) composition of the soil, power humus horizon, the humidity level and other parameters.

Winter wheat is one of the most diseased crops and requires constant phytopathological control. In the process of growing adverse phytosanitary conditions may occur in crops and the need for special measures of plant protection from weeds, pests and diseases will increase.

On the stages of cultivation and harvesting almost every production process is preceded by an analysis and diagnosis of conditions of work. After getting results an agricultural enterprise management determines the need to adjust technology – the usage of a particular method of technological operations.

Table 1 – Types of diagnosis before starting the production process

| Production processes | Types of diagnosis (agro-technology processes) |
|---|---|
| Seed dressing | Seed fitoexpertise |
| Presowing tillage | Assessment and forecast weather conditions. Information about predecessor. Diagnosis of soil (type, soil density, humidity level, the degree of weed infestation by weeds, power of humus horizon, and others) |
| Seeding with fertilizing | Assessment and forecast weather conditions (temperature, availability of precipitation). (mechanical) soil composition. PH of the soil. Evaluation of soil moisture reserves Assessment of the quality of seed (variety, reproduction) |
| Harrowing | Analysis of the winter wheat crop before snowmelt. Diagnosis of density and uniformity of the crops. Diagnosis of the bulging crops |
| Adding fertilizer (spring fertilization, foliar application) | Assessment and forecast weather conditions. Temperature and moisture level in the soil. Diagnosis of the nutrient content of the soil. Evaluation of the density of crops. Diagnosis of the foliar cover (separately – diagnostics of flag leaves). Monitoring the passage of plants vegetation season |
| Adding plant protection | Diagnosis of phytosanitary condition of crops. Agrobiological control phase at the beginning of winter wheat outlet in the tube. Diagnosis of the foliar cover |
| Harvesting | Assessment and forecast weather conditions.<br>Preliminary assessment of the quality of grain by using threshing control method or sheaf approbation by taking him on a field diagonally |

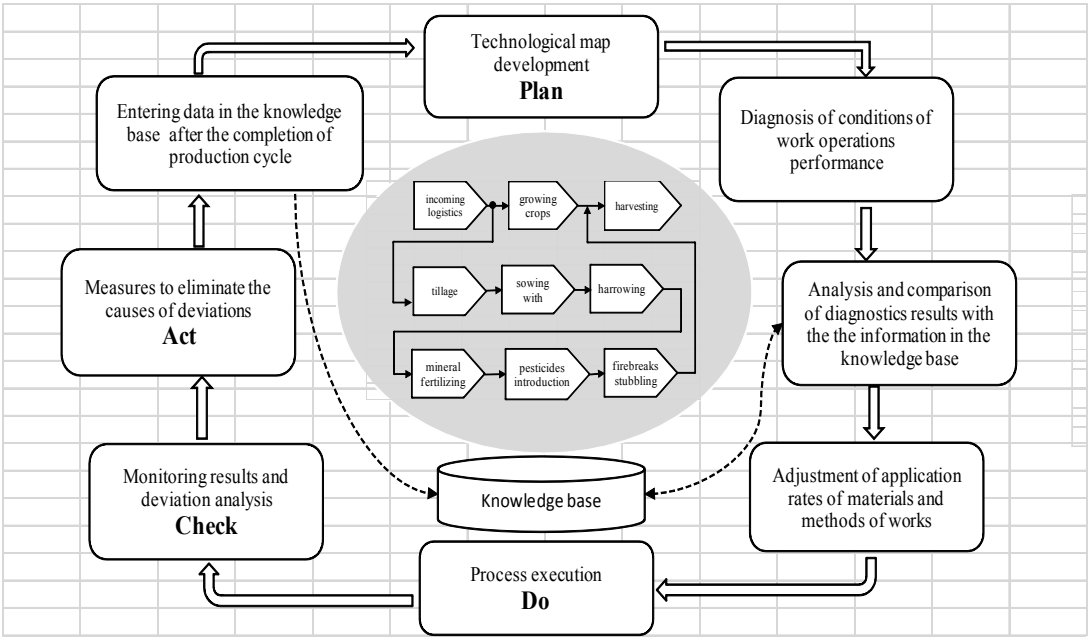


**Figure 3 –** Modified Shewhart-Deming cycle of the business processes management of the process of growing and harvesting of winter wheat

Thus, various types of diagnosis are an integral part of management and information is a basic resource inputs to the business process of upper and subsequent levels. From the perspective of business process modeling, process diagnostics can be described in detail as part of the support process – «agricultural technology.»

Guidelines agricultural enterprises in the constantly changing environment perform production processes require flexible planning tools producing

operations, using as input the results of diagnostic and have an automation functions with resulting parameters calculation.

In our opinion, in the management of the agricultural enterprise, and it is useful to have the knowledge base – accumulated structured historical data on the implementation and results of the production process, operations in certain weather, soil and phytosanitary conditions of each crop year.

Such knowledge base will support management decisions about determining application rates of seed, fertilizer, crop protection products, the timing and content of work, methods of agricultural machinery using, financial security of the company. In fact, the knowledge base is «digitized» the experience of doing business in different conditions of the agricultural enterprise.

Taking into account the specifics of farm management discussed above in the framework of specific business processes, the classic management Deming- Shewhart's cycle («Plan-Do-Check-Act») may include additional algorithms of management actions (figure 3).

Developed flow chart before executing business processes, depending on the varying soil and climatic conditions, phytosanitary situation is corrected in terms of application rates of the main raw materials, and methods of work.

Adjustment of the flow chart is the result of the corresponding type of diagnostic analysis of the results and comparison of results with the knowledge base of agricultural enterprises.

Further algorithms administrative actions, such as «the execution of processes,» «monitoring results and analysis of deviations,» «measures of elimination the causes of deviations» is not different from the Deming-Shewhart's cycle, except for the additional actions «adding data on completion production cycle in the knowledge base « (working knowledge).

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# TECHNO-ECONOMIC STUDY OF VARIANTS UPGRADING OF STAVROPOL GRID TRANSMISSION SYSTEM

It presents technical and economic assessment of the possible upgrading of Stavropol grid transmission system, with the possibility of building ring girt between the transformer substations 110/35/10 kV «Novoaleksandrovskaya» and «Grigoropolisskaya.»

**Key words:** electric power system, economic indicators, calculation of reliability, the choice of the preferred solution.

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**Improving the reliability of power grids due to the increase of electric load and an increase in the number of customers, increased requirements for security of electricity supply.**

The situational circuit area of power grids is shown in Figure 1.

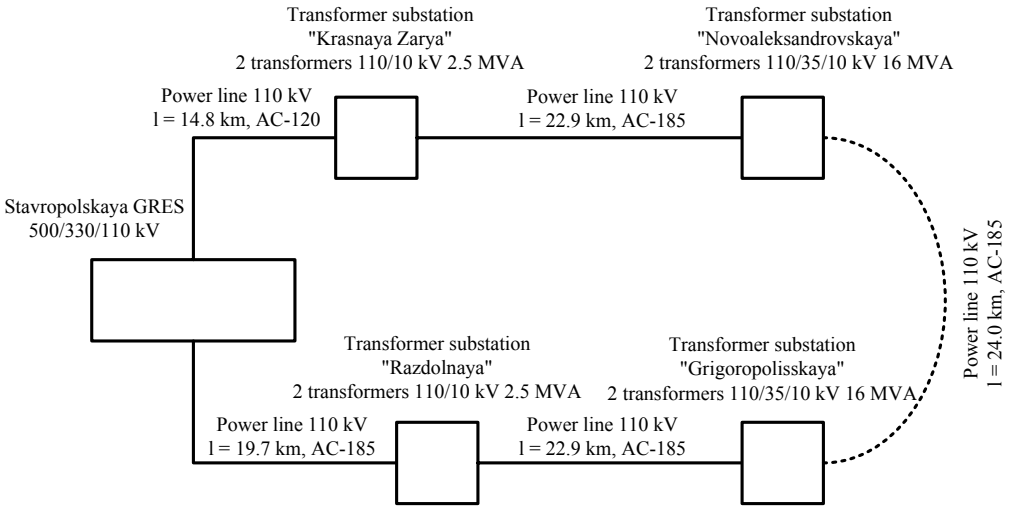


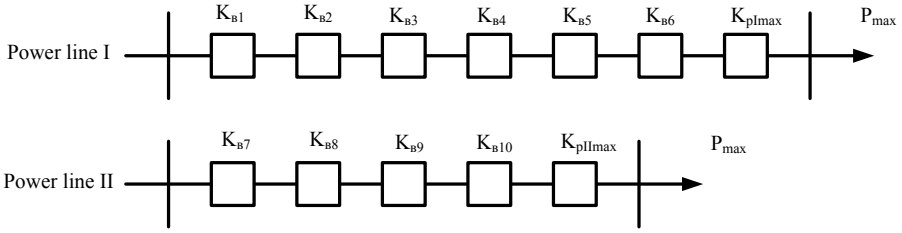

**Figure 1 –** The situational circuit area of power grids

Power supply is carried out by a radial transmission lines from the Stavropolskaya GRES. Power lines 110 kV between the transformer substations are made on reinforced concrete supports using wires AC 120 and AC 185. Power lines are in 2 climatic region with a wall thickness of 10 mm of ice. In transformer substation used air circuit breakers, adopted circuit with switches and short-circuiting switch. At the transformer substation, «Krasnaya Zarya» has 2 transformers, the first – the worker, the second – a reserve for the transformer substation «Novoaleksandrovskaya» has 2 concurrent transformers. In the transformer substation «Razdolnaya» and «Krasnaya Zarya» is set to 1 transformer.

Consider two variants of power supply: Variant 1 – using two radial transmission lines of 110 kV; Variant 2 – with the ring girt between transformer substations «Grigoropolisskaya» and «Novoaleksandrovskaya».

Calculation of reliability and economic performance for the first variant is as follows.

1. According to the scheme of Figure 1 form the structural circuitry for calculating the reliability of the two radial transmission line of 110 kV [1, 4].




2. Let the necessary input data for the calculation of parameters of reliability.

For unscheduled outage accept $\omega_{pl} = 0.027$ failures / km · year, $T_в = 4.52$ hours.

Initial data for calculation of parameters of reliability transformer substation are in Table 2.1 [2]: $\omega_т = 0.015$ failures / year, $T_в = 8 \cdot 10^{-3}$ year / failure, to air circuit breakers $\omega_в = 0.03$ failures / year, $T_в = 3 \cdot 10^{-3}$ year / failure for switches and short-circuiting switches $\omega_{ок} = 0.01$ failures / year, $T_в = 0.8 \cdot 10^{-3}$ year / failure.

Since the transformer substation «Krasnaya Zarya» is made in two-transformer version with working and reserve transformer is necessary to clarify the reliability of the transformer at this substation. Failure flow if this scheme is determined by the formula $\omega = \omega_1 K_{в2} + \omega_2 K_{в1}$, where $K_в$ – coefficient forced downtime $K_в = \omega \cdot T_в$.

For transformer coefficient forced downtime $K_{в1} = K_{в2} = 0{,}015 \cdot 8 \cdot 10^{-3} = 0{,}12 \cdot 10^{-3}$ and failure flow $\omega_т = 0{,}015 \cdot 0{,}12 \cdot 10^{-3} + 0{,}015 \cdot 0{,}12 \cdot 10^{-3} = 0{,}36 \cdot 10^{-5}$. failures / year. So, we get a very low failure flow for one transformer, and if there a substation transformer of reserve failure flow will be even less so in the calculation of the reliability of the substation transformer reliability may be unreported [3]. For substation «Krasnaya Zarya» $\omega_{ts} = 0.03 + 0.04 = 0.08$ failures / year; $K_{в2} = 0.03 \cdot 3 \cdot 10^{-3} + 0.01 \cdot 0.08 \cdot 10^{-3} = 0.1 \cdot 10^{-3}$; for substation Novoaleksandrovskaya $\omega_{ts} = 0.015 \cdot 2 + 0.03 + 0.01 = 0.07$ failures / year; $K_{в4} = 0.03 \cdot 8 \cdot 10^{-3} + 0.03 \cdot 3 \cdot 10^{-3} 0.01 \cdot 0.08 \cdot 10^{-3} = 0.34 \cdot 10^{-3}$; for substation «Razdolnaya» and «Grigoropolisskaya» $\omega_{ts} = 0.015 + 0.03 + 0.01 = 0.055$ failures / year; $K_{в6} = K_{в8} = 0.015 \cdot 8 \cdot 10^{-3} + 0.03 \cdot 3 \cdot 10^{-3} + 0.01 \cdot 0.08 \cdot 10^{-3} = 0.22 \cdot 10^{-3}$.

4. Found reliability radial transmission lines (I and II):

parameter flow sudden outages

$$\omega_I = \sum_{i=1}^{n} \omega_i = 0{,}027(14{,}8 + 24{,}1) + 0{,}04 + 0{,}07 = 1{,}16$$

failures / year.

$$\omega_{II} = \sum_{i=1}^{n} \omega_i = 0{,}027(19{,}7 + 22{,}9) + 0{,}055 \cdot 2 = 1{,}26$$

failures / year.

coefficient of downtime

$$K_{вI} = \sum_{i=1}^{n} K_{вi} = 0{,}027(14{,}8 + 24{,}1) 0{,}52 \cdot 10^{-3} + 0{,}1 \cdot 10^{-3} +$$

$$+ 0{,}34 \cdot 10^{-3} = 0{,}99 \cdot 10^{-3},$$

$$K_{вII} = \sum_{i=1}^{n} K_{вi} = 0{,}027(19{,}7 + 22{,}9) 0{,}52 \cdot 10^{-3} + 0{,}22 \cdot 2 \cdot 10^{-3} =$$

$$= 1{,}04 \cdot 10^{-3}.$$

5. Found capital contribution to network costs.

Capital expenditures will find using specific parameters [2]

$K_{pl110} = q_{pl110} L_{pl110} = 6{,}8 \cdot 100 \cdot 38{,}9 + 8{,}1 \cdot 100 \cdot 42{,}6 = 60958$ thousand Roubles.

The project budget a transformer substation according to Table 7 of Annex B [2] $K_{ts} = (126{,}4 + 256{,}1 + 64{,}9 + 109{,}4) \cdot 100 = 556800$ thousand Roubles.

The project budget of first variant grid transmission system with radial transmission feeder

$K_1 = K_{pl} + K_{ts} = 60958 + 556800 = 617758$ thousand Roubles.

6. The calculation of total operating expenses. We use the formula $C_y = C_a + C_o + C_p$

The investment costs

$$C_a = \sum_{i=1}^{n} K_i \frac{P_{ai}}{100} = 617758 \frac{6}{100} = 37065{,}5$$ thousand Roubles.

The maintenance expenses ($Q_{тп}$ и $Q_{вл}$ Annex B [2])

$C_o = p_o \kappa_1 = 5{,}9 \cdot 617758 = 34594{,}5$ thousand Roubles.

The cost of transmission losses.

