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Perspectives for agriculture of Vojvodina in the light of scenarios and models elaborated in the framework of the research projects of the European Union

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INTRODUCTION

Serbia is attempting to become a member of the European Union and currently enjoys the status of a potential candidate country. On November 6th, 2009, the Minister for Foreign Affairs, Vuk Jeremić, declared in the European Parliament the readiness to file the application for the membership in the European Union. This has an enormous significance for the immediate future of Vojvodina and the farming sector, which is the subject of the present report. The degree of success of the accession negotiations process shall have an essential bearing on the direction and dynamics of the socio-economic development of the autonomous province of Vojvodina. We shall concentrate in this report on the optimistic scenario, assuming the positive attitude of the European Union and the full involvement of the country in the fulfilment of the consecutive stages on the way to the European Community. Thus, we shall devote less attention to the pessimistic scenario, which could consist in assuming "extension fatigue" and disadvantageous internal circumstances. The general assumption is that every country with a political and economic system tending toward stability, aiming to satisfy the basic requirements of the European Union, has the right to be a member of the Community.

At the present time Serbia cannot take advantage of the means disbursed in the framework of the pre-accession assistance programs, to which, for instance, Croatia and Macedonia are entitled. Yet, the hopes for acquiring certain assistance funds from Brussels motivates the Serbian administration for preparing respective legal acts and strategic documents, conform to the EU requirements, including the Common Agricultural Policy. One of these documents is the Strategy of Development of the Serbian Agriculture, of 2005, whose declared goal is the development of the competitive and profitable farming. Then, in 2009, the Strategic Plan for the Development of the Rural Areas was published, for the years 2009-2013, which envisages a number of concrete solutions for the farming sector.

Agriculture is supported by the state through special assistance programs and subsidies. B. Katic, D. Cvijanovic and N. Kijajic (2009) distinguish a number of essential areas of support: investment inputs into agriculture, enhancement of competitiveness, raising of the professional skills of the farming cooperative employees, diversification of activities in farming economy, strengthening of the potential networks of links. All these kinds of activities demonstrate that the state administration attaches high importance to the development of the countryside and agriculture.

The present report should also be seen in the context of these activities, as being an output from the research project entitled *Perspectives for agriculture of Vojvodina in the light of scenarios and models elaborated in the framework of the research projects of the European Union*, carried out by the Rural Areas Research Team of the Institute of Geography and Spatial Organization of the Polish Academy of Sciences in collaboration with Professor Nebojsa Novkovic from the University of Novi Sad, upon the commission from the Centre for Strategic Economic Studies "VOJVODINA-CESS" Ltd. The fundamental purpose of the study is to indicate the perspectives of development of farming in Vojvodina on the basis of development scenarios and models, contained in various projects, financed from the Union means, and the experiences in this respect of the new EU members from Central and Eastern Europe.

THE CONCEPT, OBJECTIVES AND METHODOLOGY

Given the internal conditioning and the new challenges facing the agricultural economy of Vojvodina in the European context, it turned out necessary to undertake the study of perspectives for agricultural development in the region.

Agriculture constitutes a very important sector of economy on the territory of Vojvodina. More than 76% of the area of this region is constituted by arable land, with dominating soil type being chernozems, extremely favourable for agricultural activities (Adzic, 2008). Development of agriculture finds there also advantageous climatic conditions, appropriate water resources, tradition in farming production and food industry, as well as qualified labour force. Employment in agriculture (together with forestry) was in 2005 at the level of 9.6% (*Integrated...*, 2006).

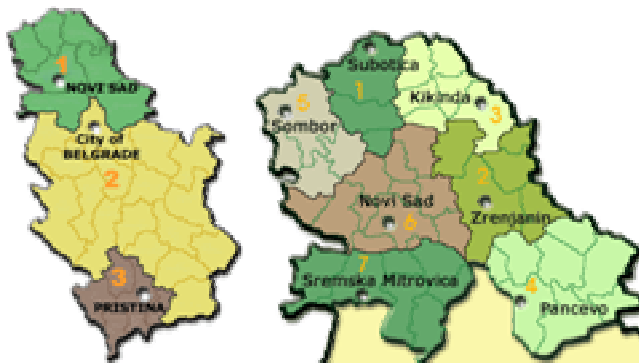


Fig. 1. Location of Vojvodina and its administrative divisions

Source: Statistical Office RS

The primary goal of the project here reported is to present the possible scenarios of development of agriculture in Vojvodina, basing on the models elaborated in the projects, financed by the European Commission. European Commission has been financing a number of research projects, whose purpose has been to develop new development scenarios for agriculture and rural areas of the countries of European Union and the associated countries. An important goal of these undertakings was, in particular, to provide the basis for the recommendations related to the establishment of a new model of the Common Agricultural Policy. The projects, now underway or terminated, include, in particular, CEEC AgriPolicy, TERESA, ESPON EDORA, EURURALIS (partly financed by the Dutch Ministry of Agriculture). These projects shall now be shortly characterized.

CEEK AGRI POLICY Agro economic policy analysis of the new member states, the candidate states and the countries of the western Balkan

The main objective of this project is to stimulate the networking between organisations involved in agro-economics analysis, as well to provide scientific input for policy making. The project is focused on the following countries: New Member States (Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia), the Candidate countries (Croatia, Macedonia and Turkey), as well as countries from the Western Balkan (Albania, Bosnia & Herzegovina, Kosovo, Montenegro and Serbia).

A number of intermediate goals are being attained in the framework of the project. First, the project established quite a detailed database of institutions and scientists dealing with the problems of development of agriculture and rural areas in the countries participating in the project. Second, several dozens reports have been elaborated in the framework of the project on the development perspectives of individual agricultural markets (e.g. of meat, milk, wine, sugar) and the contemporary conditioning of development of rural areas (like, e.g., access to credit, technological transfer). An important quality of these reports is that they have been prepared by the experts from respective countries, all of them, though, according to a unified scheme. Owing to this, there is a possibility of comparing directly the situation in different countries, insofar better that the coordinators of the project from France and United Kingdom prepared synthetic reports for each of the specific issues. Third, the output from the project is available through a specially developed website, which is assumed to constitute a platform of cooperation and exchange of views between researchers and policy makers.

TERESA *Types of interaction between Environment, Rural Economy, Society and Agriculture in European regions*

The key theme of TERESA are the mutual interactions taking place between agriculture, the environment and other aspects, social and economic, of the wider rural development processes. The project develops a perspective, which looks at rural development from a holistic perspective, thus understanding the region itself as a system wherein actors are embedded and follow their complex mixture of goals and behavioral patterns. The aim of this project was to deepen the understanding of the advantages and disadvantages that agricultural activities receive from the diversification of rural economy and *vice versa* – especially the different types of agricultural production (differentiation along their mode of production – conventional vs. organic; small scale vs. large scale) will have to be paid attention to. Another important aim of the project is to identify the advantages and disadvantages that agricultural and other economic activities receive from the improvement of the regional environment and the countryside. First of all, the project identifies the relations, occurring in rural areas between agricultural production, processing, society and environment (e.g. detailed description of the production chains, associated with various agricultural products). Besides, general models were developed, reflecting the examples of interactions between farming and the remaining elements of the socio-economic sector over different types of rural areas in Europe.

ESPON EDORA *European Spatial Planning Observation Network – European Development Opportunities in Rural Areas*

The over-arching aim of the project is to develop a better understanding of the development opportunities and challenges facing diverse types of rural areas in Europe. The underlying demand for such knowledge is to support targeted policy development, relating (*inter alia*) to job creation and social change. In particular, understanding gained during this project should support the evolution of the Territorial Cohesion Green Paper, the Fifth Cohesion Report, discussions on forthcoming reforms of the CAP post-2013, and the pursuit of the Lisbon and Gothenburg (EU's Sustainable Development Strategy) agendas. Typology of rural areas has been developed within the project, based on the agricultural production type and demographic trends. Besides, a number of subject-oriented reports were elaborated, dealing with the influence of various elements of the economic, social and natural structure on the development of rural areas (e.g. climate, demography,

employment, farming production). Likewise, detailed diagnoses were prepared for a dozen of European regions – the respective descriptions were prepared so as to allow for the indication which of the three factors distinguished has the strongest influence on the further development of these areas (the agri-centric narrative, the urban-rural narrative, or the narrative of the capitalist penetration).

EURURALIS Scenario study on Europe's Rural Areas to support policy discussion

The main aim of the project is to support policy makers in discussions about the future of rural areas in the EU27 with scientifically sound data. The EURURALIS project is constructed on the principle of interrelations between four dimensions. The first of them is the thematic scope – Planet, People, Profit – these three condition categories contain several dozen detailed features. The second dimension is the space – the project provides the data for the 27 EU member countries at various levels of spatial disaggregation. The third dimension is time – the time horizon in the project is divided into decade intervals: 2000, 2010, 2020, 2030. Finally, the fourth, most important dimension is the possibility of choosing a scenario among four contrasting world visions – A1 „Global Economy” (e.g. market support phased out), B1 „Global Co-operation” (e.g. market support strongly reduced), A2 „Continental Market” (e.g. market support slightly reduced and targeted at self-sufficiency), B2 „Regional Communities” (e.g. market support targeted at self-sufficiency and employment). By combining all the four dimensions one can define the scenario of development of various kinds of conditioning factors (e.g. demographic) in particular regions over different time horizons, depending upon the development model adopted for Europe.

* * *

The primary goal of the present project was intended to be achieved through the following activities:

1. indication of the directions of development of agriculture in Vojvodina in comparison with other regions of the European Union in the light of various model analyses;
2. comparison of the development projections, elaborated for Vojvodina, in the projects analysed – search for the coherent and divergent development perspectives of the farming sector in Vojvodina;
3. determination of the alternative development scenarios depending upon the adopted agricultural policy and economic orientation.

The methodology, applied in the realisation of the project, encompasses the following main components:

- analysis, including comparison, of the development perspectives for the farming sector, elaborated in the selected research projects of the European Commission;
- analysis of the database of statistical data, characterising the state of agriculture and the conditions for agricultural development in Vojvodina;
- analysis of the regional strategic documents, concerning Vojvodina, in the context of perspectives for the development of agriculture;
- and realisation of the field studies (field trips, unstructured interviews, focus group interviews, expert interviews).