Found cost of transmission losses in the network element according to the formula $c_z = \varphi_z + \psi_z / h_z$:

For overhead transmission line $c_{pl} = 79 + 327000 / 3600 = 169{,}8$ kopecks / kW · h;

For transformer substation $c_{ts} = 82 + 420000 / 3500 = 202$ kopecks / kW · h;

Annual costs transmission losses in overhead transmission line will find the formula [5]

$$C_{lpl} = \sum_{z=1}^{Z} (S_{pz} / U_{nom})^2 R_{0z} L_z \tau_z c_{plz} \cdot 10^{-5} = \left(\frac{2500}{110}\right)^2 \cdot 0{,}27 \cdot$$

$$\cdot 14{,}8 \cdot 3100 \cdot 169{,}8 \cdot 10^{-5} + \left(\frac{32000}{110}\right)^2 \cdot 0{,}27 \cdot 24{,}1 \cdot 3100 \cdot$$

$$\cdot 169{,}8 \cdot 10^{-5} + \left(\frac{2500}{110}\right)^2 \cdot 0{,}17 \cdot 19{,}7 \cdot 3100 \cdot 169{,}8 \cdot 10^{-5} +$$

$$+ \left(\frac{10000}{10}\right)^2 \cdot 0{,}17 \cdot 22{,}9 \cdot 3100 \cdot 169{,}8 \cdot 10^{-5} = 3652{,}8$$ thousand Roubles.

The cost of transformers losses (assuming $S_p = S_{nom}$):

$$C_{ts} = [(S_p / S_{nom})^2 p_k \tau c_k + p_x t_в c_x] 10^{-5} =$$

$$= 2(1^2 \cdot 22 \cdot 3000 \cdot 202 + 5{,}5 \cdot 8760 \cdot 202) \cdot 10^{-5} +$$

$$+ 2(1^2 \cdot 105 \cdot 3000 \cdot 202 + 26 \cdot 8760 \cdot 202) \cdot 10^{-5} +$$

$$+ (1^2 \cdot 80 \cdot 3000 \cdot 202 + 19 \cdot 8760 \cdot 202) \cdot 10^{-5} = 3475$$ thousand Roubles.

Final loss in a year

$C_p = C_{lpl} + C_{ts} = 3652{,}8 + 3475 = 7127{,}8$ thousand Roubles.

Total operating expenses in a year

$C_y = 37065{,}5 + 34594{,}5 + 7127{,}8 = 78787{,}8$ thousand Roubles

7. Find the supply-interruption cost

$У = y_0 W_{le}$, $W_{le} = \omega_\Sigma T_в P_{calc}$.

The calculations revealed that $\omega_\Sigma = 2{,}42$. $T_в = 4{,}4$ h and $P_{calc}$ equate 37 000 kW, as the total full power of transformer substation is 47000 kV · A.

$W_{le} = 2{,}42 \cdot 4{,}52 \cdot 37000 = 404747$ kW · h.

Taking the unit cost of supply-interruption cost $y_0 = 30$ Roubles /kW · h find

$У_1 = 30 \cdot 404747 = 12141{,}6$ thousand Roubles.

8. Total annual costs of operating the electricity system of the first embodiment

$C_{ta1} = C_y + У_1 = 78787{,}3 + 12141{,}6 = 90928{,}9$ thousand Roubles.

We define operational reliability index and economic performance for the second variant if there is a reserve power line girt between transformer substations «Novoaleksandrovskaya» and «Grigoropolisskaya»

1. The operational reliability index for radial power network [3].

With parallel connection of elements flow outages determined by the formula

$\sum F_m = 157{,}1 + 142{,}8 + 129{,}8 + 118 = 547{,}7$ failures / year.

2. Define the capital cost of the power supply system by the second variant

The cost of building a power supply system will be determined by the value of the radial power network plus girt.

$K_2 = 617758 + 8{,}1 \cdot 100 \cdot 24 = 637198$ thousand Roubles.

Exceeding capital costs to the first variant

$\Delta K = K_2 - K_1 = 637198 - 617758 = 19440$ thousand Roubles.

3. The operating cost:

investment costs

$$C_a = \sum_{i=1}^{n} K_i \frac{P_{ai}}{100} = 637198 \frac{6}{100} = 38232$$ thousand Roubles.

maintenance expenses

$$C_o = p_o K_2 = \frac{637198 \cdot 5{,}9}{100} - 37594{,}7$$ thousand Roubles.

Yearly costs to cover the electricity losses in the network.

Since the girt is partitioned only activated during emergency and planned repairs, loss of electricity in the network element can be neglected $C_p = 7127{,}8$ thousand Roubles.

The total amount of the annual operating costs by the second variant of power supply

$C_{ao} = 38232 + 37594 + 7127{,}8 = 82954{,}5$ thousand Roubles.

4. The supply-interruption cost

$У_2 = y_0 W_{le} = 30 \cdot 2{,}06 \cdot 10^{-3} \cdot 4{,}52 \cdot 47000 = 10{,}3$ thousand Roubles.

5. Total annual operating costs, taking into account the supply-interruption cost by the second variant

$C_{ta2} = C_{ao} + У_2 = 82954{,}5 + 10{,}3 = 82964{,}8$ thousand Roubles.

6. The annual economic effect of modernization

$C_{ee} = C_{ta1} - C_{ta2} = 90928{,}9 - 82964{,}8 = 7964$ thousand Roubles.

Found overall indicators compared variants power line

1. Net present value (NPV)

Net present value over 10 years of the project at the rate of discount $E = 0.1$

$$NVP = \sum_{m=0}^{10} \frac{C_{ec}}{(1+E)^m} - \Delta K = \sum_{m=0}^{10} \frac{7964}{(1+0{,}1)^t} - 19440 = 29886{,}6$$

thousand Roubles.

2. Internal rate of return (IRR) of project

The method of successive substitutions define the internal rate of return (Table 1)

Table 1 – reliance NPV от E

| E | 0,1 | 0,2 | 0,3 | 0,35 | 0,4 |
|---|---|---|---|---|---|
| NPV, thousand Roubles. | 29495,4 | 13948,9 | 5180,9 | 2182,5 | –218,3 |

As seen in Table 1, the project IRR in the range of (0.35-0.4). Refine it value by an iterative method.

$$E_{IRR} = E_1 + \frac{NVP(E_1)}{NVP(E_1) - NVP(E_2)}(E_2 - E_1) = 0{,}35 +$$

$$+ \frac{2182{,}5}{2182{,}5 - (-218{,}3)}(0{,}4 - 0{,}35) = 0{,}395.$$

Thus, the profitability of the project is 39,5 %.

4 The payback period. To calculate the payback period define the reduced annual costs over the life of the project

$$F_1 = \frac{7964}{(1+0{,}1)^1} = 7240$$ thousand Roubles.

$$F_2 = \frac{7964}{(1+0{,}1)^2} = 6581{,}8$$ thousand Roubles.

$$F_3 = \frac{7964}{(1+0{,}1)^3} = 5983{,}5$$ thousand Roubles.

$$F_4 = \frac{7964}{(1+0{,}1)^4} = 5439{,}5$$ thousand Roubles.

$$F_5 = \frac{7964}{(1+0{,}1)^5} = 4945$$ thousand Roubles.

$$F_6 = \frac{7964}{(1+0{,}1)^6} = 4495{,}5$$ thousand Roubles.

$$F_7 = \frac{7964}{(1+0{,}1)^7} = 4086{,}8$$ thousand Roubles.

$$F_8 = \frac{7964}{(1+0{,}1)^8} = 3715{,}3$$ thousand Roubles.

$$F_9 = \frac{7964}{(1+0{,}1)^9} = 3377{,}5$$ thousand Roubles.

$$F_{10} = \frac{7964}{(1+0{,}1)^{10}} = 3070{,}5$$ thousand Roubles.

For the first 2 years the amount of economic benefit will be reduced

$\sum_3 F_m = 7240 + 6581{,}8 = 13821{,}8$ thousand Roubles, which is less than the value of additional capital investments $\Delta K = 19440$ thousand Roubles.

Within 3 years of the project the amount of economic benefit will be reduced

$\sum_{4} F_m = 7240 + 6581{,}8 + 5983{,}5 = 19805{,}3$ thousand Roubles, that the large additional capital investments. Thus, the payback period is within 2-3 years. To refine its location use the above recommendations

$T_{pb} = 2 + \frac{19440 - 13821{,}3}{5983{,}5} = 2{,}94$ year.

The results show the effectiveness of the upgrading of electricity networks.

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# TECHNO-ECONOMIC MODEL OF COMPARATIVE ASSESSMENT OF EFFICIENCY OF RESOURCE INCREASE OF FRICTION PAIR «DISK – GASKET» OF PNEUMATIC SEEDING MACHINE

Pneumatic vacuum seeder-cultivators «Millerovoselmash», «John Deere», «MashioGaspardo», «MaterMacc», «Monosem», «Kunh» and others, both domestic and imported, with disk sowing attachment are most widely used for planting row crops. Planting attachments of lower position provide precise sowing of sunflower, corn, sugar beet and other row crops. However due to rapid wear of replaceable parts of a metering disk and a gasket there is a disturbance of seeding and observed thinned and thickened shoots, which leads not only to a decrease in crop yield but also to overspending of seeds. Precautionary replacement of metering disks and gaskets leads to underutilization of pledged resources and increase in material costs of operation especially for imported planters. Therefore, to increase the efficiency of the friction pair «disk – gasket» it is necessary to ensure the wear resistance of working surfaces of friction pairs «disk – gasket» which should be 1.5-2 times greater than a serial friction pair has. From this perspective, we have proposed a number of technical solutions that meet stated objectives, suggested ways to conduct a comparative assessment of economic costs depending on the operating time as compared to serial metering disks and gaskets. The use of reinstallation of a disk to another working position and saturation of a gasket with an anti-friction material improves resource of friction pair «disk – gasket», reduces the multiplicity of operations related to repair, and eliminates the costs associated with the loss of production.

**Key words:** seed disk, gasket, wear, anti-friction material, durability, seeding set, wear of pair of friction.

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**Pneumatic vacuum seeder-cultivators «Millerovoselmash», «John Deere», «MashioGaspardo», «MaterMacc», «Monosem», «Kunh» and others, both domestic and imported, with disk sowing attachment are most widely used for planting row crops. Exchangeable metering disks provide accurate sowing of sunflower, corn, sugar beet and other row crops [1].**

Planting attachments of lower position due to lack of seed hoses improve the uniformity of distribution of seeds in a row but operate in the area of dusty air with increasing concentration of powdered abrasive which gets into the friction zone of metering disks and gaskets. Since planting crops is carried out in short agrotechnical terms, almost 100% reliability of seeding-machines and their components is required, hence it is allowed to use units with worn parts including metering disks. It results in disturbance of the process of planting and emergence of thinned and thickened shoots, which leads not only to a decrease in crop yield, but also to overspending of seeds. Precautionary replacement of metering disks and gaskets leads to underutilization of pledged resources and increase in material costs of operation especially for imported planters.

Metering disks and gaskets for planting row crops produced by modern companies operate with various outputs before replacing and have different selling cost. Criteria for culling metering disks and gaskets are not determined in operating instructions for seeders. At the same time there are only approximate data on the frequency of replacing them received for specific designs of seeding machines operating in certain production and climatic conditions and with different annual load of

seeders. Some dealer firms and manufacturers justify the high selling cost by large enough projected resources. On the other hand, manufacturers of cheaper metering disks and gaskets for planting row crops assure undoubted effectiveness and likeness to original spare parts, even though they have a lower production before replacing them. Selecting metering disks and gaskets only by their resources does not allow to reliably determine the effectiveness of these metering disks and gaskets. Therefore, different approaches are used for comparative evaluation of effectiveness of different types of metering disks and gaskets [2].

Prerequisite of reliable assessment of a metering disk and a gasket of different manufacturers is reliability of implemented technological process of planting crops with the index of at least 0.97 in all compared cases. The compliance with agro-technical requirements for the actual depth of planting and seeding rates may be used as the main criterion for the reliability index of the process of planting row crops.

Other condition for an objective analysis of compared options of metering disks and sealing materials is that the crop is produced on the same soil types, with the same units, by the same qualified mechanic.

Researchers agree that the wear of the units is proportional to the duration of their service life, with the exception of a brief warm-up period and the period of accelerated wear at the end of service life. The latter period, according to many researchers, is not observed at all for a number of parts. In this connection, the line characterizing the wear is often considered as a straight line for simplicity of construction.

An important scientific and technical challenge to increase the efficiency of use of agricultural technology is the development of activities and ways to increase resources and reduce time spent on the restoration of operability of units and parts. This problem is most acute during planting row crops which takes place in short agrotechnical terms and is associated with biological characteristics of seed germination of plants [3].

To develop ways of increasing the resources of the friction pair «disk – gasket», the life cycle of existing serial metering disks and gaskets will be considered. Changing the thickness of a metering disk and a gasket before reaching their limit values are graphically represented as curve 1 (Fig. 1).

In the initial period of time $T_P^H$ operation occurs at a constant rate of wear $U_{изн}$ during this time. Then, when the wear $h_в$ (point A) is reached, the process of wear is intensified due to increased vibration and continues as long as the thickness of the metering disk and the gask $h_{пр}$ et does not reach the maximum permissible value . Period $T_P^{ПП}$ characterizes the work of sowing attachment which does not comply with agro requirements [4].

Service life of a serial seeding set can be determined by the formula

$$T_{СР} = T_P^H + T_P^{ПП}. \quad (1)$$

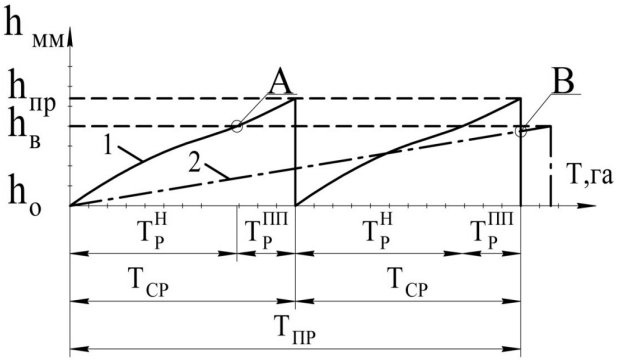


**Figure 1 –** Scheme for serial and proposed lifetime of the friction pair «disk – gasket»

Achieving this specified limit may be regarded as a failure of the friction pair «disk – gasket» because in this period overrun significantly increases and missing of seeds is observed, and further operation is inappropriate for economic reasons [5]. Thus, the time period $T_P^H$ can be regarded as the main stage of the life cycle of the friction pair «disk – gasket» upon completion of which it is necessary to replace them. Total value of wear of the friction pair $h_в$ of a seeding set should be determined to control and scientifically validate reasonability of this period of operation $T_{ПР}$.

Service life of the proposed seeding set with an increased resource can be calculated by the formula

$$T_{ПР} = K_{УР}\left(T_{СР} - T_P^{ПП}\right), \quad (2)$$

$K_{УР}$ – magnification factor of the resource.

Comparative assessment of metering disk and sealing materials is carried out using technical-economic indicator $Э_Л$ which is the ratio of total costs $З_{ОБЩ}$ and performance of a given amount of work $T$ and is calculated by the formula

$$Э_Л = \frac{З_{ОБЩ}}{T}. \quad (3)$$

Total costs for implementation of a given amount of work (Fig. 2) can be represented by a multiplicity of replacement of serial sets K and purchase costs, delivery and wages for replacing a metering disk $З_{ДД}$ and a gasket $З_{УП}$, spent funds related to the loss of production as a result of overseeding and underseeding of seeds $З_{ПП}$ in the form

$$З_{ОБЩ}^C = K \cdot \left(З_{ДД} + З_{УП} + З_{ПП}\right). \quad (4)$$

The need to replace metering disks and gaskets was determined by the formula

$$K = \frac{T}{T_{СР}}, \quad (5)$$

$T_{СР}$ – average values of the resource of a seeding set, ha.

Placing formula (5) into (4) we obtain

$$З_{ОБЩ}^C = \frac{T}{T_{СР}} \cdot \left(З_{ДД} + З_{УП} + З_{ПП}\right), \quad (6)$$

As noted above, the resource of a seeding set is determined by intensity of wear of working surfaces of the related parts.

The ideal option to increase the effectiveness of work of the proposed friction pair can be considered an increase in one normal operating period to operating period corresponding to the seasonal volume of work or more, but multiple to it in order to avoid downtime during planting. This development of the state of the working surfaces of the friction pair «disk – gasket» is described with the curve 2 in Figure 1. However, due to different seasonal load under real production conditions this value cannot be accepted as an objective characteristic for replacement of a set [6].

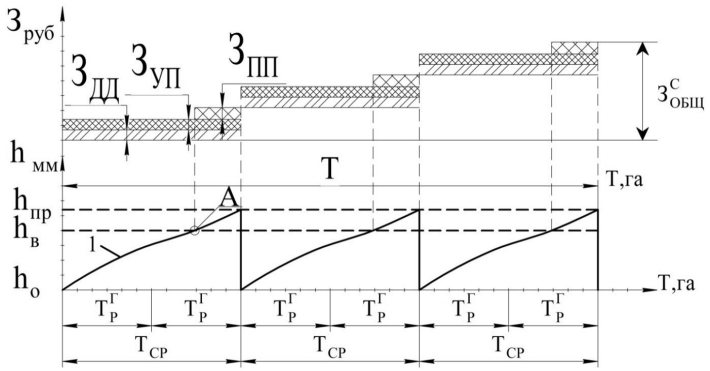


**Figure 2 –** Techno-economic model of implementing a given volume of seeding row crops and total costs for a serial seeding set

Analysis of the given above leads to the conclusion that in order to increase the efficiency of this set it is necessary to look for alternative ways to solve this problem. One should take into account the seasonal workload of a seeding attachment as well as the fact that the proposed technical solutions should be implemented both at the production stage and at the stage of repairs since the farms at the moment already have quite a number of domestic and imported row planters.

Consequently, to implement the proposed approach to improve the effectiveness of work of the proposed friction pair «disk – gasket» it is necessary to ensure the wear resistance of working surfaces of friction pairs «disk – gasket» which is 1.5–2 times greater than a serial friction pair has [7].

From this point of view, we have proposed a number of technical solutions that meet their stated objectives (Fig. 3).


**Figure 3 –** Areas of resource increasing of the friction pair «Disk – gasket» of sets row of sowing drills

To maintain a healthy state by the first method a serial dispensing disk and the gasket operatetillwear $h_в$, followed by reinstalling the agitator flags to the new working position of the disc with replacement of gasket [8–10].

Costs associated with the work to increase the share of the first proposed method (Fig. 4) can be identified as:

$$З_1^П = З_{ДД} + 2З_{УП} + З_{ПЕ}, \quad (7)$$

where $З_{ПЕ}$ – the cost of reinstallation of agitator flags to another working position, rub.

Expressing all of the costs for the use of the first method as a fraction of the cost of acquisition, delivery and wages by replacing the dosing disk and gasket $З_1^П$, we obtain:

$$З_1^П = З_{ДД} \cdot (1 + 2K_{УП} + K_{ПЕ}), \quad (8)$$

where $З_{ДД}$ – the cost of purchasing, installing and salaries when replacing the dosing disk, rub.;
$K_{УП}$ – coefficient taking into account the increase in value of 0.2 ... 0.25 of the cost of the purchase and replacement of seed set when purchasing a gasket;
$K_{ПЕ}$ – coefficient taking into account the increase in value of 0.05 ... 0.1 of costs for the purchase and replacement of metering disk when performing permutation flags agitator drive to another working position.

Costs for the purchase, installation and salaries by replacement of seed set we obtained by a formula:

$$З_{ВК} = З_{ДД} + З_{УП}. \quad (9)$$

After conversion, we get the expression

$$З_{ОБ1}^П = З_{ВК} \cdot K_{ОБ1}, \quad (10)$$

where $K_{ОБ}$ – generalized coefficient taking into account the increase in the cost of the application of complex operations to improve resource.

Knowing the coefficients increasing the cost of ongoing method of increasing longevity, you can get the value of the generalized coefficient within $K_{ОБ1}$ = 1.45 ... 1.6.

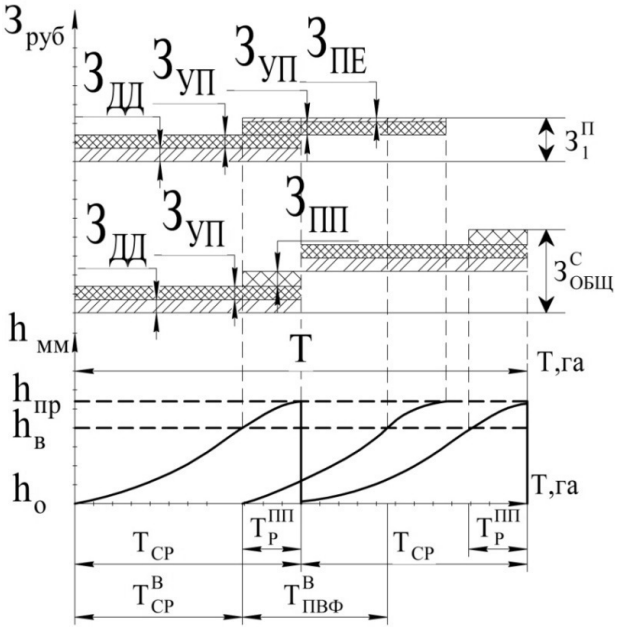


**Figure 4 –** Technical and economic model of the overall costs of implementation of predetermined volume seeding row crops when reinstalling the agitator flags on the metering disk (method 1)

Please note that you need to perform operations on the life extension of the metering disk and gasket, and replace them when they reach defect wear in order to avoid the additional costs associated with the loss of seed as a result of reseeding and insufficient sowing [11].

One of the promising areas to increase the durability of the friction pair «disk –gasket» is the saturation of the protrusions gasket antifriction lubricant in the area of contact [12].

The solid lubricant produces the thinnest protective film penetrating into existing micro pores on the surface of sliding parts, reduces plastic deformation of the material, promotes redistribution of pressure and thus provides a favourable running surfaces, thus increasing the product life, to reduce the loss of working time because of the fault and higher productivity (fig. 5).

The most famous of the short list of solid lubricant is graphite – black mineral with a greasy luster, oily to the touch. The antifriction material is graphite, due to such advantages as low coefficient of friction, good adhesion to lubricated surfaces, a small force of destruction when it is used in the solid state, low cost, availability, etc. It is found in nature, and is also produced in electric furnaces. The synthesized product is at least 99% consists of pure carbon. The main advantage of the graphite is perhaps that it forms a strong film on the friction surfaces (Figs. 6–7).


**Figure 5 –** Antifriction lubricants and coating for units of dry friction

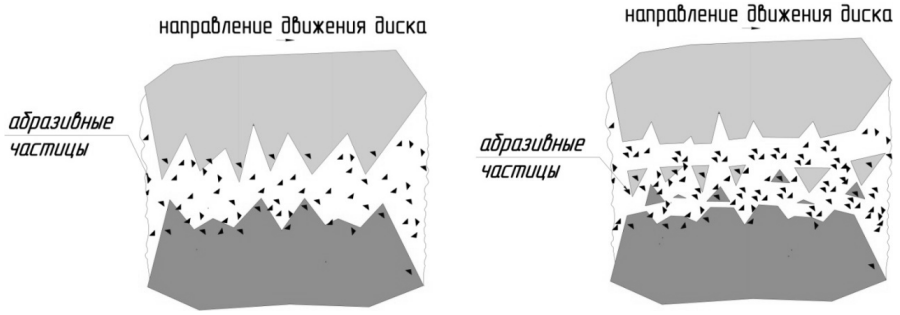


**Figure 6 –** The scheme of operation without lubrication

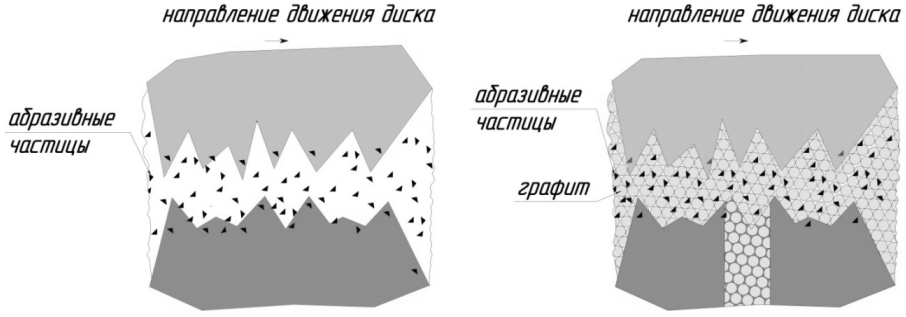


**Figure 7 –** The scheme of operation with a solid lubricant

Subsequent contact of the pair of friction occurs with graphite surfaces, and as a result, the friction coefficient f is reduced to 0.02 ... 0.05, and therefore increases the durability of the connection. We got the patent for the invention № 2485749 [13].

The next step of maintaining an operable state is a permutation of the sowing disk to another working position. This step is realized after the disk surface in contact with the gasket, reaches the wear limit $h_в$. However, this requires you to reinstall agitator flags on unworn surface of the disk, which is economically more advantageous than buying and installing new metering disc. After reinstalling the disk into another operating position it mates with a new gasket, saturated with solid lubrication points, thus extending its life by more than 2 times (Fig. 8).

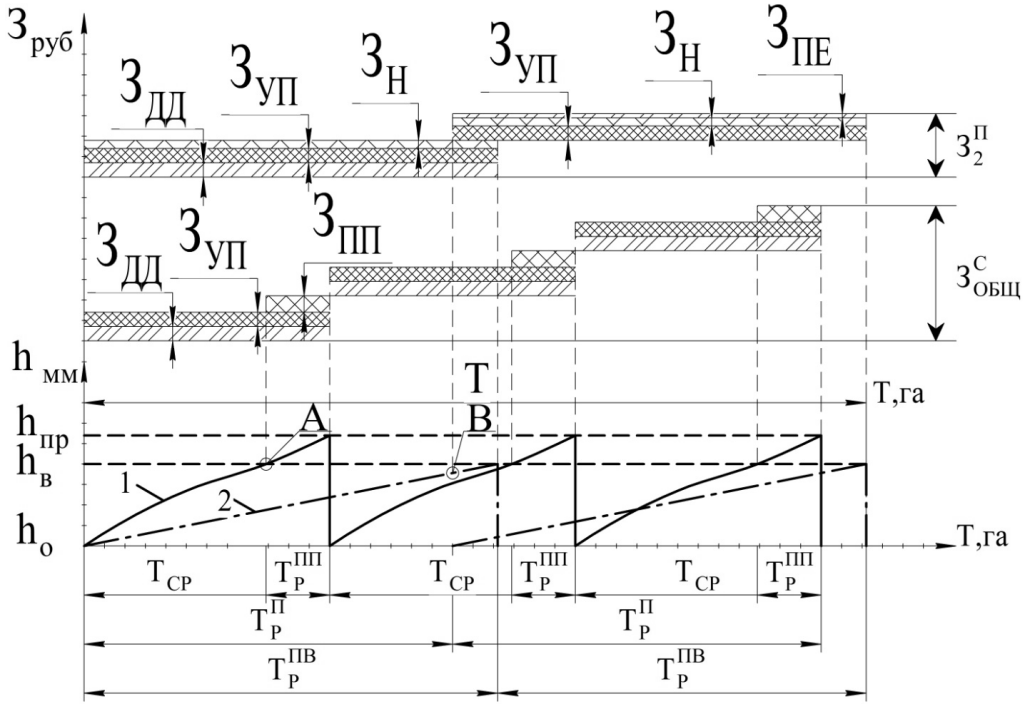


**Figure 8 –** Technical and economic model of the overall costs of implementation of predetermined volume of row crops seeding using 2-nd method

The cost to increase the duration of the seed set, made in the off-season in the sub-step 1 can be identified as:

$$З_2^{П1} = (З_{ДД} + З_{УП} + З_Н) \quad (11)$$

where: $З_{ДД}$ – thecostofpurchasing, deliveryandsalarie swhenreplacingthedosingdisc, rub.;
$З_{УП}$ – the cost of purchasing, delivery and salaries when replacing the gasket, rub.;
$З_Н$ – thecost of saturation gasket with anti-friction material, rub.

The costs related to the rearrangement of agitator flags and followed by saturation of the sealing material in the sub-step 2, can be determined by the expression:

$$З_2^{П2} = (З_{УП} + З_Н + З_{ПЕ}) \quad (12)$$

where $З_{ПЕ}$ – the cost of a rearrangement of agitator flags in another working position and hardening, rub.

Then the overall costs associated with increased seed mass resource set according to the second method, can be defined by the expression:

$$З_2^{П} = З_{ДД} + 2З_{УП} + 2З_Н + З_{ПЕ} \quad (13)$$

Expressingallthecomponentsofthetotalcostofusingthesecondmethod, asafractionofthecostofacquisition, deliveryandsalariesbyreplacingthedosingdiskandgasket $З_2^{П}$, weobtain

$$З_2^{П} = З_{ДД} \cdot (1 + 2К_{УП} + 2К_Н + К_{ПЕ}), \quad (14)$$

where $К_Н$ – coefficient taking into account the increase in value at 0,025 ... 0,075 from the cost of purchasing and replacing the dosing diskwhen the saturation of the antifriction sealing material composition.

We get the expression

$$З_{ОБ2}^{П} = З_{ВК} \cdot К_{ОБ2}, \quad (15)$$

where $К_{ОБ2}$=1,5...1,75.

Accordingtopreliminarydata, theuseoftheproposedcomplexworkperformedtoimprovethedurabilityoftheseedsethastheadvantageofwinningthecostsoflossofproductionandreplacedserialmultiplicityofmeteringdisksandgasketstoculling.

$$\Delta З = К \cdot З_{ВК} + К \cdot З_{ПП} - К_{ОБ} \cdot З_{ВК}, \quad (16)$$

Substituting the values of expression and simplifying, we obtain

$$\Delta З = З_{ВК} \cdot (К - К_{ОБ}) + К \cdot З_{ПП}. \quad (17)$$

Thustheuseofmethodsreinstallationdisktoanotherworkingpositionandsaturationgasketanti-frictionmaterialimprovesresourcefrictionpair «disk-gasket»toreducethemultiplicityofoperationsrelatedtotherepairandeliminatethecostsassociatedwiththelossofproduction.