The detailed study process was implemented in six stages, with second, third and fourth stages considered to have key importance (Table 1):

1. Collecting the information from and studying selected research projects of the EC, concerning agriculture, along with respective statistical and cartographic materials, as well as strategic and planning documents;
2. Collecting the literature and conducting the diagnostic study of the Vojvodina agricultural sector development;
3. Identification of scenarios for the agriculture of Vojvodina, elaborated within the projects considered; in the cases of projects, which have not treated explicitly Serbia, projection of development trends constructed for other regions of the European Union, having conditions and structure of the farming sector similar to those of Vojvodina, was applied;
4. Field studies in Vojvodina, having as purpose to diagnose the current situation of agriculture and to verify the assumptions of the scenarios analysed; besides, interviews conducted with the representatives of the local authorities, farmers and food processing entrepreneurs, and one-day focus group interview was carried out in the seat of the Vojvodina Regional Chamber of Commerce in Novi Sad;
5. Technical and substance-matter analysis of the materials collected;
6. Development of the final report and multimedia presentations; multiplication of the report on 200 CDs, on which complementary material was also contained.

Table 1. Time schedule of the project

Work package	2009				2010								
	IX	X	XI	XII	I	II	III	IV	V	VI	VII	VIII	IX
1. Collecting the information from and studying selected research projects of the EC													
2. Diagnostic study of Vojvodina agricultural sector development													
3. Identification of scenarios for the agriculture of Vojvodina													
4. Field studies in Vojvodina													
5. Technical and substance-matter analysis of the materials collected													
6. Development of the final report													

EUROPEAN TRENDS IN AGRICULTURE

Common Agricultural Policy

The agricultural policy, established together by the six founding countries of the present European Union, was formulated for the first time in 1957 with the following goals:

- guaranteeing of food security,
- securing food prices acceptable for consumers,
- ensuring adequate living standards for the farming population, compared to the population employed in other sectors of economy,
- increasing productivity of agriculture and stabilising the markets (see Tomczak, 2009a).

Since that time there has been a distinct modernisation and evolution of what became the Common Agricultural Policy (CAP), consisting in the modification of the instruments of agricultural policy that the Union used, including the financial instruments. In short, one can state that the general change consisted application of stimuli that would motivate farmers to abandon farming production. Thus, for instance, the reform of MacSharry from the beginning of the 1990s consisted, in particular, in making the direct payments dependent upon the decrease of cultivated areas or lowering of intensity of livestock production, encouraging farmers to apply the production methods that protect the environment and the quality of the rural areas, to afforest the agricultural lands of lower quality, to retire early and transfer the farm so as to improve the agrarian structure (Chmielewska-Gill et al., 2003). Besides, increasing attention started to be paid to the development of rural areas and to support for the grass-roots initiatives, like in the LEADER programme. In the successive strategic documents (the Cork Declaration and Agenda 2000) the postulates were forwarded of contributing to the increase of the competitiveness of European agriculture, integrating environmental concerns, and preparing for enlargement of the Union. Increasing attention has been paid to the multifunctionality of agriculture, perceived in the perspective of a “producer” of not only economic, but also environmental and social public goods (*European background of rural development*, 2006).

The Treaty Establishing the Constitution for Europe (2005), signed in December 2007 in Lisbon stipulates that the goals for the Common Agricultural Policy would be, in particular, to support technological advance and the rational development of agricultural production, as well as optimum use of production factors, especially labour force, to secure an adequate standard of living of the rural population, to guarantee safe delivery of food products and agricultural raw materials, as well as ensuring reasonable prices in supplying the consumers.

In the period of the last two decades we have been observing a clear increase of the share of expenditures directed to preservation of the environmental values, maintenance of cultural landscapes and the generally conceived development of rural areas. On the other hand, the share of means for the strictly productive purposes has been decreasing (Fig. 2).

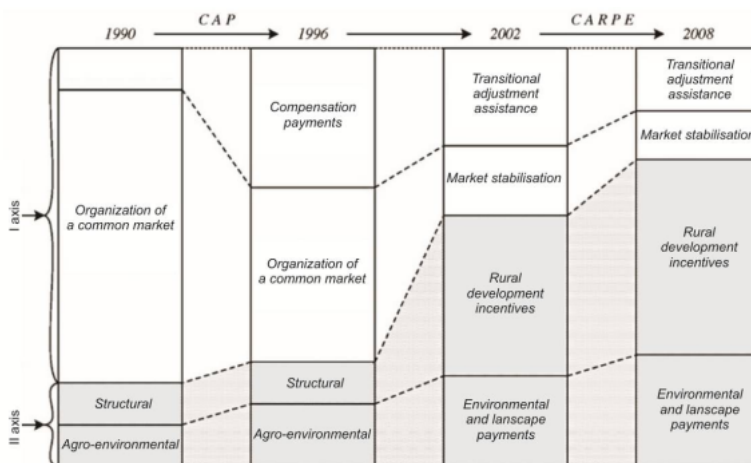


Fig. 2. Component elements of CAP (Common Agricultural Policy) and CARPE (Common Agricultural and Rural Policy for Europe) after A. Buckwell
Source: own elaboration on the basis of Tomczak (2009a, p. 29).

European Union started, therefore, the changes in the Common Agricultural Policy, whose most important element is the evolution from the strategy of supporting production towards the strategy of increasing expenditures on rural development. This reform could be defined as tending to support people, and not products. The reform envisages compensation payments to farmers, not only for their produce, but also for the service to preservation of goods of public character, like, e.g., landscape and protection of environment (Tomczak, 2009a). So, we can sum up by saying that the evolution of the agricultural policy of the European Union, which is taking place, is aimed at:

- modernisation of farms as well as of marketing and food-and-agricultural processing,
- improvement of the living standards in rural areas and promotion of diversification of activities of the rural population,
- protection of natural environment and preservation of the unique heritage of the European countryside.

Similar conclusions result from the health check of the Common Agricultural Policy, conducted by the European Commission in 2008. This check brought the implication of the need for further simplification, streamlining and removal of various constraints on the CARPE. First of, it is postulated to yet decrease the connection between the direct payments and the magnitude of market-oriented production and of the farms, including the decrease of the scope and significance of market intervention. This is supposed to free the farmers of the unwelcome limitations and allow them to maximise their productive potential. Besides, it is postulated to put in motion the mechanism of limitation of the direct payments to the farmers and transferring the means onto the budget for rural development, which is expected to enable the European farming sector to react better to new challenges and opportunities, including climate protection, necessity of better water resources management and

protection of biodiversity (Tomczak, 2009b). The changes proposed include also application of the cross-compliance principle, conform to which support to farmer incomes would be conditioned by the satisfaction of the requirements from the domain of environmental protection, food safety and animal wellbeing.

It should therefore be emphasised that according to the European Union, support for the European agriculture would be more legitimate for cultural, social, historical and environmental reasons than on account of economic rationality and profitability.

It is interesting to note that a similar transformation of the farming sector is being postulated, as well, by the OECD in the report *The New Rural Paradigm Policies and Governance* (2006). In this new paradigm agriculture is treated on a par with the remaining sectors of the rural economy; it is assumed that support for development ought to have the investment-oriented character, and the dominating to date role of the state administration and the farmers ought to be distributed among various partners (*The New Rural...*, 2006). The new development paradigm, side by side with a broader emphasis on competitiveness and more attention paid to the multifunctional development, brings also important solutions for the prevailing numbers of the smaller peasant farms (Table 2). The new approach to the development of the rural areas provides these farmers with broader possibilities of deciding on the direction of development of their farms, since only a limited group have the chances of effective competition on the Union markets of the farming sector (Floriańczyk, 2007). Besides, in the future, along with improvement of spatial accessibility and further development of information and communication technologies, one should expect the expansion of the habitat function of the countryside. Under such conditions, attractiveness of rural areas shall be reflected through the functioning of farms, offering direct service for the new group of inhabitants, parallel to the farming activity, aimed primarily at the "cultivation" of the rural landscape.

Table 2. New paradigm of development of rural areas after OECD

	Old approach	New approach
Objectives	Equalisation, farm income, farm competitiveness	Competitiveness of rural areas, valorisation of local assets, exploitation of unused resources
Policy orientation	Sectoral	Territorial
Key target sector	Agriculture	Various sectors of rural economies
Main tools	Subsidies	Investments
Key actors	National governments, farmers	All levels of government (supranational, national, regional and local), various local stakeholders (public, private, NGOs)

Source: *The New Rural Paradigm* (2006).

Finally, it is worthwhile to characterise the currently valid concept of the policy of development of rural areas for the years 2007-2013 (Table 3). The basis for this current policy is constituted by four axes:

1. improvement of competitiveness of the agricultural and forest sectors,
2. support to land management and improvement of environment quality,
3. improvement of the standard of living and diversification of the economic activity,
4. support for the grass-roots local development (LEADER).

For each of these axes the minimum value of financial means was defined, disbursed from the Common Agricultural Policy, namely for Axis 1: 10%, Axis 2: 25%; Axis 3: 10%, and Axis 4: 5%, in new member states – 2,5%, so that half of the means is allotted from the top. Then, the other 50% can be directed by each country individually to the respective activities in the framework of the four axes, depending upon the preference for the policy of support for agriculture or for rural area development (*European background of rural development*, 2006).

The primary goal of the activities proposed in Axis 1 is to increase competitiveness of the European agriculture, taking into account the differentiated potential of the farming sector in various regions. Competitiveness of agriculture is conceived not only in economic categories (like, e.g., decrease of production costs, increase of farm magnitude, increase of technological innovativeness and increase of commercial product value), but is also associated with the preservation of viability on the farms, environmental protection and social development (e.g. diversification of economic activity, application of more environment-friendly technologies).

The essential goals of the Axis 2 concentrate on the preservation of farming on the areas featuring definite environmental hardships and on support for the increase of forest areas in Europe. Hence, the actions proposed concentrate on the sustainable development of rural areas and are supposed to encourage agricultural producers to use land in a way ensuring protection and enrichment of the natural and cultural landscapes.