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# MODERN WAYS OF RELIABILITY AND SAFETY INCREASE OF CONNECTIONS IN COMBINE HARVESTERS

Faults and downtimes of combine harvesters in operation conduct to considerable financial losses. One of the major reasons of idle time of this technics is failure safety connections on which share to have to 10,5 % from the general number of refusals. The basic lack of this connection is that safety the groove is the concentrator of pressure reducing fatigue durability of details, leads to asymmetric deformation of a shaft and a nave. Deterioration of separate details motionless safety connections occurs, basically, because of the gradual superficial destruction of a material of details accompanied by branch of particles, change of the sizes, the geometrical form and properties of blankets of a material. Presence of backlashes in connection «plug-shaft» influences and reliability of belt drives as occurs their constants pulsing loading, off loading and change of interaxal distance with variable frequency because of procollarssafety with a nave. Cyclic micromovings lead pullings a belt during work and loss of its working capacity. The declared resource of belts becomes in tens times less.

For real conditions of operation of combine harvesters the most effective is installation instead of existing safety connections where it technical requirements allow, demountable nave for installation of a rotating element on drive to a shaft which can be made in the form of the repair complete set with sufficient accuracy in repair shops of economy. Use of the offered modernized design mobile safety connections first of all eliminates the main cause of a failure – relative radial moving of contacted details of interface, and also allows to pull together a nave and a shaft, not creating ekscenritetthat, in turn, will increase a resource of connections.

**Key words:** combine harvester, safety connection, reliability, refusal, a resource.

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**Combine harvester is the most complex farm machine. It can perform several different operations at once.**

In present day situation when there is a decrease in volumes of agricultural production and aging of the farm vehicle fleet, the issue of effective use of domestic and foreign vehicles becomes especially acute. Much attention is paid as well to the problem of increase in quality and reliability of the agricultural machines, as domestically as foreign made.

The problem of poor efficiency of the farm vehicle fleet is connected with low profitability of the majority of agricultural enterprises of the country, the lack of methodological and software tools that could foster and create a rational organization of the use of domestic and foreign agricultural machinery taking into account the diversity of conditions and variants of functioning of the farm business enterprises.

Faults and downtimes of combine harvesters lead to considerable financial losses. One of the major reasons of downtime of these machines is the breakdown of keyed connections, which make up 10.5 % of the total number of machinery faults [1].

According to previous observations [1, 2] if there is a backlash in the connection «shaft – sleeve», during the rotation the height of the contact of the hub groove with the key will deviate from the calculated depending on the rotation angle. Therefore, the service life of the keyway will be determined by the backlash in connection and rotation angle of the hub and shaft [3].

The main disadvantage of this connection is that the keyway is a strain concentrator that leads to de-

crease of the strength of mechanical parts and to an asymmetric deformation of the shaft and the hub [2].

According to the recommended standards of accuracy only in 10 % of cases of such a mechanical connections a transient fixation is recommended and in most cases it is a tight fixation which significantly degrades the repair works and assembly-disassembly operations.

The analysis of options of fixed connections in the various drives of combine harvesters have been carried. It has showed that during the regulation of the marginal backlashes and tightness in 85 % of cases the fit of the pair «shaft – sleeve» is assigned with a backlash [3]. This type of connection is chosen with the aim to reduce the effort of the pressing – unpressing and reduce the complexity of repair works.

The wear of some parts in fixed keyway connection happens mainly due to the gradual destruction of the surface material of the parts, accompanied by separation of particles, changes in the size, geometrical forms and properties of surface layers of the material.

Backlashes in the «sleeve-shaft» connection affects the reliability of the transmission mechanism, as their constant pulsating loading, unloading and change of axle spacing with variable frequency because of cranking the key with the hub. Cyclic micromovings lead to stretching of the belt during the work and loss of its efficiency. The service life of the belt becomes ten times shorter. For example, according to GOST 26379-84 service life of the belts must not be less than 350 hours, but in practice it often does not exceed 100-150 hours and sometimes less. Such dynamics in work is similar to chain drives as well. Pulsating loadings spread on the bearings and cause additional micro – and macrodistractions with variable intensity.

On the basis of experimental studies and timing of work of harvesting equipment based on the methodology 108.1 OST-99, the number of faults in mechanical drives according to their elements is presented in Figure 1.

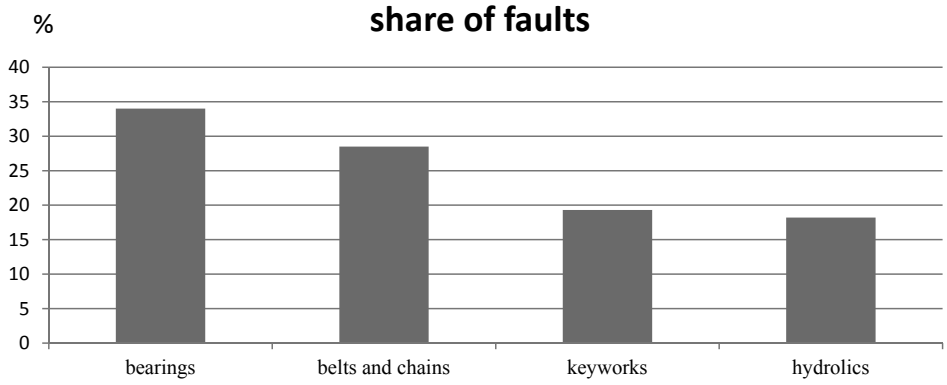



**Figure 1 –** Average values of the distribution of faults in mechanical drives

The largest share of faults occur in the bearings – 34 %, belts and chain transmission – 28.5 %, which confirms the negative impact of backlashes in the keyway on the faults of the other drive elements.

There are following methods to increase the reliability of fixed parts (Fig. 2).


**Figure 2 –** Methods of improving the reliability of the keyway

To solve the problem of the backlashs eliminating in such the connections the use of adhesive compositions, such as Permabond HH-167, TL Chemence 20G, LOCTITE – 603, Bearing mount for Wom Parts, Anaterm-103, has become rather widespread recently. But in practice it is quite difficult and almost impossible to achieve uniform distribution of the adhesive layer on the whole contacted surface. As the result of such operations with adhesive composition one may have the imbalance and the difficulty of carrying out some repair works.

On the other hand, any design similar to the mechanical drives of the combine harvesters is supposed to have a backlash in the movable connection to ensure the operational effectiveness of the conjunction and the technical functioning. Therefore, the

use of transient fixation and fixation with an interference fit in this case is unacceptable[4, 5].

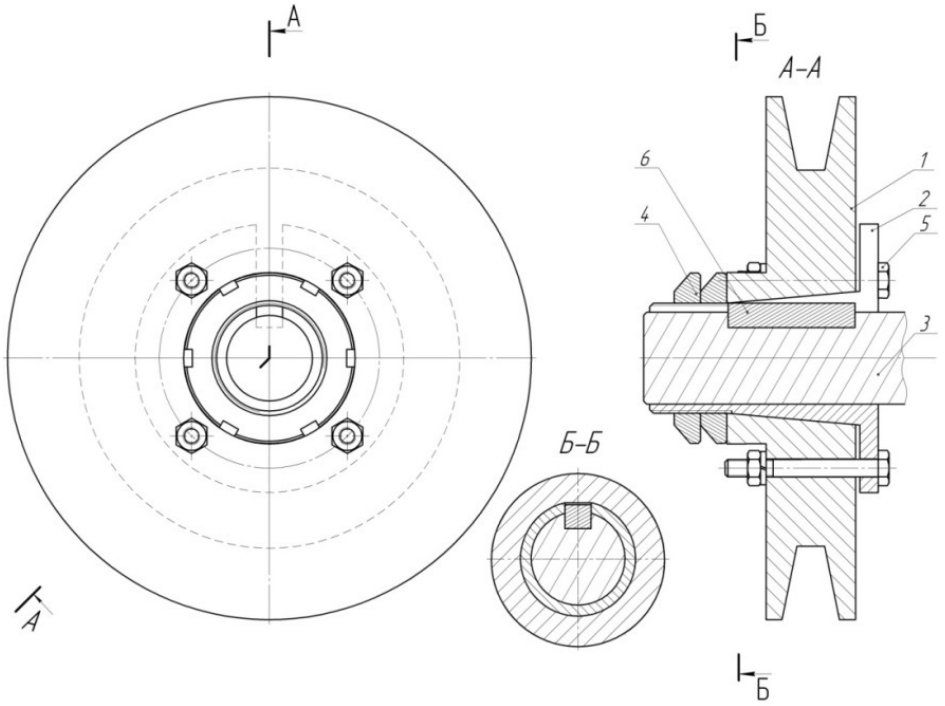
The main way to increase efficiency of fixed keyways is the elimination of backlashes [6, 7].

Having examined the available devices and models of the keyways, we decided to develop a model that meet all the demands that are required for optimal and long-term operation [8, 9]. There are two ways to implement this idea: for new parts and to restored ones.

In order to remove the cyclical change in the velocity of the contacting surfaces of the keyway and the hub, we intend «to tight» the details of the problematic connections on the principle of «double dovetail» (RU 86682). This design can be used both in fixed and in mobile connections, for example in the hub of a pneumatic beater PCM.10.01.15.609 A and its variators. But this connection has a number of constructive restrictions – it may be implemented only on the output shaft. Moreover, the proposed technical solution may be implemented only at the manufacturing plants, where equipment can provide the required accuracy in manufacturing of keys and keyways of the hub and shaft [10].

The method of tight connection of «shaft-sleeve» (pseudo-slotted connection) (RU 2428295) means the creation of some rectangular solid sectors on the shaft [11]. The assembly of such connections should be done with some tightness, providing the pushing of the solid sector of shaft into appropriate surface of the sleeve and that forms pseudo-slotted connection. But it should be noted that this constructive solution has high labor intensity, it is not easy to achieve a strict form of hardened sectors, and while the disassembly it is necessary to use a special device that significantly reduces the maintainability of the connection.

An installation of the removable hub for mounting the rotating element on the drive shaft (RU 2402701) seems to be the most optimal for real operating conditions of combine harvesters (Fig. 3). It may be made in the form of a repair kit [12 – 15]. It should be noted also that there are some restrictions on the installation of a removable hubs, which cannot be applied in the movable joints. A repair kit should reduce the recovery time of the working state of the connection.




1 – pulley rim ; 2 – conical slotted hub; 3 – drive shaft; 4 – clamping nuts;
5 – clamping screw connection; 6 – keyway

**Figure 3 –** Scheme of the introduced upgraded connection

To achieve the reliability of the upgraded fixed conjunction it is necessary to provide:

– necessary rigidity, i.e. a high resistance to elastic deformations after the highest loads to eliminate the unacceptable deformations interrupting normal operation of the combine harvesters;
– adequate structural strength with all attached permanent and cyclic loads, including periodic overloads, with regard to possible changing the operating mode of the drive during the operation of the harvester;
– working stability in time due to the resistance to permanent deformations and wear of the bearing surfaces from working effects throughout the lifespan.

To use low-carbon steel of ordinary quality is unacceptable in making upgraded fixed conjunctions.

It is advisable to use medium carbon steel (40, 45, 40, 45X, 40XH, etc.), hardened with surface hardening with subsequent low from the start, namely, Steel 45 and Steel 40XH.

Thus, first of all, using the proposed upgraded model of movable keyway connection eliminates the

main reason of faults in operation – relative radial displacement of the contacted parts, and also allows to pull the hub and shaft without generating eccentricity which, in its turn, will increase the service life of connections, mechanical gears, and will save money by reducing the number of repair works.

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**Lubov F. Maslova**

# GLOBAL CLIMATE CHANGE AS A THREAT TO HUMANITY

The analysis of climate emergency situations has been done. For many centuries, human environment has been slowly changing its appearance. Rivers have become shallow, lakes have desiccated, glaciers have been melting. Climate has been changing on the Eurasian continent. Scientists believe that natural emergency situations will become more frequent in the foreseeable future. Progress development and climatic changes are supposed to blame on this.

**Key words:** global climate change, heat wave, rain showers, natural disasters, apocalypse

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**Atmospheric, river and oceanic pollution, deforestation, degradation of agricultural lands nowadays have raised global concern. Non-renewable recourses deposits demanded to support the existence of rapidly growing Earth's population are being under threat of exhaustion. The use of new sources of energy occurred to be linked to deadly life hazard. A tremendous scientific concern is going up. In 2015 capricious nature influenced people around the globe. The forthcoming winter is going to be the hottest in the whole modern world history. Temperature measurements have recently broken the records. Meteorologists say it is only beginning. Abnormal natural situations and disasters do not occur twice in the same region. In 2010, when woods and turfaries in Russia were on fire and the sky was covered with smog, in the opposite side of the world in South America and Thailand were dying of exposure to cold. Multiple experts, speaking about the possibility of global catastrophe, suppose that probability its happening in the 21 century approaches 50 %.**

In the years coming meteorologists forecast the most unbelievable development scenarios and they could be divided into two groups. Definite apprehensions are caused that the humanity either in facing ice apocalypses, or the global deluge. Possible result for the Earth might either freeze because of extremely low temperature or sink due to its rise.

The climate on Eurasian continent is going on to change. The possibility is seeing that in some hundreds of years our cold country as well as the whole Europe will turn into tropics. Scientists declare that this is probably connected with the fact that in Western Europe the ozone layer was destroyed dramatically. When this occurs, through the abnormality (ozone hole) extra ultraviolet radiation passes that heats the over ground air. The atmospheric pressure falls and this creates pressure gradient between European and African latitude. In Pakistani provinces due to the abnormally hig h temperatures more than 1,000 people died over the last month. Summer heat wave in India up to 50 degrees centigrade heat turned out to be lethal for nearly 2.5 thousand people. They died from heat strokes. Many ponds dried up. America didn't avoid the heat waves as well. In Iowa, the thermometer rose above 40 degrees Celsius. Sunshine quickly spread to Michigan, Florida, etc. to the territory, which is home to almost half of the US population. This summer the heat wave there killed 20 people. Every year, more than 150 people die from the high temperatures in the United States.

Hellish heat in 2015 was in many different parts of the Earth. According to meteorologists, the climate on our planet is getting warmer, and because of heavy rains in tropics, the rivers overflow and turn the cities into real lakes. That's what happened in Cannes that has never been the tropics and or an island in the ocean.

At the junction of ozone anomalies dangerous meteorological phenomena: cyclone, sleet, rain showers occur. Ozone means cold. Ozone hole is warmth. The positive anomaly represents the volume of air that has been cooled down, cold with high pressure, and under a negative anomaly of ozone air is warmed and with low pressure and in the place where they meet, there is a levelling of gradients: swirls, precipitation.

According to scientists such anomalies will occur more frequently and some island nations, such as Britain, Japan in a few decades might just go under water. Floods will reach even those places where they have never been. Tropical storms and showers will pass through Alaska and even Russia. Some areas in the Far East such as Kamchatka, Magadan, Khabarovsk can be washed away from the face of the earth.

In late summer 2013 a powerful flood struck Komsomolsk-on-Amur, Vladivostok, Blagoveshchensk that led to the truly catastrophic circumstances. The region was almost completely flooded. About three hundred towns and villages in Khabarovsk Territory, Amur region, Jewish autonomous region were un-

der water. The area of 400 000 km$^2$ of land, which is more than modern Germany was flooded. 135 thousand people were affected by the impact of elements. In 2012, the Krymsk in an instant a roaring stream of water pours out. For the first time in 70 years the volume of precipitation that fell in the mountains was like this. In two days in Krasnodar region the six-month rainfall fell. Near Krymsk a natural dam constrained by banks and a bridge was formed. In other words, a natural dam was formed, which, in the end, could not stand the pressure, and the city was flooded with roaring stream. The natural disaster swept Gelendzhik and Novorossiysk. The flooding took a heavy toll, almost two hundred people. Totally the emergency affected 34 thousand people, destroyed more than 7 thousand houses. Meteorologists consider that such catastrophic situations due to heavy rains or melting snow in our country will happen more and more often.

So far, the Far East went under water and Buryatia and Siberia were choking in smoke from the tourists' non-extinguished fires, which escalated into forest fires. Not only is it true to blame the human irresponsibility, but also heat waves. Forests and villages burnt, animals and birds were burnt alive. In September 2015 the scarlet flames heavy curtain prolong the taiga near the ancient water reservoir. Up to 1.5 000000 hectares of land burnt in July – August in Buryatia.

In some parts of the Earth it becomes more humid because of rains, and somewhere on the contrary drier. At the beginning of the year, Siberian scientists took measurements of water levels in Lake Baykal and found that it fell to 40 cm below the minimum acceptable mark. If even the legendary Baikal proved to be powerless against global climate change on the planet, what could we speak of smaller rivers? In Astrakhan reserve because of the snowless winter and dry spring Volga became so shallow that scientists started talking about an environmental disaster. Kuibyshev reservoir near Kazan became three meters shallow. Oka, Yenisei, Angara – all these rivers in the summer experienced shortage of water. And all because cyclones replenishing the rives, stopped bringing heavy rains.

As a result of global climate change, there are signs of destruction of the familiar world. Volumes of air masses, penetrated from the north, gradually decrease. The Mediterranean, tropical air masses begin to penetrate. It might be called an anomaly. According to the UN each year around forty million people worldwide are forced to relocate because of natural disasters. By 2050, the number of refugees could rise to 250 million. Experts predict flooding will threaten London and Venice, Florida and throughout the US Atlantic coast. Netherlands and Denmark, Buenos Aires, the coast of Uruguay, a large part of Paraguay and the Maldives and other island states may turn out to be under water and disappear altogether from the face of the Earth.

Such precedents have occurred in the history of humanity. Every year, the sea rises due to melting snows of Arctic and Antarctica. Only in the 20th century the water level in the ocean grew by 17 cm. The level of the Black Sea rose by 8 cm. But this is an inner basin that is an inland sea. And this affects the temperature and climatic conditions of the Black Sea coast in the future.

Recently, there is an abrupt shift of climatic zones. Where formerly Tundra reigned, crooked forests are now thriving. Alpine meadows are increasingly overgrown with trees. Wood bugs, that used to freeze in winter, now safely survive the cold, multiply and destroy the boxwood trees. The average temperature in the mountains over the past two years has increased by 2.5 degrees.

But some scientists argue that the warming is temporary and humanity faces a new ice age. They believe that the greenhouse period is a «myth», under guise of which big political game goes on. This is supported by the fact that in recent years Britain 4 times expanded its gas storage facilities.

Europe is steadily increasing purchases of gas. America is investing heavily in the production of shale gas. And many wars in the Arab territories can be considered as the climate division of the world.

Scientists estimate that after the impending climate catastrophe, modern Libya will be one of the most beautiful places in the world. Sahara will again become watery and with a completely different climate. Maybe that's why the world powers nearly devoured this small country. Libya has huge reserves of fresh water, which is enough even now to provide fresh water to the entire Sahara. This artesian water reservoir contains 300-500 annual flows of the Nile, the largest river in Africa. Libya has become almost a monopoly on the world's water and so there was a direct aggression. Experts predict that within 25 years, half the world's population will suffer from thirst. [1] Africa, Asia, the Middle East are already experiencing water shortages. Conflicts is a very real problem, which was already in the past and may well be in the future, because many of the state in terms of water scarcity will tend to change the directions of the rivers that flow into the territory of other states. [2]

But despite any twists and inventing ruthless witty moves no superpowers governments and corporate leaders will be able to change the temperature or the position of the Earth at least by 1 degree.Our planet and climate is changing, and it is indisputable, and the exact date of the apocalypse no one is yet able to name. One thing is clear, the human will have to adapt to new, difficult conditions.

Meanwhile, scientists predict that as a result of extreme weather events in the coming years Yakutia and Altai, as well as large areas of Alaska and Canada, Northern Europe, East Asia and even the African highlands may undergo risk.

Permafrost covers 25 % of the land and 64 % of the territory of Russia is permafrost [3] and this is at least 1000 m deep into the earth where temperature never goes above 0 degree, and the groundwater should have been called ground ice. When the rise in temperature melts ancient ground ice, our planet will change beyond recognition and this is already happening today. According to the latest data by NASA 97 % of Greenland's glaciers have begun to melt rapidly. Where will this lead is not yet known.

Scientists are trying to understand what has caused climate change in the world, and most importantly, why it does not change uniformly, and as it were chaotic, bringing snowfalls to palm countries and infernal heat, into moderate Europe. Some scientists think that frequent over the past few years earthquakes are to blame. Indeed, during the earthquake there is a shift of the earth's crust. The Earth's surface varies with each thrust and this eventually leads to the fact that the Earth's axis changes relative to the Sun which respectively changes climate. But why earthquakes are becoming so frequent is difficult to answer. However, some scientists suggest that it has something to do with a change in temperature of the earth's core and it is changing, according to experts, depending on the position of the planet on the orbit. Because of reduction of the temperature the core is compressed, and if on the contrary grows due to increase. And because of the core growth a shift of tectonic plates happens which triggers earthquakes.

Experts believe these anomalies are disturbing calls, which the earth gives us. Of course tsunami, local floods and heat waves are not dangerous for the planet, but that does not mean that we are immune to the strongest disaster that will shake the whole planet and can become for us a real apocalypse.

As an example of the future of the Earth, scientists are increasingly turning to Mars. This planet is believed to be the Earth's older sister. Mars has always been a lifeless planet, but recently in the United States space research centre NASA made a sensational statement. The rover «Curiosity» found signs of water on Mars, and it means that life on Mars not only was probable, but also possibly exists today. Billions of years ago, before Mars as the result of a cosmic catastrophe lost its atmosphere, electromagnetic field and other security systems of the normal life of the protein; it was a blooming, liveable planet very similar to the Earth. And now, according to scientists, we reiterate its cosmic destiny.

Academician Vernadsky during the Second World War, created such an ideal as the noosphere- the sphere of the intelligence of mankind. The essence of his doctrine is that the humanity has enough reason and conscience to cope with the risks and threats. After 70 years, we got a pretty sad results of [4].

According to the academician Moiseyeva, the mankind has entered a new era of its existence, when the potential power of the means of influence on the environment that it creates becomes comparable with the mighty forces of the planet's nature. It gives not only pride, but also fear, as it is fraught with consequences that can lead to the destruction of civilization and even all life on Earth. [5].

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# THE EFFECT OF SETTLEMENT DOSES OF MINERAL FERTILIZERS ON THE DYNAMICS OF PRODUCTIVE MOUSTURE OF LEACHED CHERNOZEM OF STAVROPOL UPLAND

Itwasanalyzedthe effect of different methods of calculating the doses of fertilizers on the dynamics of productive moisture in 0-20 cm soil layer ofleached chernozem in teaching and experimental farm of Stavropol State Agrarian University.

**Key words:** methods of calculation, planned yield, winter wheat, productive moisture, leached chernozem.

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**The violation of the hydrological regime under the influence of drought is the phenomenon frequent in the Stavropol Territory, and knowledge of the requirements of this crop to the moisture content can significantly reduce the adverse effects of weather conditions on growth and development of plants and yield formation [7].**

Water is one of the main factors determining the development of the plant, it is necessary to swell the grain of full ripening [2].

The moisture reserves in the 0-10 cm layer of soil during the first decade after the seeding of about 10 mm, and over the next two in the 0-20 cm layer of more than 20 mm to provide 86 % of the formation of shoots 3-4, the depth of penetration to the root system 40-50 cm plant height of 15-25 cm [3].

The studies were conducted between 2010 and 2014 on the territory of the experimental agricultural station of the Stavropol State Agrarian University. The soil where the studies were conducted is leached chernozem, powerful, heavy-low humus content, characterized by the average security 5,1-5,4 % organic matter and mobile forms of macronutrients. The reaction of the soil solution in the arable soil horizon is neutral and pH is between 6,1-6,5 [4].

**The experiment represented by the following factors:**

**Factor A** – planned yield of winter wheat is 4.0, 5.0 and 6.0 t / ha, grade Zustrich.

**Factor B** – methods of calculation of mineral fertilizers. The experimental setup is shown on the slide. Arrangement of plots was carried out using randomized block design replication method with 3-fold replications. Width – 12 m, 80 m long, 1 plot area – 35 $m^2$, the total S experience – 960 $m^2$.

As mineral fertilizers were used: ammophos, ammonium nitrate, and potassium chloride. The fertilizers were applied before planting, at planting and a basic tillage. Predecessor is peas [6].

The calculation of doses of fertilizers on the planned yield of winter wheat 4.0, 5.0 and 6.0 t / ha was conducted by the following methods: according to the traditional method, developed by experts and SNIISKH and agrochemical center «Stavropol», doses of fertilizers were calculated by this formula:

$$R=CYKc,$$

In accordance with the approach developed by V. V. Ageev and staff of the Department of Agricultural Chemistry and Plant Physiology, the doses of phosphate and potash fertilizers are calculated using the second formula below.

$$R = \left(Y - Y \times K\,n\right) / Ky \times 100$$

Doses of nitrogen fertilizers were calculated on converted formula. We have applied original coeffi-

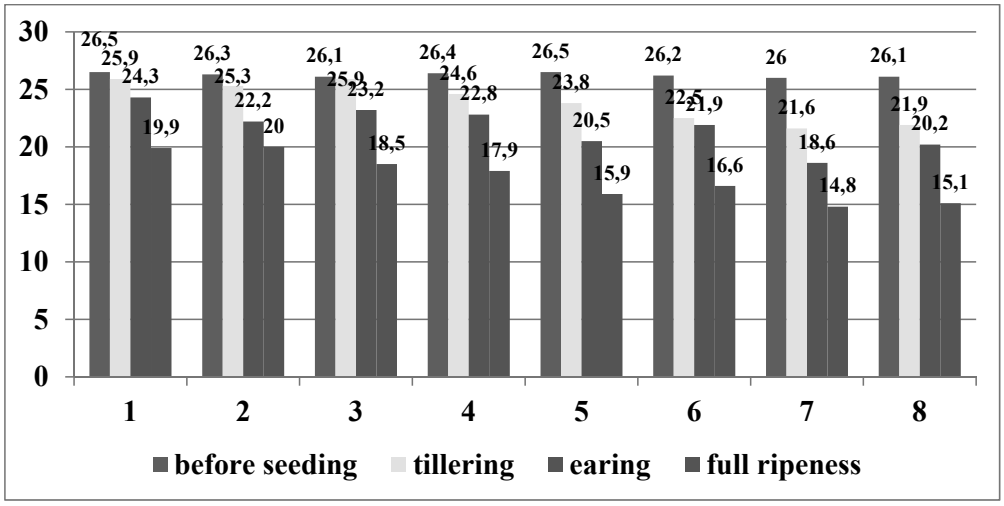
cients of using of P, K from the soil, depending on the availability of nutrients and the utilization factors N, P, K of fertilizers.

$$R = \left(\mathrm{Y}\left(N\right) - \mathrm{Y}\left(\mathrm{P2O5}\right)\mathrm{Kn}\left(\mathrm{P2O5}\right)\mathrm{K}\right) / Ky \times 100$$

In addition the version control was included (without fertilizers) and the version with average recommended doses of fertilizer for this soil and climatic zone [1].

Weather conditions during the studies were different, noted the uneven distribution of rainfall during the growing season of crops. The most favorable agrometeorological conditions formed in 2010–2011 and 2012–2013 agricultural years, due to the optimal distribution of heat and rainfall during the growing season of crops, despite the decline in the average annual rainfall of 7–15 %, and exceeded the average annual temperature of 1,4–2, 5 °C. In the 2013–2014 year rainfall was 13 % more than the long-term norm, but their distribution on phases of vegetation of winter wheat was uneven, which adversely affected the growth and development of culture, especially in the initial period of growth. The temperature regime was characterized by rapid changes in the overall long-term average annual temperature has exceeded figures for 1,1 °C. Agrometeorological conditions of 2011-2012 for the growth and development of winter wheat characterized as poor, due to low temperatures in winter, an acute shortage of water in the spring and the high temperature at the end of the growing season.

During the experiments the dynamics of the content of productive moisture in 0-20 cm soil layer in crops of winter wheat in all cases was a single stroke. This is a steady decline in its reserves during the growing season of crop with the minimum value in the phase of full ripeness.




1 –control (without fertilizers); 2 – recommended ($N_{60}P_{60}K_{30}$); 3 – $N_{60}P_{34}K_{34}$; 4 – $N_{68}P_{44}K_{24}$; 5 – $N_{105}P_{60}K_{60}$; 6 – $N_{90}P_{67}K_{40}$; 7– $N_{126}P_{80}K_{72}$; 8 – $N_{110}P_{82}K_{51}$

**Figure 1 –** The effect of doses of mineral fertilizers on the dynamics of available moisture (mm) in the 0–20 cm layer of leached chernozem, 2010–2014

The highest content of productive moisture in all cases regardless of the length of experience and selection phase of the development of winter wheat was noted in the 2012–2013 agricultural year and amounted to 27.7 mm prior to planting, in the tillering stage – 26.8 mm in a phase of earing – 25.6 mm in the phase of full ripeness – 21.3 mm. In 2010–2011; 2011–2012 and 2013-2014, the time depends on the observation values of available moisture ranged 26,4–14,9; 25,9–12,5 and 27,0–15,3 mm, respectively.

Applied mineral fertilizers during the experiment reduce the amount of available moisture in the soil layer of 0–20 cm on indicators of control in 2010–2011 on 07–3,7 mm; in 2011–2012, the – on 0,7–5,3 mm; in 2012–2013, the – on 0,2–3,2 mm in 2013–2014, the – on 0,6–3,6 mm. This significant difference compared to the control in all the years of research provides options to the planned yield of 6.0 t / ha according to the methods of calculation V. V. Ageev and scientists of SNIISKH and agrochemical center «Stavropol» $N_{126}P_{80}K_{72}$ and $N_{110}P_{82}K_{51}$. It should be noted that in all embodiments of the planned yield and recommended fertilizer dosage indicators were available moisture within the smallest significant differences. On average, the experience of the highest moisture reserve, depending on the variants of the experiment was observed in 2012–2013, and totaled 188.7 mm, while in 2010–2011; 2011–2012 and 2013–2014, the figure was 177.5, respectively; 165 and 183 mm.