The main objective of the activities in the framework of the Axis 3 is to preserve “*living countryside*” and to support the socio-economic structures, especially within the peripheral areas, but also within the suburban zones. Investing into rural economy and society ought to contribute to the improvement of living conditions and standards, to enhanced accessibility of the basic elements of infrastructure, and to a healthier and more diversified environment. The activities in the framework of Axis 3 are most closely associated with other initiatives, linked with regional and local development in the European Union, in particular, through the emphasis on differentiation of the economic activity on the farms and support to non-agricultural activity within rural areas.

Axis 4 (LEADER) is aimed at assisting the grass-roots socio-economic activities, which make use of the endogenous potential, present in the local structures. Through creation of the local action groups (LAGs) activity is supposed to be initiated, corresponding by its subject scope to the activities mentioned for the first three axes.

Table 3. Details of the New CAP (2007-2013)

Objective setting		EU strategy National strategy RD programmes
Axis 1 competitiveness	measures	Human resources: Vocational training and information actions Young farmers Early retirement Use of farm advisory services Setting up of farm management, relief and advisory and forestry advisory services Physical capital: Farm/forestry investments Processing/marketing/co-operation for innovation Agricultural/forestry infrastructure Restoring agricultural production potential Quality of agricultural production and products: Meeting standards temporary support Food quality incentive scheme Food quality promotion
		Transitional measures: Semi-subsistence Setting up producer groups
	funding share	minimum 10%
	EU co-financing rate	max 50/75 %*
	territorial application	all rural areas
Axis 2 land management	measures	Sustainable use of agricultural land: Mountain LFA Other areas with handicaps Natura 2000 agricultural areas Agri-environment/animal welfare (compulsory) Support for non-productive investments Sustainable use of forestry land: Afforestation (agricultural/non-agricultural land) Agroforestry Natura 2000 forest areas Forest environment Restoring forestry production potential Support for non-productive investments
	baseline (agriculture)	cross compliance
	funding share	minimum 25 %
	EU co-financing rate	max 55/80 %*
	territorial application	all rural areas
Axis 3 wider rural development	measures	Quality of life: Basic services for the rural economy and population (setting up and infrastructure) Renovation and development of villages Protection and conservation of the rural heritage Economic diversification: Diversification to non-agricultural activities Support for micro-enterprises Encouragement of tourism activities Training skills acquisition and animation: Training and information Skills acquisition, animation and implementation
	funding share	minimum 10%
	EU co-financing rate	max 50/75 %*
	territorial application	all rural areas
Leader axis	implementation	Leader approach for selected territories within the scope of the 3 thematic axes
	funding share	minimum 5 % (2.5 % in new member states)
	EU co-financing rate	max 55/80 %*
	territorial application	all rural areas, selected territories
*The first co-financing rate refers to all regions except Convergence regions, the second co-financing rate is applied in the Convergence regions		

Source: CEC, 2006.

Contemporary features of the Central-Eastern European agriculture

The EU countries from East-Central Europe are characterised by different agro-ecological conditions. Consequently, they differ as to the directions of agricultural production, especially in the domain of plant production. As far as livestock husbandry is concerned, the countries feature as a rule similar possibilities, and so in terms of directions of animal production the differences between the countries considered are relatively smaller.

The differences between these countries are more pronounced in the domain of the level of development of agriculture (Table 4). This is the effect of a number of processes and phenomena of historical, political, economic and social character. Considering the production effects obtained, the countries of Central Europe here considered can be classified into three groups. The first of them is constituted by Czechia, where agriculture attains the relatively highest production effects among all the countries analysed. The second group is composed of Hungary, Poland and Slovakia, while the third, most "backward" group consists of Romania and Bulgaria.

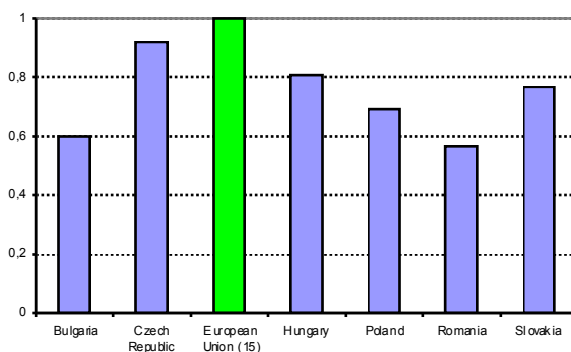


Fig. 3. Productive effects indicator¹ in agriculture of the countries of Central Europe and the EU 15 in the years 2000-2005 (Bársk 2008)

Tab. 4. Average yields of selected crops, milk yield of cows and meat yield of pigs in the years 2000-2005

Country	Crop yields (in tons)			Milk yield per cow (in kg)	Meat yield per pig (in kg)
	wheat	barley	potatoes		
Bulgaria	3.02	2.83	13.59	3,47 0.5	75.7
Czechia	4.76	3.98	22.80	5,78 6.4	94.5
EU 15	5.36	4.28	36.88	5,85 0.7	88.4
Hungary	3.95	3.26	21.16	6,07 4.3	92.1
Poland	3.69	3.05	18.37	4,17 0.7	85.8
Romania	2.57	2.48	14.15	2,99 3.3	85.2
Slovakia	3.92	3.31	15.53	5,02 1.7	74.3

Source: FAOSTAT

In the agriculture of highly developed countries the basic source of revenue is the livestock production, to which the crop production is largely subordinated. This is the effect of a simple economic calculus – products of animal origin, as subject to more

¹ The indicator was calculated on the basis of six diagnostic features – wheat yield, barley yield, potato yield, milk yield per cow, meat yield per pig, meat yield of cattle – averaged for the years 2000-2005. Each feature was compared with EU15 = 1.

advanced “processing” command relatively higher prices than products of plant origin. Yet, crop production plays a particularly important role in the agriculture of the countries of Central Europe. Thus, for instance, in Poland in 2002 crop production accounted for approximately 53% of the global production of agriculture (Bański, 2007), and in Romania in 1999 – for as much as 64% (Rusu, Florian, 2003).

Another feature of agriculture of Central Europe is a relatively high share of population employed in this sector. This confirms the still high significance of agriculture in the national economies of these countries. The recent years, though, have been marked by a dynamic decrease of the share of agriculture in the gross domestic product (GDP). Thus, for instance, in Hungary it decreased from 13.7% in 1989 to 2.9% in 2003. This is accompanied by an increasing outflow of the population from farming to other sectors of economy, mainly to service and trade (Bański, 2004). Yet, in comparison with the countries of Western Europe the level of employment in agriculture of Central Europe is still high. According to the data from FAO, in 2004 farming population constituted approximately 10% of the total population of these countries, while in EU 15 it accounted for less than 4%.

After the political and economic transformation, all the countries of Central Europe started to privatise the assets of the farms having belonged to the former socialist sector and to return a part of the nationalised property to the previous owners. This happened according to a variety of scenarios, whose shape depended upon the manners of realisation of reforms having taken place in the period of the socialist economy.

The downfall of the socialist sector in agriculture and the deep ownership transformations caused essential changes in terms of agricultural land use. The general decrease of profitability of production in agriculture caused shrinking of the area sown and lowered intensity of crop production. This was accompanied by the devastation of some elements of infrastructure (irrigation systems, land improvement facilities, farm buildings, etc.).

After the countries of Central and Eastern Europe joined the European Union, financial means started to flow into the rural areas of these countries in the framework of various programmes and projects. Their common aim has been to support development and even out the development differentials. An important part of these means supports the farming sector. Owing to this, during the last few years an improvement can be observed of the condition of farms and the increase of their competitiveness. The Community programmes concern very differentiated aspects of rural development. Support is extended to the extension of technical infrastructure, technical and technological modernisation of farms, as well as agricultural service. Attention is paid to the improvement of professional skills of the farm owners, improvement of the social capital and economic activation of the rural population. Consequently, there has been an improvement in the productive effects of agriculture and in the living standards of the inhabitants of the countryside. It can be hoped that in the nearest years this process shall get accelerated. As the period of membership in the European Union has been very short, no deeper conclusions can as yet be drawn concerning the directions of changes in agriculture.

Examples of transformations in the farming sector in selected regions of Central-Eastern Europe

The studies of the perspectives for the development of agriculture in Vojvodina had been preceded by the diagnosis of the state and analysis of perspectives for the farming sector in selected regions of the European Union. When selecting the regions, the following criteria were kept to:

- location in Central-Eastern Europe,
- similar conditions for agricultural production,
- similar directions of agricultural production,
- inclusion of the regions in the chosen Community projects.

Due to application of these criteria three regions were selected, which were the subject of detailed investigations in the projects TERESA and ESPON EDORA, i.e. the regions of Chełm-Zamość in Poland, Timis in Romania and Bacs-Kiskun in Hungary (see Fig. 4).



Fig. 4. Location of the regions considered (*TERESA – Case study report*)

Source: ÖIR based on Euro Geographics 2001 for the administrative boundaries

Chełm-Zamość region (Poland)²

Main characteristics

The region of Chełm-Zamość region is located in the eastern part of Lublin voivodship (Fig.5). In terms of economy it is one of the most agricultural regions in Poland. Rural areas are characterised by: high share of farmland, high input of labour into agriculture, high ratio of employment in agriculture, very high number of relatively small farms and peripheral significance of other economic functions. The region is an

² Based on the reports from the TERESA and EDORA projects.

example of an area characterized by the agrarian fragmentation as the result of a combination of the economic and political phenomena, which took place in historical past, especially during the period, when Poland was partitioned between Russia, Prussia and Austria, in the 19th century. This brought about the formation of a high number of very small farms, mainly of self-supply (subsistence) character.

The agricultural land is the dominant form of land use in the region as it accounts for 70% of the total territory. Therefore, arable land prevails, accounting for approximately 90% of the total farmland. The role of other categories of land is marginal. On the areas with lower soil quality or on the wet areas larger surfaces of meadows and pastures appear. Permanent crops account for only 1% of the agricultural land.

The region is characterized by a relatively high soil quality. In the structure of farming an important role is played by plant production: mainly wheat, sugar beet, fodder corn, and locally – vegetables, hop, tobacco. Over the last years no bigger changes occurred in the land use structure.

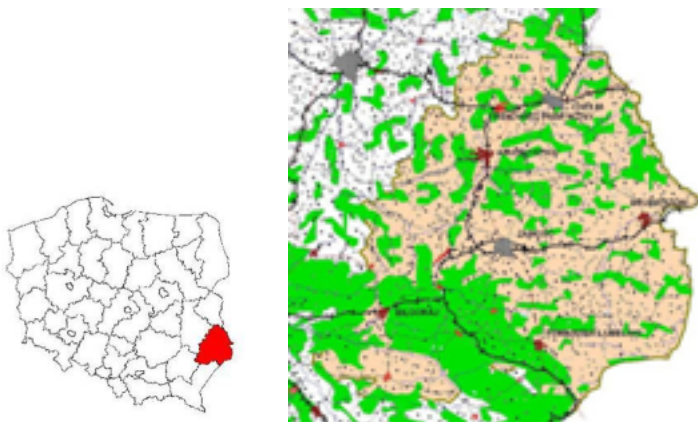


Fig. 5. Location of the Chełm-Zamość region

The rural character of the Chełm-Zamość region is demonstrated by a clear domination of the population living in the countryside. In terms of demographic situation the region can be classified as a problem area (Bański 2001). It is characterized by depopulation, ageing of the population and the reproduction problems.

During the long period there has been a decrease of the population number in the region. This is the effect of the natural decrease as well as migration outflow to other regions. The consequence of the decrease in the number of births is the drop in the number of young persons and slow increase of the share of persons in post-productive age.

The Chełm-Zamość region features high share of population employed in agriculture (approximately 50%), much above the national average (12%). Lack of industry and low degree of urbanization cause that only around 10% of agricultural population

takes up additional jobs outside of farming.

In the 1990s, due to structural changes in the economy, reflected, in particular, through reduction in employment, layoffs affected first of all the farm population. This was caused not only by the usually low professional skills of this population, but also by the possibility of getting odd jobs in farming. There was a drastic drop of the number of bi-occupational population, linking work on the farm and outside of it (Bański 2004).

Agriculture makes inadequate use of the natural productive potential. Theoretically it is able of achieving much better production effects than it does at present. Productivity is reduced by the flawed agrarian structure (small, fragmented farms), limited expenditure on technical means of production, low level of farmers' education and ageing of the population.

Contemporary changes and perspectives

Given the peripheral location and low degree of urbanisation and industrialisation, the primary direction of development of the region will continue to be associated with agriculture, with a contribution from forestry and tourism. Conform to the concept of the European model of agriculture, this sector, side by side with the basic function of food production, fulfils essential roles in the domains of protection of the environment and landscape, as well as preservation of biodiversity. The concept of multifunctional agriculture offers the possibility of associating productive functions with additional activities, oriented at diversifying the activity profile of the farm and the household. The regional and local strategic documents envisage such a role for the agriculture of the Chełm-Zamość region.

During the last years a process has been observed of deepening division of the farms into two groups. The first group is constituted by the traditional farms, producing mainly for own purposes or only a little for the market. The second group is made up of the commercial farms, with specialised production, making significant investment outlays into production modernisation.

The traditional farms have less and less chances for development and capacity of competing on the food production market. Some of these farms undertake an effort of modernisation and gradually strengthen their competitiveness. The remaining ones, for various reasons undergo stagnation or collapse.

In general, an increasing polarization of farms has been observed in the region considered in the recent period. The significance of the large and commercial farms increases, while economic situation of the smaller farms undergoes erosion. In the nearest years one can expect continuing elimination of the non-profitable farms, whose land would be taken over by the larger and stronger farms.

Lack of realistic perspectives for the development of other branches of economy than agriculture caused that since the 1990s the regional and local authorities started to perceive tourism as an opportunity for bettering the economic situation. Zones meant for the development of tourism have been designated in the region within the spatial development plan of the province. Quite important financial means were devoted to organisation of the agri-tourism training programs, conducted, in particular, by the agricultural extension service centres. Preferential credits were provided for the agri-tourist activity. Due to this encouragement many farmers got involved in the management of agri-tourist farms. They formed agri-tourism associations, of which

eight have been registered on the area considered here, encompassing with their reach a significant part of the region.

The fundamental barrier to the development of modern commercial agriculture is agrarian overpopulation and the associated high excess of demand over supply of land. It is very difficult to enlarge a farm and this takes place mainly by tenure. Farmers, even those owning the smallest farms, are not willing to sell land, which is treated as a kind of capital insurance for the case of "hard times". One should also remember of the "attachment to land", resulting from the historical past of the region.

Farms in the region specialise first of all in crop production, mainly in cereals. In some places hops, tobacco, raspberries and legumes are grown on a small scale. Given the increasing interest in the alternative ways of using rapeseed, first of all – the biofuels, one can observe during the recent years an increased share of cultivation of rapeseed among all kinds of farms, including those featuring low farming culture. Some farmers, side by side with growing rapeseed, deal also with pressing rapeseed oil using traditional methods.

Of inestimable importance to agricultural change and development, and above all to the initiation of rural activity away from farming, is the level of education of regional population. While the decade that has recently ended brought favourable changes, the levels of education among people are still below those of urban dwellers. This is particularly true of the populace linked to the very small-scale, individually-owned, farms.

Increase of productivity and modernisation are facilitated by the national and foreign assistance programs. The number of farms taking advantage of various forms of assistance is growing from year to year. In the case of programs, addressed at farms themselves, the biggest number of projects are implemented in the commercial farms. Owing to this, the farming function is being strengthened on the areas featuring competitive agriculture.

In the next 10-15 years the economic significance of agriculture in the income structure of individual rural households will get reduced. Nonetheless, the character of the region in terms of agriculture will have changed anyway, as regards both land-use and landscape. Thus, the proportional decline in the role played by farming in people's income will have been associated with a diversification of farms. Commercial farms will have grown in significance. There will have been a decline in the significance of farms applying traditional methods over their small acreages. Some of these will have confined themselves to production for their own needs, disappearing steadily from the wider market.

Timis region (Romania)³

Main characteristics

The Timis region, occupying the area of 8,698 sq. km, is located in the West of Romania, close to the boundary with Hungary and Serbia (Fig. 6). It is situated within the confines of the historical region of Banat, split up by the state boundaries into the Hungarian, Serbian and Romanian parts. In terms of physical geography the area of the region is differentiated – the central and western parts are occupied by plains, while the remaining parts have rolling and submontane character, with fragments of

³ Based on the reports from the TERESA and EDORA projects.

differences in the ways unemployment is measured in various countries and the resulting difficulties with comparison of the respective values).

Contemporary changes and perspectives

More than 80% of the territory of Timis is occupied by agricultural land. Of this land, more than 76% is arable land, and 21% - meadows and pastures. In the last few years there has been a decrease of the area of agricultural land, and so, for instance, in the period 2000-2005 the surface of arable land in the region shrank by some 1000 hectares.

Natural conditions are favourable for agricultural production – first of all soil quality. Climate is moderate warm with an influence of the Mediterranean climate. Annual total precipitation is 500-700 mm. Yet, the distribution of precipitation over the year is distinctly uneven, frequently disadvantageous from the point of view of farming. In particular, shortage of precipitation in the summer, and also in spring, brings about significant problems to farming, especially in terms of crop yield. It should be added, as well, that during the last century the region endured both acute droughts and floods.

During the 1980s and 1990s intensive farming resulted in significant damages in the natural environment, especially to the pollution of groundwater with mineral fertilisers. Lack of care for preservation of biodiversity was the reason of disturbance of the ecological equilibrium and the associated pest invasions, e.g. of the field mice. Currently, protection of the environmental resources and shaping of the ecological equilibrium on the land used for farming constitute one of the essential directions of policy in the region, supported by the programs of the European Commission.

According to the Eurostat data, in 2005 there were 88.5 thousand farms, functioning in the region, while in 2003 this number was at close to 111 thousand. There has been, then, a clear drop of this number. The area structure of the farms is dominated by the small holdings – conform to the Eurostat data for 2005, 83% of farms did not exceed 5 hectares of land, while only 1% of the farms had acreage exceeding 50 hectares. This is in agreement with the fact that for 95% of farms their economic magnitude did not exceed 4 ESU, which meant that almost all of the farms had subsistence or only marginally commercial character. Despite the fact that Timis is one of the best developed agricultural regions of Romania, farming struggles here with problems that are characteristic for the entire country, such as the disadvantageous agrarian structure, mentioned above, fragmented productivity, wear of the fixed assets in the farms. On the other hand, it should be noted that these problems take in Timis smaller dimensions than in other regions of Romania, which is linked, in particular, with the foreign investments in the agricultural sector.

The pre-accession SAPARD program contributed only very slightly to improvement of the situation on rural areas, and especially in agriculture. The number of applications successfully filed was low (only 183 in the entire Timis region), which was connected with the shortage of institutions that could help farmers in attempting to obtain support for investment into their farms.

More than 70% of arable land is under cereal cultivation, with dominating shares of corn, wheat and rye. On some 10% of the arable land barley is grown. The area under cereals has been increasing in the years 2002-2004, from 348,000 hectares to 361,000 hectares, while in 2005 there was a drop to 344,000 hectares. Roughly 9% of arable land is devoted to sunflower cultivation, with the respective area in 2005

having also slightly dropped in comparison with the preceding years. There is also a significant share of arable land under fodder crops – roughly 8% of agricultural land. Yet in the 1990s there was quite an important production of sugar beets, which, however, collapsed, due, in particular, to the bankruptcy of the regional sugar factory.

Crop yields are generally moderate, on the average half of the European mean. During a couple of recent years there has not been a significant improvement in this domain for the majority of important crops. Cereal production in 2005 amounted to 1293 thousand tonnes, with the highest share of maize (656,000 tonnes), followed by wheat and rye (470,000 tonnes). In plant production important positions are also taken by perennial crops, legumes and potatoes.