On fertilized variants the moisture reserves in the soil layer of 0–20 cm on indicators of natural agrochemical background was lower: in 2010–2011 – by 0,1–4,9 mm; in 2011–2012, the – on 0,3–5,9 mm; in 2012–2013. – On 3,3–4,6 mm; in 2013–2014. – On 0,7–5,3 mm. This is due to large consumption of water by plants from fertilized variants. A significant decrease in this indicator compared to the control in all the years of research on observed cases with doses of mineral fertilizers on the planned yield of 6.0 t / ha according to the methods of calculation V. V. Ageev and SNIISKH and agrochemical center «Stavropol».

Analysis of secondary data shows that studied in the experiment method of calculation of mineral fertilizers contributed to the decline of productive moisture content (in 1–5,8 mm) with respect to control 0–20 cm soil layer. This provided a significant decrease in all methods of calculation of mineral fertilizers on the planned yield 5.0 and 6.0 t / ha, but the difference between the methods of calculation was within the lower significant difference.

Statistical analysis of the data allowed us to conclude that the maximum moisture reserves were observed in germination phase, which was significantly higher compared with those in the other phases of the development of culture. Before sowing of winter wheat in the experience all doses of fertilizer ensures optimal content of productive moisture in 0–20 cm soil layer. In the next phase of development the studied methods of calculation of mineral fertilizers decreased analyzed indicator regarding control, and the difference amounted to: in the tillering stage 0,6–4,3 mm in a phase of earring – 1,1–5,7 mm in a phase of full ripeness – 1,4–5,1 mm. At all times of observation a significant decrease in the reserve of moisture in 0–20 mm relative to the control ensured doses of fertilizers on the planned yield 5.0 and 6.0 t / ha for the compared methods of calculation.

In this way the four-year study of winter wheat on chernozem leached showed that the use of fertilizers decreased the moisture reserves in the 0-20 cm soil layer by a large vegetative mass of culture in the fertilized variants. Depending on the method of calculating the norms of fertilizers compared to control moisture reserves decreased in the tillering stage to 0,6–4,3 mm in a phase of earring – on 1,1–5,7 mm, in the phase of full ripeness – 1,4–5,1 mm. In embodiments, the planned winter wheat 5.0 and 6.0 t / ha dose of all fertilizers significantly reduced moisture reserve in the soil – 0–20 cm compared to the natural agrochemical background.

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# THE INTRODUCTION OF STEVIA IN EASTERN CISCAUCASIA

The urgency of research on the introduction and cultivation of a culture of stevia. Set out some elements of the technology of its plantation in the region and utilization of biomass in health Supplements.

**Key words:** stevia, stevioside, rebaudioside, herbal tea, dietary Supplements, care, stevia seedlings, organic fertilizer, planting density, phytomass of stevia.

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**Achievement of the balanced food on the basis of rational consumption of products with carbohydrate structure as excess of sucrose in food allowance of the person in the last decades considerably promotes increase in statistics of incidence for adults and children diabetes, hypertension, obesity and other forms of violation of its health [1, 10] becomes the most important problem of a modern civilization. In this regard interest in cultivation of plants – sugar substitution not from carbohydrate group increases. In universal production of sugar (130 million t) the share of its substitutes makes so far only 10-15 % of gross equivalent therefore the problem of increase in production of vegetable raw materials of sugar substitution especially on the basis of a stevia is very actual for receiving steviozid and rebaudizid [2].**

Stevia (Stevia rebanoliana Bevtoni) a perennial shrubby plant of composite family (sunflower) which natural area of growth is in northeast part of South America. This culture was grown in Japan, China, in the countries of Southeast Asia [3] long times ago. Leaves of this unique plant contain food sweeteners steviozid and rebaudizid which impact sweet relish (250-300 times more with pleasure than sugar) [4,6]. In glycosides there is no carbohydrate group therefore the stevia is recommended for the use by sick diabetes. Useful properties of stevia are explained also by the maintenance of a large number of antioxidants: routine and kvartsetin, and also mineral substances: phosphorus, calcium, zinc, potassium, magnesium, copper, vitamins: And, C,E and groups B. The stevia is included into the list of the valuable curative plants recommended by the Russian Ministry of Health in treatment of many human diseases; pancreatitis, cholecystitis, obesity, arthritis, osteochondrosis and restoration of function of thyroid gland [5,7].

The wide interest which arose lately to culture stevia in our country served as motivation to an introduction and cultivation in plantation culture in East Pre-Caucasus, for increase of a biodiversity and efficiency of arid landscapes.

As stevia is a plant of tropical origin, cultivation it in the south of our country possibly only in the seedling way in one-year culture a green grafting apical seedlings of stevia [8,9].

In this article it is shown the successful results of collaboration of Achikulaksky agroforest station and Stavropol Agrarian University on introduction and plantation cultivation of stevia in arid conditions of East Pre-Caucasus are stated.

Researches were conducted on an introduction site of Achikulaksky NILOS. The soil for laying of experiences was prepared on the standard technology with introduction of organic fertilizers. Optimum temperature condition (t0 of air +220 +250) for disembarkation of seedling in this area develops in the third decade of May. For the purpose of determination of optimum density of landing of stevia, the following options of experiences are tested: 1 – from the small – 60kh60sm (27000 pieces/hectare); the second – with average – 60kh30sm (55000 pieces/hectare) and the third – with high density – 30kh30sm (110000 pieces/hectare) landings of plants of stevia.

Care of stevia consisted in periodic weeding of weeds, loosening of soil and watering plants. During its intensive growth in options also influence of mineral top dressing of plants on productivity of phyto mass of stevia is tested. Top dressing in options of experience was carried out the following doses; the first – $N_{120}P_{90}K_{60}$, the second – $N_{90}P_{60}K_{40}$ and the third option – $N_{60}P_{40}K_{20}$

In the conditions of arid climate of East Pre-Caucasus stevia well adapted. At landed in the dug-out soil of plants the active growth of elevated weight

and normal passing of phenological phases of development is observed.

Estimating results of researches of stevia (table 1) it should be noted considerable advantage of dense landing (110000 pieces/hectare) with placement of plants according to the scheme 30 kh 30sm. With such density of standing of a plant of stevia form bushes height – 93 sm with the greatest number of the accruing escapes (31) with a total length them – 2169 sm. Accumulation of dry biomass for vegetation made – 35,4 ts/hectare. Slightly lower there were results in option with average (55000 sht/hectare) density of landing of stevia: height of plants – 72,0sm, number of escapes – 27 with the general extent – 1568 sm, and a biomass crop – 25,0 c/hectare. And in option with a small density of landing (27000 pieces/hectare) of stevia plants, productivity appeared the lowest (6,7 ts/hectare).

The table 1 – Dynamics of Seasonal Growth and Development of Stevia in options with different density of landing and a dose of application fertilizers

Options of density of landing Number of escapes on a plant, piece the Total length of escapes of a plant, cm Height of a plant, cm Diameter of krone, cm the Beginning of a butonization by options the Beginning of blossoming by options Dry phytoweight, c/hectare

Table 1 – Seasonal dynamics of growth and development of stevia in variants with different plant density and fertiliser dose

| Options with different density of landing of plants | Options with a different dose of application of fertilizers | The total length of the shoot | Plant height cm | Crown diameter cm | Beginning of budding | | | Beginning of flowering | | | Dry phytomass | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | I | II | III | I | II | III | With all shoots | Purified (leaves) |
| The comparisons with different plant density | | | | | | | | | | | | |
| 27000 | 23 | 997.0 | 71.0 | 52.6 | 28.06 | 15.07 | 3.09 | 10.07 | 30.07 | 28.09 | 16.8 | 6.7 |
| 55000 | 27 | 1568.0 | 87.0 | 47.0 | 8.07 | 21.07 | 6.09 | 18.07 | 7.08 | 19.09 | 72.3 | 25.0 |
| 111000 | 31 | 2169 | 93.0 | 41.6 | 10.07 | 6.07 | 10.09 | 16.07 | 15.07 | 10.09 | 95.0 | 35.4 |
| The comparisons with different dose of fertilizer | | | | | | | | | | | | |
| 1 | 20 | 1160 | 90.0 | 51.0 | 30.07 | 17.07 | 30.08 | 7.07 | 30.07 | 10.09 | 95.0 | 24.6 |
| 2 | 24 | 1416 | 95.0 | 52.3 | 10.07 | 14.07 | 5.09 | 20.07 | 28.07 | 20.09 | 108.0 | 36.6 |
| 3 | 34 | 2006 | 98.0 | 54.0 | 9.07 | 20.07 | 10.09 | 20.07 | 30.07 | 25.09 | 133.0 | 44.1 |

Improvement of agro background of cultivation positively affected formation of elements of structure of crop. Introduction of the raised doses of mineral fertilizers ($N_{120}P_{90}K_{60}$) influenced formation at plants of stevia of more powerful bushes and bigger number (34) accruing escapes of plants which average height by the end of vegetation reached about a meter, productivity of phytoweight in this option made – 44,1 c/hectare. Influence of an average dose ($N_{90}P_{60}K_{40}$) in the second option on productivity of phytomass of stevia was slightly lower – 36,6 c/hectare, and it is even lower it appeared in the 3rd option, with a small dose ($N_{60}P_{40}K_{20}$) – 24,6 c/hectare.

During researches, at experimental plantation 3 forms of stevia which have different leaves: fine-leaved with an oblong form, middle-leaved, at which leaves lanceolate and large-leaved with the biggest rhombic leaves. In this regard some features of phenological development of these phenotypes of plants are revealed.

The budding phase – blossomings, connected with achievement of maximum accumulation of glycosides in stevia plants, in our experiences at the allocated forms came not equally. At a fine-leaved form she is marked out in the first decade of July, at srednelistny for three weeks later, and at large-leaved at the end of September. Therefore collecting their phytoweight is carried out not at the same time, and step by step. Full maturing of seeds was observed at a fine-leaved form in the third decade of August, at middle-leaved in the middle of September, and at the large-leaved single maturing in the first decade of October is noted. The shortest period of vegetation is noted at a fine-leaved form – 85 days, at middle-leaved – 105 days and most long it lasts at a large-leaved form (117–122 days) up to sharp decrease in air temperature in October.

The considerable range of useful properties of a stevia allows to use widely it for receiving various medical dietary supplements.

New methods of its use in the food and improving purposes by creation of blending phytoteas of stevia with other herbs of unaba, persimmon virginsky, melissa, mint and other herbs are developed [11]. Such medical collecting plants supplementing each other increase curative properties of dietary supplements in treatment of diabetes [10].

On the basis of the conducted researches it is established that the optimum share of the maintenance of stevia in the specified dietary supplements makes 5–10 % of the mass of dietary supplement.

Use of stevia as source of low-calorie natural substitute of sugar [10] for people with diabetes, hypertension, obesity, in food allowance which the use of sugar is undesirable, define considerable relevance of further researches for scientific justification, widespread introduction of economic and valuable culture ostevia in the south of our country.

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# TERMS AND CONDITIONS OF FORMATION OF QUALITY OF ANIMAL PRODUCTS IN THE NETHERLANDS

A system for dairy cattle as an example of a specialized dairy enterprises with a complete production cycle – Kaasboerderij Weenink. Dairy herd represented a cross between Simmental dairy and beef productivity and Holsteins. The reproduction of the herd is carried out under the supervision of specialists of the company Bayern-geneticist. Daily milk yield of 25 kg / head. The fat content is 4.5 %, protein is 3.5 %. Feeding is according to the needs of milking – the voluntary milking robot with the help of the company «GEA MIone». Everything gets milk is processed into cheese Gouda technology.

**Key words:** Holland farm system for dairy cattle, Simmental breed, Holstein, Bavaria, genetics, Gouda cheese.

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**Kingdom of the Netherlands is one of the world's leaders in production and processing of milk. The volume of production in 2014 was 11.6 million tons (11-th position in the world), with an increase of 7.8 % in comparison with 2011. According to the production of milk per capita (900 kg), the Netherlands ranked as third, and the leaders on this indicator are New Zealand (2400 kg), Ireland (1500 kg). And only 5 % of the population is employed in agriculture. Livestock along with floriculture are the leading sectors of agricultural production.**

The main agricultural sector of the Netherlands is family farms. Most Dutch farms are relatively small: about half of them are less than 10 hectares of land. However, agricultural cooperatives are highly developed in the country; they allow small family farms to solve their problems together and feel confident in the market.

High level of automation of labor even by western European standards and usage of agricultural machinery help to develop intensive, high-yield production of Dutch farmers. Much attention is paid to the breeding; there are many retraining agricultural schools in the country to attract the small producers. In addition, the Dutch farmers, including the smallest, can easily get loans from banks or agricultural cooperatives.

Lievelde is a small village in the province of Gelderland in the east of the Netherlands. There is a specialized dairy enterprise Kaasboerderij Weenink. On the territory of the enterprise there are two farms and a workshop for the production of cheese. That means the full cycle of milk processing. There is a historical building, an old cheese factory on the territory of the enterprise (Figure 1), while the production of cheese is located in a new building, equipped with modern cheese-making equipment (Figure 2).

**Figure 1 –** The old historic cheese factory


**Figure 2 –** New cheese factory

The farm contains 90 cattle, including 75 dairy cattle and 15 dry cattle. More precisely, they are not a purely dairy cows but crosses of Simmental of milk-meat direction of efficiency and Holsteins. Selection of breeds for farmers has a decisive role in obtaining the final result, namely Gouda cheese. Therefore, the owner of the company Mr. Venink cooperates with Bavarian geneticist Stef Bink, a representative of a company Bayern-geneticist. The firm is the leading organization for breeding Simmental cattle.

Simmental breed is famous not only for good outline indicators, as well as resistance to infectious diseases, high dairy. The average yield is 23–28 kg per head. Milk from Simmental breed is considered as good for cheese not only because of favorable ratio of protein and fat (0.8), but also due to the low amount of genetically somatic cells. At the same time the company is guaranteed by the additional income from the sale of calves, reached 3 months of age, in the meat processing enterprises of the Netherlands.

Animal keeping in loose-housing barns, but some places for cows are equipped with lots of litter, consisting of finely divided straw mixed with limestone. Such a composition of litter has indisputable advantages: hygroscopic, free-flowing, relatively low bulk density. Cows willingly lie on a mat. After resting particles are poured easily from the skin of the animal, and, importantly, do not leave dirt on the body.

A feature of animals' keeping is absence of any order of feeding and milking. That is, it is voluntary, according to his needs.

It means that once a week feeding-stuffs is placed into a wide pass. Cows eat the food in the immediate vicinity of the fence, and gradually formed a free space, which does not allow animals to get further underlying food. To fix it, the barriers are periodically shifted enclosing the center. Thus, the feeding space is shrinking, and the food is again within the reachable space for cows (Figure 3). It should be emphasized that the cows have access to feed all day around.

**Figure 3 –** Organization of cows feeding

Milking of cows is also carried out all the day around by a milking robot produced by company «GEA MI-one» with two devices for milking, which allows milking of two cows at the same time (Figure 4).