In 2005 there were close to 58,000 of cattle, 362,000 pigs, 417,000 sheep, and 2,071,000 of poultry. In the years 2002-2005 there has been a distinct increase of the number of sheep (by 28%), as well as of poultry and pigs (by 20-22%). The number of cattle decreased a bit, on the other hand. It should also be mentioned that there has been a significant improvement in animal husbandry, which was also linked with introduction of animal varieties featuring better genetic material.

The educational level of the agricultural population is unsatisfactory. Although agricultural high schools function in the region, along with an agricultural university, there is shortage of practical professional training. Foreign investors often send the employees from the region for training to other countries.

In 2006, out of 319,000 professionally active persons, 79,400 worked in the primary sector. The absolute employment in this sector and its share in overall employment are decreasing – in 2003 the share was at close to 30%. Incomes of the farming population are low – roughly half of the average for the persons employed in other sectors. Agriculture generates only 5% of the total income gained.

Agro-tourism develops on a small scale – agro-tourist services are offered by less than 1% of farms. These facilities are located mainly in the eastern, mountainous part of the region.

Bacs-Kiskun region (Hungary)⁴

Main characteristics

Bacs-Kiskun is the biggest of the 19 „komitats”, the highest tier administrative units in Hungary. It is located to the South of the Budapest agglomeration, between Danube in the West and Tisza in the East. To the South, Bacs-Kiskun borders upon Vojvodina in Serbia (Fig. 7). The area of the region equals 8,420 sq. km, which corresponds to roughly 9% of the country's territory.

Climate in the region is advantageous for the farming activity. Annual average of temperature is at about 10°C, and the length of the growing season is appropriate for the cultivation of the majority of crops, popular in Europe. A negative aspect of the agricultural climate is the relatively strong influence of the continental climate, reflected in large temperature drops in winter and wide variability of precipitation. Annual precipitation totals are low and may range from less than 300 mm in the dry years to more than 700 mm in the wet years. Droughts become an increasing problem. The greenhouse effect shall most probably bring about the decrease of the annual precipitation totals below 250 mm, corresponding to the semi-arid climate.

⁴ Based on the reports from the TERESA and EDORA projects.

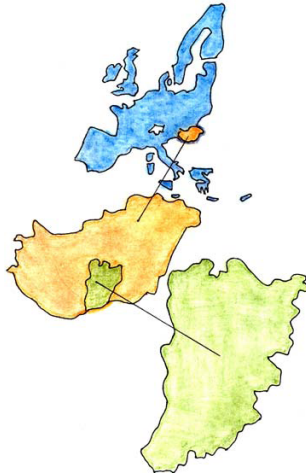


Fig. 7. Bacs-Kiskun region on the map of Europe and Hungary

Source: TERESA Case study report

The area is inhabited by 535,000 people. The feminisation coefficient equals 110.5. Population density is low, 63.3 persons per sq. km. Natural increase is also low. Birth rate is at mere 9.3 per 1,000 inhabitants, while mortality is at as much as 13.4. The rate of natural increase is definitely negative, i.e. -4.1‰. These disadvantageous values of the demographic indicators, persisting for years, cause that only 40.6% of the population belongs to the economically active segment beyond 15 years of age.

GDP per capita in the region is at around 5,900 €, while the joblessness rate is equal approximately 8.6%. Even though this is an agricultural region, employment in agriculture is relatively low for this part of Europe, at 9.4% of the total of economically active population.

The area of the Danube valley was covered with the marshy soils, which were dried in the 20th century and turned into an area of very low fertility. Soil quality and land prices are, however, highly differentiated. Within the south-western fringe, in the vicinity of the town of Baja, a patch of loess is uncovered, and the soils allow for attaining the highest yields. On the other hand, in the surroundings of Kiskunmajs, in the valley of Tisza, very poor soils exist. Since the 18th century they are traditionally used for orchard cultivation and for one of the biggest Hungarian areas of vineyards.

Contemporary changes and perspectives

Family farms own nowadays in Hungary more than half of agricultural land. These farms are often multifunctional, and their degree of commercialisation is much lower than in the case of agricultural companies. The direction of development of agriculture depends largely upon the political situation in the country, since the leftist parties are clearly supporting the farming companies, while the rightist parties favour family farms.

The number of farms in Hungary before the accession to the European Union abruptly dropped. The number of family farms decreased in the period 2000-2003 from 1,000,000 to 770,000, of which only 200,000 are formally registered. The number of agricultural companies is at around 10,000 and has been increasing in recent years, but their total area is slightly decreasing, since, in the light of the current regulations, only natural persons can own more than 300 hectares of land. Yet, the average surface area administered by the agricultural companies is beyond 500 hectares, since a large portion of land is leased. So, large farms in Hungary are in relatively poor financial condition, and in view of the soil quality, their production is characterised by a low level of intensity.

Bacs-Kiskun is an agricultural area, taking advantage of the relatively convenient natural conditions. According to the criteria of OECD 65% of the territory is constituted by the predominantly rural areas, while the remaining 35% - by the significantly rural ones. The share of agricultural land in the region is higher than on the average in Hungary, with the arable land alone accounting for approximately 47% of total area, and for 82% of the agricultural land. Permanent grasslands occupy only 12% of agricultural land, and the traditional farming, based on extensive animal raising has low significance nowadays. Perennial crops take another 5% of agricultural land.

The primary sector brings as much as 8% of the regional GDP, this share being more than three times higher than on the average in Hungary, while food processing industry also takes an important part.

The areas, featuring the most disadvantageous natural conditions for agriculture, like the vicinity of Kiskunmajsa in the eastern part of the region, were to the lowest degree affected by the full collectivisation of farming. An important part of land remained there in the hands of the members of cooperatives, owing to which private use of land persisted there over the entire socialist period – the percentage share of the small farms is the highest there, and the agricultural companies are barely present at all. The average acreage of a farm in the region is 6.3 hectares. Yet, in the parts of the region with better natural conditions big farms, with areas exceeding 1,000 hectares dominate in terms of area share. In the magnitude structure of farms one can notice the phenomenon that is characteristic also for the entire country – high shares of land in the very small and in the biggest farms. A characteristic feature of the private farms, caused by the tax system, is their partitioning into smaller holdings, despite the fact that they are run by one managing person.

Although the drought risk is high, only 2.4% of agricultural land is irrigated. Given the generally poor quality of soils, the average economic magnitude of a farm is equal merely 2.3 ESU.

Cereals take a bit less than half of the cultivated arable land. Very important role is also played by the viticulture (some 38% of the area, mainly on poorer soils) and of the oleaginous crops (13% of the area). In animal husbandry pig raising plays the most important role (615,000 animals), followed by sheep and goats (135,000). The number of meat cattle is around 18,500 and of milk cows – 24,000. Annual average milk yield from a cow is 6,300 litres.

With respect to vine growing the crucial problem is in the downfall, in the period of systemic transformations, of the majority of local processing plants. Processing industry was privatised outside of the agricultural sector and transferred to other, more profitable branches of manufacturing or service.

Among the oleaginous plants the most important crop is sunflower. Before the economic transformation the state sector had the monopoly on oil production. During transformation the entire processing was privatised and sold to a foreign investor, who has been functioning in conditions of a private monopoly, concentrating some 90-95% of the domestic market. The remaining part has been the domain of some 80 smaller companies.

Conclusions for Vojvodina

On the basis of analysis of situation in the rural areas and agriculture of the regions characterised before, one can attempt to indicate some socio-economic processes, which might take place on the rural areas of Vojvodina in the pre-accession period and in the first years of membership in the EU⁵:

- continuation of the process of the outflow of population, especially the young, from the peripherally situated areas of Vojvodina to large towns (Novi Sad, Belgrade) and abroad; this shall result in deepening of the disadvantageous demographic processes (decrease of the birth rates, ageing of the society, depopulation);
- stagnation or collapse of small farms, whose production shall have less and less commercial character; the economic significance of the largest farms and agricultural enterprises shall increase;
- increase of significance of the foreign capital in food and agricultural processing, which might result in the increase of production, improvement of competitiveness and expansion into new markets;
- modernisation of the agricultural sector shall be linked with a significant decrease of employment in farming;
- a barrier to the increase of productivity of agriculture may be constituted by the low level of agricultural education of farm managers; it is necessary to spread agricultural education, especially at the secondary level (technical and professional high schools);
- in plant production the role of industrial crops shall increase (soybeans, sunflower), while in animal production, over a longer perspective, one can expect an increase of importance of poultry;
- in the search for the new functions of the rural areas, local self-governmental bodies shall count in some areas on the development of tourism and shall implement actions conducive to the development of tourism, with the use of financing from the European sources;
- there will be a decrease of the arable lands in the vicinity of Novi Sad as the results of urbanization processes and new economical functions development;
- the potential pre-accession support for the farmers can be spent in an unsatisfactory manner if there is no counterpart assistance from the agricultural service institutions, like, e.g., the extension services; bureaucratic and centralised way of proceeding may constitute a barrier for acquisition of the Community means.

⁵ Assuming the scenario of Serbia joining the European Union.

Tab. 5. Long-term trends of changes for selected agricultural products (1990-2008)
 (++) high increase; + increase; +/- stabilisation; - decrease; -- important decrease; nd – no data

	Vojvodina	Chełm-Zamość	Timiș*	Bács-Kiskun
<u>Harvested area:</u>				
Cereals	-	+/-	-	+/-
Maize	+/-		-	+/-
Wheat	-	+	-	+/-
Barley	+/-	+/-	-	+/-
Industrial crops	++	+	-	nd
Sunflower	+		-	+/-
Soya	++		+	++
Sugar beet		+/-	-	-
Fodder crops	-	+	nd	nd
Vegetables	-	+/-	++*	nd
<u>Yields:</u>				
Maize	+		+/-	+
Wheat	+/-	+	+	+
Barley	+/-	+	+/-	+
Sunflower	+/-		++	++
Soya	++		+	+
<u>Livestock number:</u>				
Cattle	+/-	-	-	-
Pigs	-	+	-	-
Poultry	-	++		++
<u>Milk production</u>	++	+/-	nd	nd
<u>Meat production:</u>				
Beef	+	+/-	nd	nd
Pork	+/-	+	nd	nd
Poultry	+/-	++	nd	nd

* Vest (NUTS-2) data for the years 1990-2006

DIAGNOSIS OF AGRICULTURE OF VOJVODINA

General overview of Serbian agriculture

Food sector plays a very important role in the economy of the Republic of Serbia. In 2005 agricultural production and food processing accounted for approximately 35% of the GDP. Farming production gave 14.5%, and food processing – 20% of the GDP. In the gross agricultural production there is domination of crop production over the animal sector (58% and 42%, respectively).

The level of production of the Serbian agriculture (especially of the crop production) is highly unstable, depending both upon the weather and the business conditions. Disadvantageous weather conditions (floods and high groundwater table), as well as sharp price increase, associated with introduction of the value added tax (basic rate of 18%, for agricultural products and production means – 8%) caused during just one season of 2004-2005 the drop of wheat production by close to 30%, of sunflower by 20%, of plums by 46%, and of grapes by 43%. In the same period production of maize increased by 8%, of soybeans – by 16%, and of sugar beets – by 10% (CEEC Agri Policy).

Maize and wheat are the basic cereals grown in Serbia. The area under wheat remains under a clear influence of the weather conditions. Industrial crops play an important role, including sugar beets (70,000 hectares), sunflower (230,000 hectares) and soybeans (160,000 hectares). In animal production cattle and pigs are most important. During the recent years the decrease of the numbers of animals raised has been slowing down.

Milk processing is the most important branch of the food processing industry in Serbia. Its large part is under control of foreign investors, mainly from the United Kingdom, France and Croatia. Milk production is at the level of 1.6-1.8 billion litres. There are 20 large industrial milk processing facilities in Serbia, along with around 230 small local processing plants. Roughly 60% of milk produced is used in production, while the rest is used for direct consumption or is being sold via unregistered channels. State supports milk producers through various types of subsidies and protects domestic market against import of milk products with high custom tariffs (up to 30%).

In 2004 the budget of the Ministry of Agriculture accounted for the first time for the means devoted to the development of rural areas, with the objective of supporting diversification of agriculture and the economy of rural areas. The means have been directed to the development of technical infrastructure, rural tourism and crafts, as well as support for young farmers. The support for agriculture in the form of subsidies is very modest, there are no subsidies related to production of sugar beets, sunflower, wheat and other cereals, while milk production and purchase of mineral fertilisers are subsidised.

The fundamental features of the food and agricultural market of the Republic of Serbia (on the basis of CEEC Agri Policy) are as follows:

- agricultural production satisfies domestic demand for food and attains the level enabling export of some products,
- productive potential of agriculture is not fully used mainly owing to economic difficulties,

- there are no guarantees for the sale of agricultural produce (except for contracting of sugar beets, soybeans and sunflower),
- there is a positive net effect of foreign trade in agricultural products; in 2006 food and agricultural products constituted 20.6% of total exports of Serbia (mainly legumes, fruits, maize and sugar) and 17.5% of total imports,
- in the foreign trade in food and agricultural products exports are dominated by unprocessed agricultural products, while imports – by processed food,
- in the domestic trade in food and agricultural products an increasing significance of the large trade corporations is observed, including foreign ones (Metro, Mercator, Vero, Interex),
- privatisation of the agricultural combines and enterprises of food and agricultural processing requires anti-monopoly actions and constitutes a threat to small companies and farms, which are not competitive,
- there is an increase in the shares of seed material and production means purchased from abroad,
- Serbia is not taking advantage of all her quotas for the preferential export to the European Union (e.g. of beef).

The structure and the trends of change in the agricultural sector of Vojvodina

Vojvodina is famous for its highly convenient natural conditions for agricultural production (in terms of soil, climate and hydrology), and farming is there the leading function on the rural areas. More than 75% of the area of this province is taken for agricultural use. Productive potential, though, is not properly made use of. The reasons for this state of things include extensive crop structure, dominated by cereals, poorly developed irrigation systems, and a limited share of farms specialising in animal husbandry.



Photograph 1. A family farm in Vojvodina

In the organisational structure of farming two groups of producers exist – the agricultural estates, largely equivalent to family farms, disposing of roughly 70% of agricultural land, and agricultural enterprises, making use of the remaining 30% of land. The estates own 75% of dairy cattle, 70% of pigs and 90% of poultry. The average acreage of a farm in Vojvodina is around 3.6 hectare, which is indicative of the very disadvantageous agrarian structure (Fig. 8). Additionally, an average farm is composed of at least five separate plots. On the other hand, the large agricultural enterprises, of which there were 184 in 2008, do not process agricultural produce and are functionally fragmented.



Fig. 8. Differentiated acreage and agrarian structure of farms in the vicinity of Novi Sad (Source: NASA 1990)

The share of agricultural land owned by the estates is highly spatially differentiated – from 50% to 90% of ownership in particular municipalities (Fig. 9). Their highest concentration is observed in the district of Srem and within the borderland of the districts of Bačka and Banat. On the other hand, the enterprises take a bigger share in the land ownership structure in the eastern (close to the border with Romania) and western (near to the border with Croatia) parts of Vojvodina.

During the 1990s the agriculture of Vojvodina suffered a serious crisis, associated with price instability, lack of production means and low financial outlays. In the last decade the situation improved owing to the stabilisation of the system of financing and reduction of the market-related restrictions. The processes of privatisation of agriculture, though, are proceeding slowly, in view of lack of large investors. An additional difficulty results from the fact that a large part of land is owned by the state and, being managed by the “socialised” enterprises (cooperatives), it does not constitute the object of privatisation.

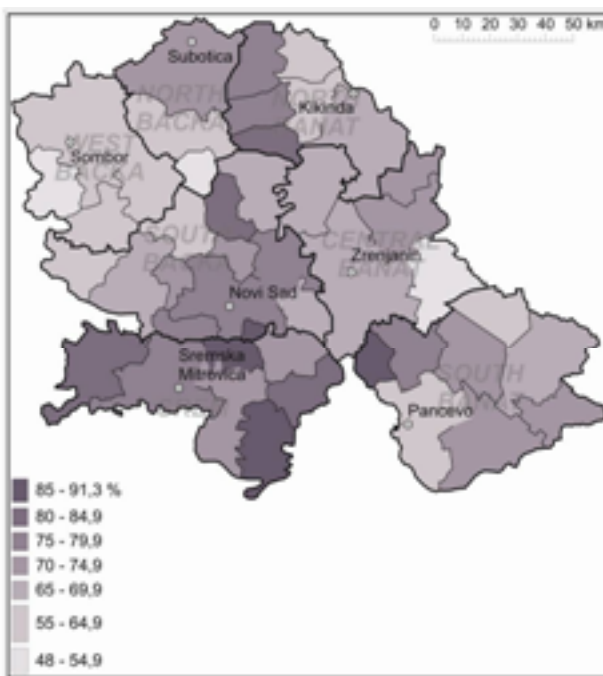


Fig. 9. Shares of family holdings in total area of agricultural land, 2007

Agricultural population

More than 15% of inhabitants of Vojvodina find employment in agriculture. The lowest shares of the agricultural population are observed in the municipalities with larger towns, where manufacturing and service sectors, are better developed. Then, in between such units the municipalities with significant (exceeding 20%) shares of agricultural population are concentrated (Fig. 10).

The human factor, including the level of education and professional skills of the farmers, plays the decisive role in the shaping of directions of development of agriculture. Concerning the structure of education of the population one can speak of a very bad situation in the typically agricultural farms, and of a relatively good situation in the farms, which are only partly dependent upon agriculture (Fig. 11). In the former almost half of the population above 15 years of age did not have even the primary education, and only every fifth person had a secondary education. The so low level of education constitutes a serious limitation to the introduction of innovations and restructuring of farming production in Vojvodina. Against the background of this disadvantageous situation, there has been for quite a long time a systemic improvement in the level of education of the farm operators. Yet in 1991 as much as 2/3 of the population did not have primary education, while in the years 1991-2002 the share of persons with secondary or higher education increased twofold (Fig. 12).

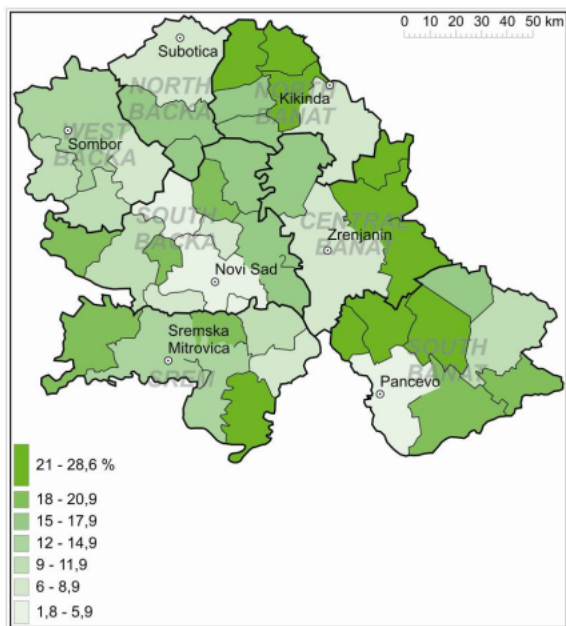


Fig. 10. Percentage of agricultural population, 2007



Photograph 2. Training for farmers in a company selling farming machinery (John Deere)

In the farms with a significant share of revenues from the non-agricultural sources the structure of education of the population is still much better. The share of persons without full primary education is roughly twice lower, and as much as half of this population have at least secondary education, with 10% having graduated from a tertiary education institution. Yet, agriculture fulfils in these farms mainly the self-supplying role, which is not conducive to introduction of innovations.