Each cow passes through the gates, which are opened after the release of one of the places for milking, identified by a reading device. Taking into account the indicators, including body weight, the amount of milk yield and milk composition, calculated amount of concentrated feed with additive premix is loaded in the feeder, and the cow he eats it with pleasure. At the same time an automatic milking apparatus equipped with a 3D camera attaches the teat cups starts the milking process.

It should be mentioned that the device is programmed so that the initial moment after fixing the teat cups on the udder, the hot water is injected into them, for washing the teat. And another important point is that in the first 10 seconds of milking the milk does not flow into a common reservoir, so, the most servings of milk contamination (bacterial cork), do not fall into the overall milk yield.

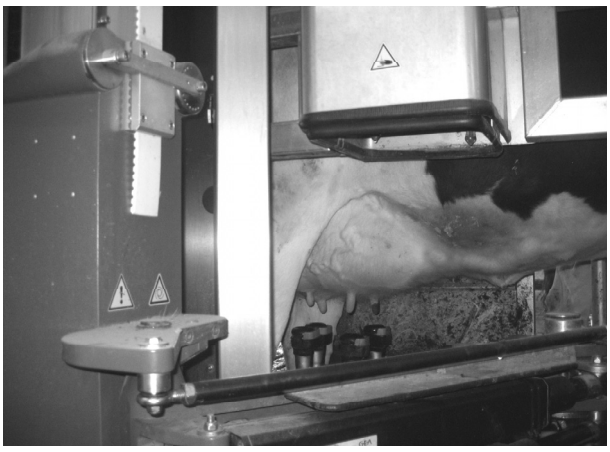

**Figure 4 –** Work of robot milking device

The value of milk yield is recorded by a counter, and the result is displayed on the computer screen. Thus, the account of milk produced is carried out continuously. Another very important function of the installation is to identify abnormal milk. In the event of such milk, it immediately merges installation, completely eliminating the possibility of their falling into the process line.

The value of milk yield is recorded by a counter, and the result is displayed on the computer screen. Thus, the account of produced milk is carried out continuously. Another very important function of the divice is to identify abnormal milk. In the case of abnormal milk, it immediately poured off by the device, completely eliminating the possibility of their falling into the production line

Average multiplicity of milking is 2.7. High yielding cows (40 kg / head) pass through the installation 4 times per day, and cows with a yield of 10 kg / head. and below pass one or two times depending on their needs. This is the essence of voluntary milking.

The quality of milk from each cow is determined once a month in a special dairy laboratory. All data on the quality of milk, including the number of somatic cells and bacterial contamination is transmitted over the network to the owner of the farm. Thus, also the incidence of mastitis subclinical udder is revealed for promptly treated animal. However, it should be noted that cases of mastitis are very rare (2–3 per year).

In case of technical problems, identifying of hazards, and others the installation produces an alarm and stops the process and using the software it sends a message (SMS) on the cell phone the person in charge.

The total yield of milk on the farm is 1900 liters of milk per day. The average fat content in milk is 4.50 %, protein – 3.50 %.

The produced milk is piped into a storage tank, located in an adjacent industrial building and is used for the production of cheese on Gouda technology. Produced cheese (Figure 5) after ripening is sold in a shop, located on the territory of the farm.

**Figure 5 –** A shop window of Kaasboerderij Weenink

According to studies of many authors it has been established that composition and features of milk of cows Simmental breed have a number to specific features and advantages to other breeds of cows.

An example of the Netherlands demonstrates that agricultural production can be efficient and profitable business, even where there is no black soil and a favorable climate for agriculture. Of course, the Dutch way of doing agriculture requires very serious financial investments (what is lacking in the majority of Russian farmers). However, the experience of foreign farmers has shown that with proper use of these funds, they are self-liquidate and they make a profit.

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# ECONOMIC AND MATHEMATICAL METHODS OF LABOR POTENTIAL MANAGEMENT OF THE REGION

When developing the regional employment policy, the labour potential must be used to get the best of quantitative and qualitative changes in the workforce, as well as methods to ensure their effectiveness. Human resources as a basis for economic development of a country become apparent in the labour potential of the population. Thereby, active employment policy, job hunting stimulation, training, professional skills, acquisition of a new profession is needed. Different social and economic processes in the region influence change of the regional labour potential. Economic and mathematical modeling of the labour potential allows solving control problems at the regional level. The research highlights the key social and economic processes in the region that influence changes of its labour potential. The differential equation was stated to describe these changes and represent together with the conditions that are given to solve it, a mathematical model of the dynamics of the labour potential. The optimal control task of the amount of unemployed people of working age is studied within this model. The proposed economic and mathematical model of the labour potential of the region is tested on statistical data of the economy of Stavropol region.

**Key words:** the labour potential, the region, the mathematical model.

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**The analysis of the regional problems of labour economy enables to make a conclusion that the regional labour market is characterized by imbalances of demand and supply of the skilled labour. Thereby, active employment policy, job hunting stimulation, training, professional skills, acquisition of a new profession is needed. When developing the regional employment policy, the labour potential must be used to get the best of quantitative and qualitative changes in the workforce [6, 11].**

The basis of the labour potential is labour. The labour potential is defined as an interconnected complex of quantitative and qualitative characteristics of the population to perform labour activity and ensure achievements of production objectives under specific social and economic conditions, taking into account scientific and technical advance [22]. In the research works of foreign scientists one can find the analysis of a salary increase impact on the scale of the labour supply. The substitution effect causes a labor supply increase, while the income effect leads to its reduction. In the research positive correlation between the labour supply volume and the size of net salaries for the USA conditions is found out.

In Sweden, the reduction of the net salary for the particular level of its gross value resulted in a reduction of the labour supply [1, 2].

In the research [4] questions of the labour division are considered, the problems with the costs of knowledge coordination and record are studied.

In the research works [15, 16] a mathematical model of the labour market self-organization for several economic sectors is developed. It enables to trace certain trends of the labour market functioning. The mathematical model also enables to analyze the obtained information on the stable and unstable states of the labour market for n different economic sectors and make a forecast of its state [17].

Meanwhile, the factors, which influence the labour potential formation, during the transition process from the labour power to the labour resources [8].

The concept «labour potential» should be considered as an extension of the concepts «labour power» and «labour resources». The categories «labour power» and «labour resources» are similar in their meanings, but have differences in the content. The difference between these concepts is that the «labour power» is an individual person's ability to work, and «labour resources» is considered as the population size of working age, which has necessary

physical and mental abilities, professional training and qualifications to work in the social production. «Labour potential» contains both existing resources and hidden resources. «Labour resources» contain only stock which is unused [21].

In the research [18] it is stated that the number of labour resources is a dynamic value, which is divided into indicators of natural reinforcement and natural leave. At this moment indicators of natural reinforcement include: the number of working age people, the number of people before and after working age, the number of people from the educational institution system and army. Indicators of natural leave include: the number of people of retirement age, the number of working age people who died, the number of people who joined the army or entered educational institutions at full-time course of study.

In this research a differential equation is suggested. It takes into account changes in the basic social and economic processes taking place in the region and influencing the changes in labour potential of the region. This equation with the given initial conditions is a mathematical model of the labour potential dynamics. This model enables to study the task of optimal control of the amount of working age unemployed people, who did not find work.

The process of constructing a mathematical model of social and economic facilities in general can be divided into six stages: formulation of the economic problem, the qualitative analysis, the construction of a mathematical model, the mathematical model analysis, preparation of the initial information, carrying out model calculations, analysis of the results and their application [19].

The complex nature of the problem of modeling dependencies targets of socio-economic status of the region to support decision making in the management of key parameters, in particular the employment potential, requires a unified modeling techniques applicable studies of factor indicators and regional studies [14].

In the first phase of the study stated goal, which is to achieve and to collect and process statistics. To study the working potential of the goal may be to build a set of tasks for the entire set of targets, or for individual indicators, which are analyzed. At the same stage the information base for the factor indicators. At the second stage, the analysis data base to determine the completeness and accuracy of information and is defined modeling tools: choose methods, adequate levels of certain information and software tools to implement these methods. In the third stage problem is solved at the qualitative and meaningful level. At the stage of qualitative analysis examines the structure of the data, recognize and deal with these contradictions and ambiguities in their descriptions, are overlapping symptoms, with the removal of one of them, building new features. In the fourth stage, the construction of multi-factor models of influence factor indicators allocated to the target sign. The fifth stage is devoted to the analysis and interpretation of the model target, the formation of the forecast for decision-making in the study area [9].

To assess the computational efficiency of the proposed mathematical models now there are a number of methods to optimize the dynamic properties of its own socio-economic systems.

The change of the labour potential of the region is influenced by different social and economic processes in the region, which include as follows [18]:

1) the number of working age unemployed people, who found a job;
2) the value of population emigration;
3) the value of population immigration;
4) the number of people before and after the working age;
5) the number of working age people who died;
6) the number of retired people;
7) the number of working age people who joined the army or entered educational institutions at full-time course of study.

Let $a(t)$ – function, which values at every instant are $t$, $t\in[t_0, T]$, they coincide with the volume of the labour potential at this moment: difference between the values $a(t+\Delta t)$, $(t+\Delta t)\in[t_0, T]$, $\Delta t\geq 0$, and $a(t)$ characterizes change of the labour potential value during a period of time $\Delta t$. We denote during a period of time $t\in[t_0, T]$ by

- $b_1(t)$ – the number of working age unemployed people, who found a job;
- $b_2(t)$ – the number of working age unemployed people, who did find a job;
- $c(t)$ – the number of working age people who died;
- $d(t)$ – the number of people before and after the working age who found a job;
- $e_1(t)$ – quantity of immigrants, $e_2(t)$ – quantity of emigrants in the region;
- $g(t)$ – the number of working age people who retired and do not work (e.g., military personnel);
- $h(t)$ – the number of working age people who joined the army or entered educational institutions at full-time course of study.

Then, it is obvious,

$$a(t+\Delta t)- a(t) \approx [k(t)a(t) + b_1(t) + b_2(t) - c(t) + d(t)+ e_1(t) - e_2(t) - g(t) - h(t)]\Delta t, \quad (1)$$

where $k(t)$, $t \in [t_0, T]$ – some given coefficient which depends on time and can take on both positive and negative values.

Let's divide the left and the right side of the equality (1) by $\Delta t$, as a result we will obtain:

$$\frac{a(t+\Delta t)-a(t)}{\Delta t} \approx k(t)a(t) + b_1(t)+ b_2(t) - c(t) + d(t) + e_1(t) - e_2(t) - g(t) - h(t). \quad (2)$$

Passing to the limit in (2) at $\Delta t\to 0$ and assuming that the derivative exists in the left side of this equality, and all functions in the right side are continuous, we have:

$$\frac{da(t)}{dt} = a(t) + b_1(t)+ b_2(t) - c(t) + d(t) + e_1(t) - e_2(t) - g(t) - h(t), \quad (3)$$

where – $t \in [t_0, T]$

To the differential equation (3) add the initial condition $a(t_0) = a_0$, which is satisfied with the solution

$a(t)$ of this equation (suppose that $a_0$ – the volume of labour potential at the initial moment t – is known).

Suppose variable value $b_2(t)$ can be regulated, and others values $(k(t), b_1(t), c(t), d(t), e_1(t), e_2(t), g(t), h(t))$ – cannot be regulated on $[t_0, T]$, which one can built in an explicit form by means of regression analysis methods using known statistic data about these functions. Assume that $b_2(t)$ satisfies the conditions (limits):

$$\alpha_1 \le b_2(t) \le \alpha_2,$$

$\alpha_1$=const>0, $\alpha_2$=const>0, – permissible correspondingly minimum and maximum levels of unemployment in the region (note that $\alpha_1 \neq 0$, as unemployment, for example, hidden, always exists, even under the most favorable economic conditions).

We will try to choose the value $b_2(t)$ in such a way that on $[t_0, T]$ its total value (integral)

$$\int_{t_0}^{T} b_2(t)dt \quad (4)$$

is minimal.

This task is the task of dynamic object optimal control. Let's find its solution using Pontryagin's maximum principle.

We introduce Hamilton's function

$$H = (k(t)a(t) + b_1(t) + b_2(t) - c(t) + d(t) + e_1(t) - e_2(t) - g(t) - h(t)) \cdot \varphi_1(t) - b_2(t).$$

Then

$$\frac{d\varphi_1}{dt} = -\frac{\partial H}{\partial a}\varphi_1 = -\varphi_1,$$

$$\varphi_1(t) = e^{-(t-t_0)}.$$

Consequently,

$$H = e^{-(t-t_0)}(a(t) + b_1(t) + b_2(t) - c(t) + d(t) + e_1(t) - e_2(t) - g(t) - h(t)) - b_2(t).$$

$H$ reaches $a$ maximum on $b_2(t)$ at $b_2^{(0)}(t) = \alpha_1$. Inserting the optimum $b_2^{(0)}(t) = \alpha_1$ into the equation (3) and solving the obtained equation with the initial condition $a(t_0) = a_0$, we will have:

$$a^{(0)}(t) = \left[ a_0 + \int_{t_0}^{t} b^{(0)}(s) \cdot \exp\{-(s - t_0)\} ds \right] \cdot \exp\{(t - t_0)\}, \quad (5)$$

where

$$b^{(0)}(t) = b_1(t) + \alpha_1 - c(t) + d(t) + e_1(t) - e_2(t) - g(t) - h(t). \quad (6)$$

By the specified function type $a(t)$ from (5)-(6) one can easily make a forecast on the labour potential volume at the moment $T$: it equals to the value $a(T)$.

The value $b_2(t)$ can be selected in a different way, if instead of criterion (4) the following criterion will be selected

$$\int_{t_0}^{T} b_2^2(t)dt. \quad (7)$$

Expression (7) is total square of deviation on $[0, T]$ values $b_2(t)$ from $0$ (zero). Therefore, in practice it is more convenient to set the criterion (7) instead of the criterion (4): it is not required to determine the upper and lower limits. $\alpha_1$, $\alpha_2$.

As before we will determine $b_2^0(t)$ from the minimum condition (7), i.e.,

As in the past will be determined from the minimum condition (7), i. e.

$$\int_{t_0}^{T} b_2^2(t)dt \to \min_{b_2(t)}, \quad (8)$$

if a(t) satisfies the equation (3) with the initial condition $a(0) = a_0(t)$.

In the equation (3) we will make a change

$$u(t) = b_1(t) + b_2(t) - c(t) + d(t) + e_1(t) - e_2(t) - g(t) - h(t). \quad (9)$$

Because from (9) it follows that

$$b_2(t) = u(t) - b_1(t) + c(t) - d(t) - e_1(t) + e_2(t) - g(t) - h(t), \quad (10)$$

then denoting

$$r(t) = b_1(t) - c(t) + d(t) + e_1(t) - e_2(t) - g(t) - h(t), \quad (10`)$$

we will pass from the control task (3), (8) to the task

$$\frac{d}{dt}a(t) = a(t) + u(t), \quad (11)$$

$$\int_{t_0}^{T} (u(t) - r(t))^2 dt \to \min_{u}. \quad (12)$$

When solving the task (11), (12) we use theorem 3.1 from [13].