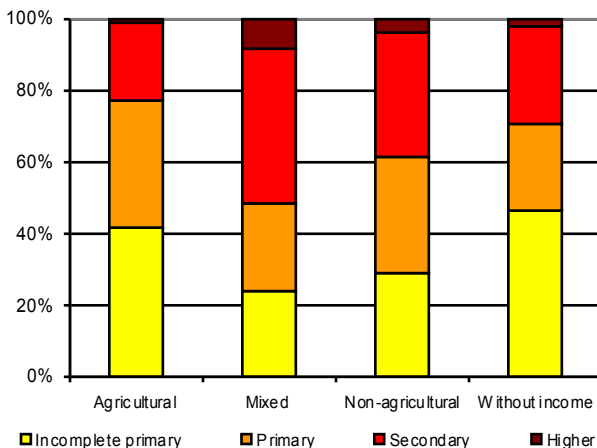


Fig. 11. Shares of household members 15 years and older according to education and income sources in Vojvodina in 2002

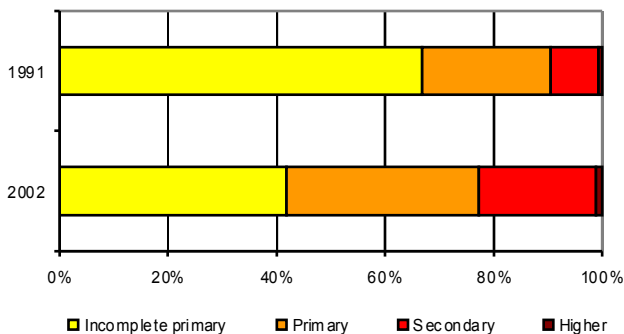


Fig. 12. Shares of household members 15 years and older acquiring income from agriculture according to educational level in Vojvodina in 1991 and 2002

The highest level of education characterises the inhabitants of the western part of Vojvodina (Bačka district)– Fig. 13. Then, the lowest educational level is observed in Banat, where at most 40% of population have secondary and higher education; around 60% have primary and incomplete primary education. A similar intra-regional differentiation is observed also for the education of the farming population.

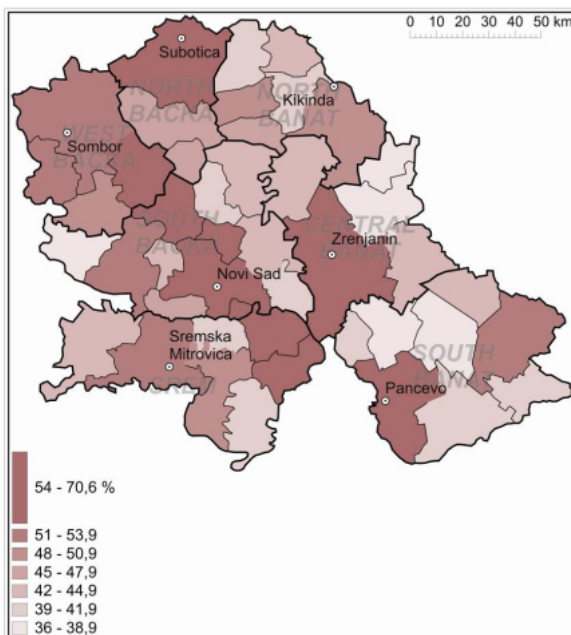


Fig. 13. Percentage of population over 15 years of age with secondary or higher education, 2002

Crop production

The area of Vojvodina constitutes 24.3% of the entire territory of Serbia. At the same time, the area under cereals in Vojvodina accounts for roughly 50% of the national total, and of the industrial crops – for as much as 92%. These figures demonstrate the role of agriculture (and mainly of crop production) of this province in the agricultural sector of Serbia (Table 6).

Table 6. Areas under selected crops on arable land in 2007, in hectares

Type of crop	Republic of Serbia		
	Total	Central Serbia	Vojvodina
Total	3,095,006	1,552,405	1,542,601
Cereals	1,942,831	926,437	1,016,394
Wheat	559,830	268,323	291,507
Barley	94,015	50,305	43,710
Industrial crops	412,852	33,340	379,512
Vegetable crops	282,486	208,792	73,694
Fodder crops	456,837	383,836	73,001

Source: Statistical Office of the Republic of Serbia.

Around 90% of crop cultures in the province are associated with arable land. Orchards and vineyards occupy limited surfaces in the area of Fruska Gora, in the vicinity of Vrsac and Subotica. Each of the districts is characterised by a similar structure of agricultural land, although one should note shares higher than regional average of pastures in Banat, of industrial crops in South Bačka, and of vineyards in Srem (Fruska Gora) – Fig. 14.

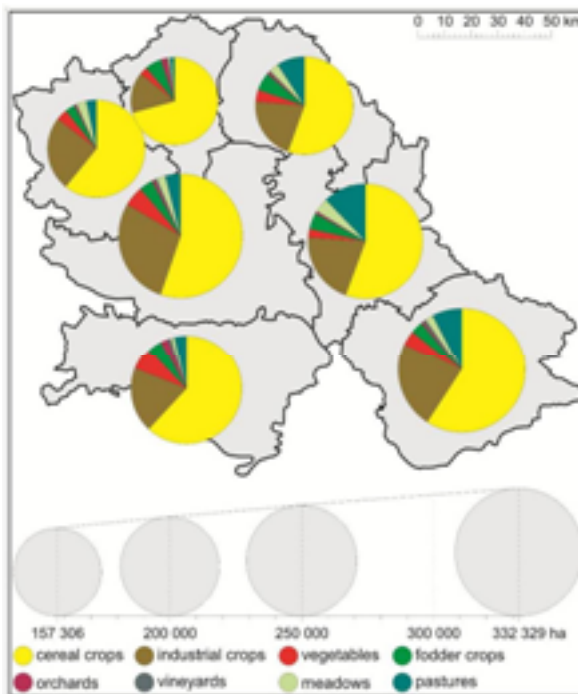


Fig. 14. Area and structure of agricultural land, 2007

With respect to the directions of crop production, I. Sremenković, D. Bošnjak, A. Stamenković (2006) distinguish four agricultural regions of Vojvodina. The first of these encompasses the western part of the province with good soils, having developed within the floodplain areas of Danube and Sava, along with the south-eastern part, with relatively higher precipitation. The second region encompasses the central part of the province, with chernozems having developed on loess. The third part consists of the East of the province, where precipitation is low and soils are fertile, originating from loess. The fourth region encompasses Subotica and Deliblat, and is characterized by soils originating from sandy formations.

In the central part of the province, featuring the best soils, the highest share of arable lands in the land use structure is observed (Fig. 15). Arable lands have relatively lower significance in the upland parts of the province – Fruska Gora (Srem) and the surroundings of Vrsac in the South of Banat.

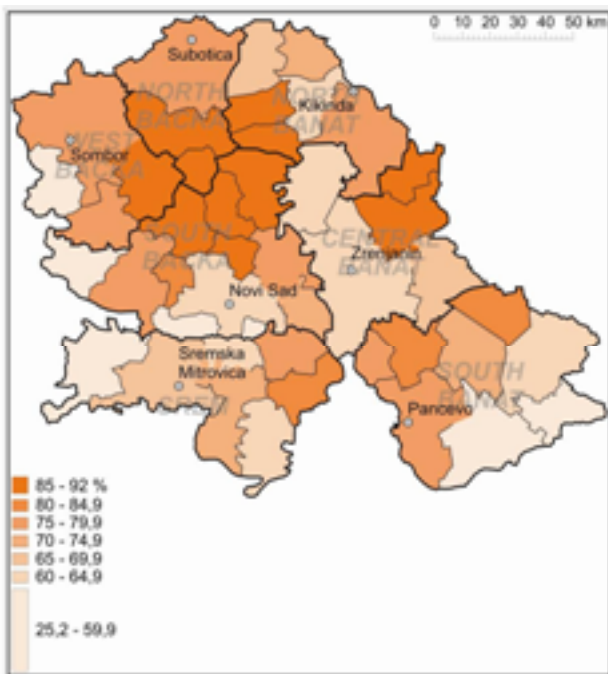


Fig. 15. Share of arable land in total area, 2007

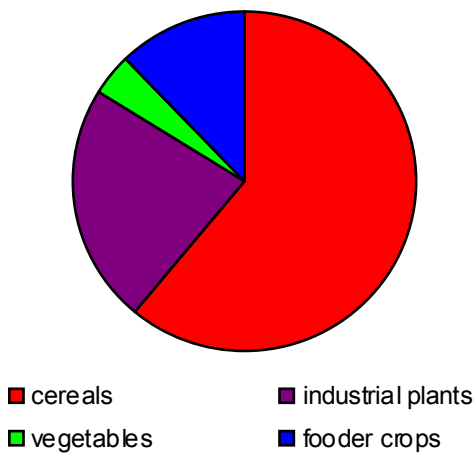


Fig. 16. Area structure of crop land, 2008

Cereals dominate on the arable lands (Fig. 16). The area under cereals undergoes periodical fluctuations, with a general downward trend after 1994, though also with a slight increase during the last three years (Fig. 17). According to the data from the Statistical Office of the Republic of Serbia the harvested area of cereals in 2009 was 1,032,453 hectares.

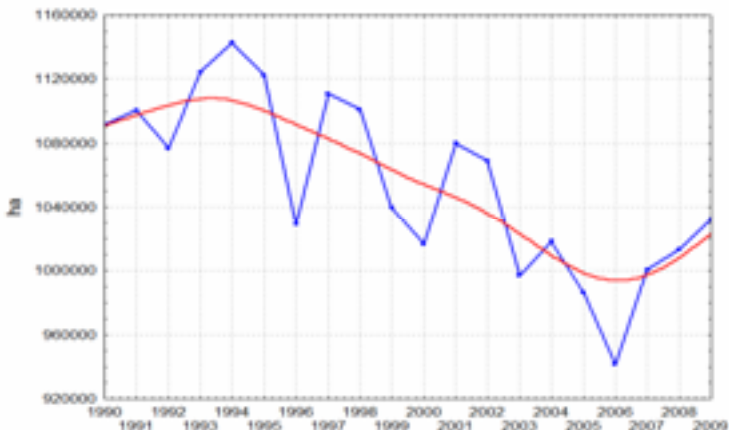


Fig. 17. Harvested area of cereals

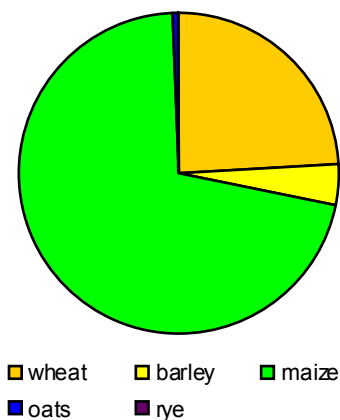


Fig. 18. Area structure of cereals cultivated, 2008

Among the cereals cultivated the biggest share of cropland is taken by maize (Fig. 18). Maize features a generally stable area of cultivation, with, however, a distinct increase in the recent years (Fig. 19). This process, when seen over a longer time horizon, is accompanied by a gradual increase of yields (from about 4.5 tonnes per hectare in 1990 to 5.5 tonnes in 2009). Yet, there is a high variability of yields from year to year, caused by periodical droughts and low share of irrigated fields (Fig. 20).