We introduce Hamilton's function for consideration

$$H(a, u, \varphi) = \varphi_0(u - r)^2 + \varphi_1(u + a).$$

If $\varphi_0 = 0$, from the condition

$$\frac{dH}{du} = 0 \quad (13)$$

it follows that $\varphi_1 = 0$, i.e., at the same time $\varphi_0 = 0$, $\varphi_1 = 0$, that is impossible. Therefore (see theorem 3.1 from [13]) $\varphi_0 < 0$. One can suppose $\varphi_0 = -1$.

From condition (13) we find

$$u_0(t) = r + \frac{\varphi_1}{2}. \quad (14)$$

As

$$\frac{d}{dt}\varphi_1(t) = -\frac{\partial H}{\partial a} = -\varphi_1,$$

then

$$\varphi_1 = ce^{-t}, \; c = const. \quad (15)$$

From (9), (10`), (14), (15) it follows that

$$b_2^0(t) = \frac{1}{2}e^{-(t-t_0)}.$$

We insert (14), (15) in (11), find the equation for the optimum $a^{(0)}(t)$:

$$\frac{d}{dt}a^{(0)}(t) = k(t)a^{(0)}(t) + r(t) + \frac{1}{2}e^{-(t-t_0)}, \; a(t_0) = a_0, \quad (16)$$

where $r(t)$ is given by the expression (10`).

Solution of the task (16) has the same form as before (see (5)), but in this case

$$b^{(0)}(t) = r(t) + \frac{1}{2} e^{-(t-t_0)},$$

where $r(t)$ is given by (10`).

Example 1. On the basis of statistical data presented in the statistical books on Stavropol region (see, for example, [10] till the moment of time $t_0 = 2011$ (i.e. till 2011 year) the following has been identified:

$\alpha_1 = 87900$, $\alpha_2 = 177700$, $a_0 = 2787000$, $k(t) \approx 0{,}001$, $b_1(t) = 82400$, $c(t) = 7681$, $d(t) = 509$, $e_1(t) = 2900$, $e_2(t) = 1271$, $g(t) = 5700$, $h(t) = 6000$

(these values are practically the same during 5 years). Then, according to (6), $b(t) = 153057$. According to (5)

$a^{(0)}(2012) = 2\ 942\ 922$, $a^{(0)}(2013) = 3\ 099\ 000$, $a^{(0)}(2014) = 3\ 255\ 234$, $a^{(0)}(2015) = 3\ 411\ 624$.

Example 2. We suppose the same quantities and their values are from Example 1. Let us find $a^{(0)}(2012)$, $a^{(0)}(2013)$, $a^{(0)}(2014)$, $a^{(0)}(2015)$, if the criterion (7) is considered instead of criterion (4). In this case

$a^{(0)}(2012) = 2\ 854\ 978$, $a^{(0)}(2013) = 2\ 923\ 024$, $a^{(0)}(2014) = 2\ 991\ 139$, $a^{(0)}(2015) = 3\ 059\ 321$.

Thus, in Examples 1 and 2 by the specified function type $a(t)$ from (5)-(6) the volume of the labour potential is forecasted from 2012 to 2015. Using the criterion (7) instead of the criterion (4) did not result in significant changes of the obtained values. The obtained values of the labour potential volume show an increasing number of the labour potential in Stavropol region from 2012 to 2015.

The last decades of the 20th century and the beginning of the new millennium is characterized by the global change in attitude to the human capital and potential. In modern society a human being is the main goal and an active subject of all social and economic processes [3].

Researches of the formation and use of the labour potential of the region are descriptive and not numerous. However, they must be expanded and different methods should be used: economic, social, mathematical, etc., which enable to estimate the impact of the labour potential on economic development and to justify methods of its control [21].

The complex nature of the problem of modeling of social and economic state dependencies of the region to support decision making in the key parameters control, in particular, the labour potential, requires unified modeling methods which are used to study indicators and factors of the regional researches [5, 6].

The authors have developed economic and mathematical model of the labour potential optimal distribution of the region into economic sectors. The model is tested on the statistical data for Stavropol region [20]. The model allows using statistical data on its labour resources and economic indicators, to distribute the labour potential of the region under consideration in the optimal way. Parameters of the model are the total investment amount per employee in the industry and the amount of profit it brings to the industry. They are calculated according to the statistics provided by the state statistical bodies of the region. Utility function is used as the target function in the presented model, it is defined on the great number of sets of human resources in different economic sectors.

In the research [23] the task of optimal distribution of the labour potential of the region into economic sectors is solved with mathematical methods. The developed model takes into account the number of industries in the region, the state of its economy, the income that one employee of *i* industry brings to the region if its sector of the economy will be in the *j* state ($i=1, ..., n; j=1, ..., m$). Having composed the matrix of consequences, with a minimum income per an employee of Stavropol region, one can plan the distribution of the labour resources into economic sectors of the region.

The organizational component of the labour potential of the region is essential for functioning of regional enterprises, workforce, households, individual workers, because it determines conditions to form and implement population potentials, professional growth, to achieve high performance, to meet needs. Since the labour potential to a greater degree than the other economic resources reflects the potential of the region, its importance in the regional social and economic complex control constantly grows. Economic and mathematical modeling of the labour potential enables to solve problems of control at the regional level. Solution of the optimal control task of the unemployed people of working age, who did not find work, enables to explore the processes of formation and use of the labour potential of the region and also brings into focus analysis of peculiarities of these processes development under conditions of a market economy in Russia within the specific region [12].

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# BASIC CATEGORIES IN UNDERSTANDING THE ESSENCE OF THE STRUCTURE IN PROFESSIONALLY SPEECH CULTURE

Theoretical analysis of the professionally-speech culture has foundations to determine the basic functions and communicative levels after experiment held in SSAU.

**Key words:** professionally-speech culture, cognitive level, communicative level, reflexive level, interpersonal communication; interpersonal perception.

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**Having realized theoretical analysis of the professional culture of the leader the number of researchers allowed us to determine the basic functions which most fully reflect the content of professionally- speech culture in the specialists of the agribusiness. In our view, there is a following number of functions:**

– information- communicative – specifies the creation of necessary information stream in the process of interrelations, ensures the development of professional- speech culture in collective, includes the skills to clearly present thoughts, to support conversation, to transfer rational and emotional information;
– analytic- design – ensures mastery of the knowledge in the standards of literary language, with the style of professional speech, by the steady habits of their application, necessary for fulfilling this form of activity, develops ability toward the variety of their application, means of speech expression, decision making, analysis of contact and its results, capability for planning, which composes the basis of the systematization of all conducted measures;
– activity- regulating – includes the organization of the implementation of administrative decisions, the guarantee of correction speech situations, the creation of socio-psychological and pedagogical conditions, which impel to the productive communicative contact in the process of fulfilling the professional responsibilities, the skill to determine purpose and to understand the situation of contact, the calculation of the social and individual features of the personality of speaker;
– Forming- developing – consists of the active influence on the process of speech development and self-development in the workers of the working associations of social- communicative characteristics, and also on the productive realization of their oratorical mastering in the working activity;
– preventive - bringing up – consists in prognostication, warning and liquidation undesirable manifestations of communicative behavior, habits of prognostication development of dialogue, reaction of speaker, the skill to create and to support the benevolent atmosphere of contact, overcoming and liquidation negative qualities and traits of the nature in the interests of formation professionally- speech culture. The system of the utilized functions allowed from the variety of knowledge about the speech structures, which are contained in science, to isolate the structure, which occurs as adequate.

The structure of the professionally- speech culture of the specialist in agribusiness is seen by us in the unity of three components: cognitive, communicative and reflexive. Its structure, revealed on the basis of scientific analysis and refined with the aid of diagnostics, gives the integral picture of professionally-speech culture in the composition of the enumerated components carried out by us. The components represented in the structure contain:

1. Cognitive: the knowledge of professional-speech contact; the skill to use knowledge in professional activity;
2. Communicative: interpersonal communication; interpersonal perception;
3. Reflexive: capability for self expression in the professional- speech activity; the ability to have an effect on partner in the contact.

The components (knowledge of professionally-speech contact in the professional activity, interpersonal communication, capability for self expression) chosen in the structure of culture are hence it follows that leading in the process of molding this in the future specialist of agribusiness. In this case we do not deny existence of other factors. The formation of each component is connected with the formation of its characteristics and properties as the parts of the integral system. Cognitive component is the body of scientific-theoretical knowledge about the professionally-speech contact generally and about the role of this culture in it. The level of the development of cognitive component is determined by completeness, by depth, by systematization of knowledge in the region of professionally- speech contact it includes: the knowledge

of the special features in the professional- communicative speech of specialist; the knowledge of the bases in the lexical, orthoepic standards of speech.

Knowledge of special features of the professional-communicative speech in specialist; knowledge of the bases of the lexical, orthoepic standards of speech in the organization of professional contact with the associates; knowledge of procedures and methods of consistency, clarity and accessibility of speech for the effective contact; understanding methods and forms of self-education, self-perfection, self-development in the sphere of the culture of professional contact. In our view, professional activity assumes the start in the communicative component of the portrait is manifested in the skill to establish interpersonal connections, to coordinate its actions with the actions of associates, to select the optimum style of contact in different situations, to seize the means of verbal and nonverbal contact. Communicative abilities are manifested in the collaboration and collective production activity. The communicative abilities include: correctness, meaningfulness, consistency, clarity, cleanliness, accuracy, brevity, wealth, simplicity, expressiveness and emotionalism of speech; ability to adequately receiving the situation of contact; the use of experience of others; knowledge and understanding, its own motives and possibilities in the sphere of the professional-speech culture of contact; ability to forecast interpersonal events; knowledge of the basic methods of contact; possession by oratorical mastering and by the ability to avoid conflicts in the contact. In our view, professional activity assumes the start in the communicative component of the portrait of competitive specialist. For the success in the professional activity to contemporary specialist it is necessary to master the habits of culture speech, to possess linguistic, communicative and behavioral scope of the professional contact.

The following qualities are necessary for this: the knowledge of standards of literary language and steady habits of their application in speech, the skill to follow accuracy, consistency and expressiveness of speech; possession of professional terminology, knowledge of correspondences between the terms and the concepts; possession of the style of professional speech; the skill to determine purpose and to understand the situation of contact; the skill to consider the social and individual features of the personality of speaker; the habits of the prognostication the development of dialogue and reactions; the skill to create and to support the benevolent atmosphere of contact; the high degree of control emotional state and expression of emotions; the skill to direct dialogue in accordance with the purposes of professional activity; the knowledge of etiquette and clearness of its fulfillment were guided. Let us note that in the sphere of agribusiness action the communicative component includes also the skills to consult, to discuss project, plan, program, construction, drawing, technological process, to participate in the creation of the joint projects of the reconstruction of production, to appear with the report, the report at the production conference, the scientific conference. In the structure of professionally-speech culture is seemed to us important the isolation of such component, which would determine the level of the development with self-appraisal, understanding of its own significance in the association, responsibilities for the results of its activity, possession of non-conflicting, which encourages of the contact forms, knowledge itself and self-realization in the professional contact. Such component is, in our opinion, reflexive.

Reflection – this is not simple knowledge or understanding by subject itself, but also the explanation of that how others they know and understand «reflecting person», its personal special features, emotional reactions and cognitive (connected with knowledge) ideas.

In this respect construction by the subject of its own occurs by means of a constant reflection of methods of efficient self-determination in the context of the formed ideals and values. Consequently, reflexive component is manifested in the skill to consciously control the results of its activity and the level of its own professionally-speech development, personal achievements: the formation of such important for the specialist qualities and properties as creativity, empathy, initiative, aim to the collaboration confidence in their speech knowledge and skills; tendency toward the introspection, capability for improvisation, foresight, initiative-taking, critical and innovation reflecting and prognostication of the results of professionally-speech contact in the relations with the associates and the subordinates, to creative imagination. Determining criteria formed of professionally- speech culture, we were guided by its essential characteristics and positions of functional approach. Considering the structure of professionally- speech culture as the unity of its components, we evaluate the degree of its formation according to the following criteria: the application of scientific-theoretical knowledge about professionally-speech contact, about the role of this culture in the solution of professional situations, reasoned advancement of their own opinions in the solution of communicative- production situations (cognitive component); productive participation by verbal and nonverbal means in the contact, the tolerant perception of partner (communicative component); the adequate self-appraisal of the significance of its participation in speach contact; the skill to consciously control the results of its activity and level its own professional development; the correction of its own communicative behavior, aim to the collaboration, the influence on the opinions of others (reflexive component). The given criteria of evaluation in the formation of professionally- culture serves as initial moment for determining the levels of development this quality in the students of agrotechnical (Institute of Higher Education). A question of the determination the levels of development (formation) of personal properties and qualities always attracted attention among the teachers and psychologists. Development is understood as the steady sequence of changes in the qualitative states of systems, connected with the passage to the new level of integrity with the retention of their evolutionary possibilities. Specifically, these qualitative change in the development specify existence the levels, each of which has their own elements.

Concept «level» reflects the dialectical nature of the process of development, which makes it possible to get to know object in entire variety of its properties, connections and relations. The relying on existing theoretical and practical experience, for the previously conducted pedagogical investigations and also to the results of the carried out establishing experiment, we isolated four groups of the students, whom was manifested by typi-

cal special features. This served us as the base to consider the appeared special features of the characteristics for the levels: intuitive (low), normative (average), active (high), creative (highest). The generalized characteristic of intuitive (low) level can be represented as follows:

– Intuitive level (low) assumes the presence of the general ideas of students about the future professional activity and the contact in the working association. The knowledge of the bases of professional pedagogy is absent or they bear surface situational nature. The representatives of this level are characterized by passiveness, closure, they avoid to conduct dialogue, to enter into the discussion, to come out before the audience. The need for the professionally-speach contact bears situational nature, tendency toward improvisation, creation, knowledge of speach is surface, instability of motives is noted
– Normative level (average) provides that the students realize the significance of professionally-speech preparation for their future professional activity, possession in knowledge the principles of formation the theory of speech culture, manifestation of interest in the professional-speech knowledge, presence of capabilities for the partial modification of the existing system in knowledge depending on training situation. The application of professional- speach knowledge during the solution of communicative- production situations bears situational nature. Capabilities for productive speach contact are insufficiently formed. Tolerance in the perception of partner is weakly expressed or it is not developed.
– Active level (high) assumes the formation of the system in professionally-speech knowledge and presence of steady interest in their completion. Students realize the need for mastery such knowledge and skills as the conditions for successful future in professional activity. As a result the developed need for the contact they easily enter into the dialogue, they are included in joint activity, participates in the discussions, they are actively included in contact. They are oriented to the application of speech knowledge during the solution of communicative- production situations, they argumentatively defend their point of view. They adequately evaluate their own role in the fulfillment of joint targets. Capability for the rendering influence on the opinion of partner bears situational nature. They approach self-actualization in the contact.
– Creative level (highest). Students without difficulties are included in contact, take active part in the consideration of the debating points. They have perfect knowledge in professionally-speech culture; realize various forms of communication for different situations.

Thus, the investigated by us structure of professionally-speech culture, and also different degrees for the formation of the components made possible determine the levels of development properties indicated, which give us the right of effective influence on the process of development and self-development professional- communicative functions for the future specialists in agribusiness.

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