Thus, for instance, the hot and dry summer of 2003 brought a very distinct drop of yields of both maize and wheat (for the latter, see Fig. 22).



Photograph 3. Drying house for maize in a family farm

Maize is grown primarily in small farms, where the increase of its area was the biggest. This increase resulted from higher profitability of maize production than of other cereals. Besides, corn has a high share in production of animal feed concentrates.

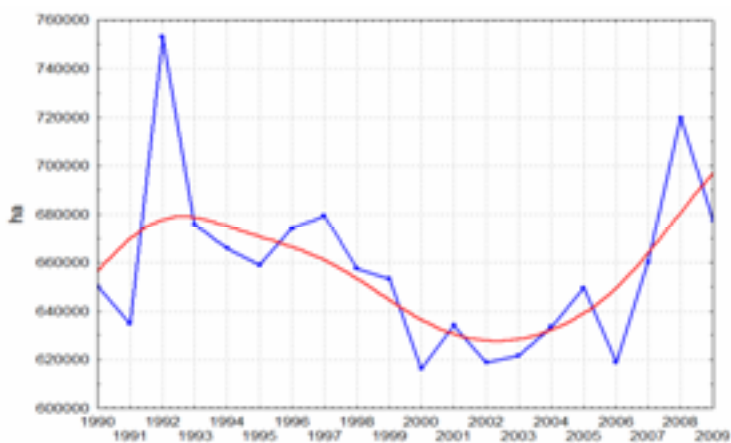


Fig. 19. Harvested area of maize

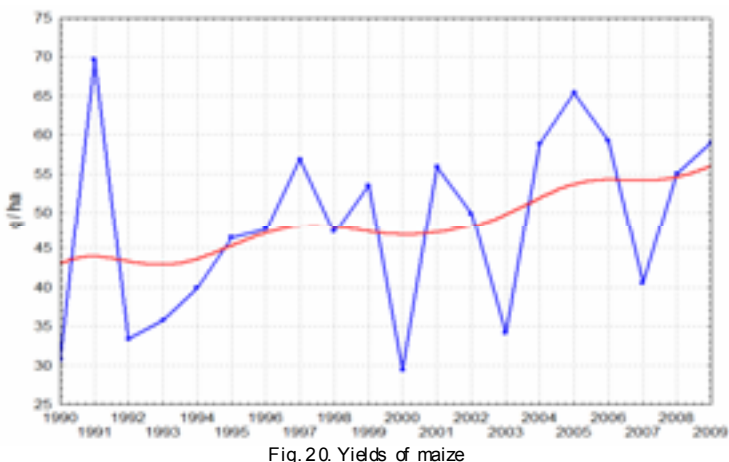


Fig.20. Yields of maize

Good agro-ecological conditions (first of all – very good soils) are advantageous for growing wheat, the basic bread-making cereal. In 2009 the area under wheat was 301,649 hectares. In the period 1990-2009 the harvested area of wheat decreased by more than 30% (Fig. 21). The process of decrease of the area under wheat is especially visible in the 2000s, and it can be assumed that this is a steady trend. Alas, it is not accompanied by a clear increase in yields (Fig. 22). Relatively high yields (comparable with those of the Western European countries) were achieved at the turn of the 1990s, after which a drop ensued to roughly 3.5 tonnes per hectare (which was accompanied by periodical fluctuations of yields, most probably attributable to unstable weather conditions). Since the year 2000 a slight reversal of the downward trend could be observed.



Photograph. 4. Cereals cultivation in the Srem district

Vojvodina is an important and known producer of seed material. Wheat seeds are exported to many countries. Studies and production of the seed material are conducted, in particular, at the Institute for Crop and Vegetable Growing in Novi Sad. High quality wheat is produced primarily in the agricultural combines. Small farms usually use their own seed material.

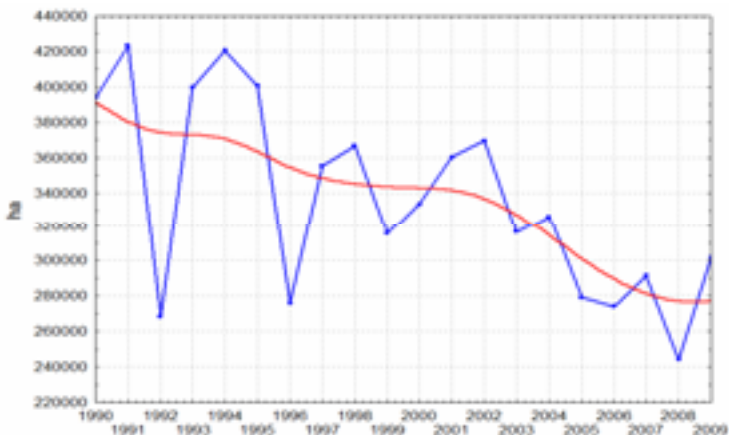


Fig. 21. Harvested area of wheat

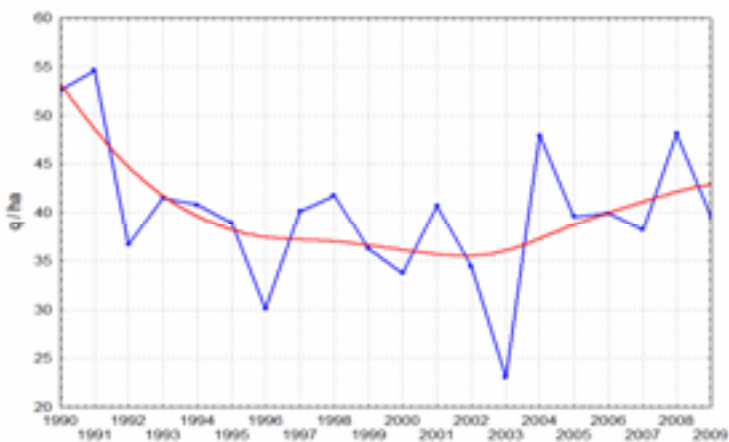


Fig. 22. Yields of wheat

Barley plays a decidedly smaller role than maize and wheat in the cropland structure. After having reached a maximum at the beginning of the 2000s, the following years have been characterised by a constant decrease, which was not offset by the increase of yields (Fig. 23). Other cereals (rye, oats, mixtures) are of highly local significance and do not play any important role on a general scale.

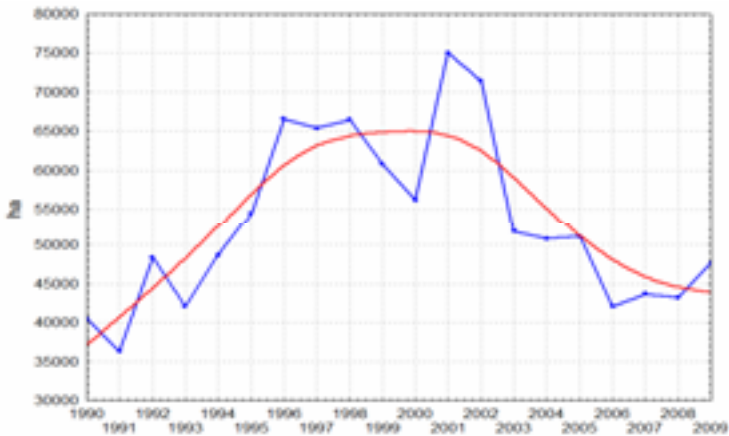


Fig. 23. Harvested area of barley

Contrary to cereals, the area of industrial crops has been gradually increasing, which is due to the possibility of acquiring better economic effects by the producers than for the cereals (Fig. 24). In 2009 the area of cultivation of industrial crops was around 360,000 hectares. Despite the periodical fluctuations (observed over annual, or bi-annual periods) it can be concluded that the tendency towards the increase of area of cultivation of industrial crops has had over the last two decades a persistent character.

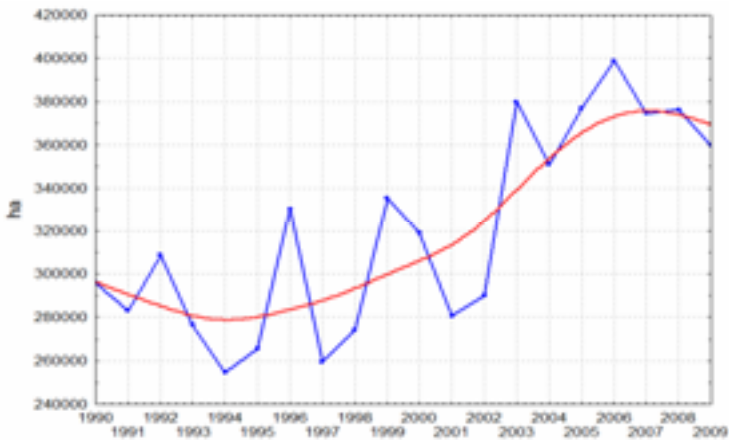


Fig. 24. Area under industrial crops

Among the industrial crops, two basic plants should be distinguished: sunflower and soybeans (Fig. 25). A lesser role is played by the sugar beets, oil turnip, paprika and hops. Yet, sugar plays a very important role in the structure of exports of the food and agricultural products. Sugar is an important export product, not, however, because of competitiveness, but because of the special agreement with the EU and the Western

Balkan countries about duty free sugar export to the EU. Cultivation of sugar beets is concentrated in Vojvodina in the districts of Srem and Bačka.

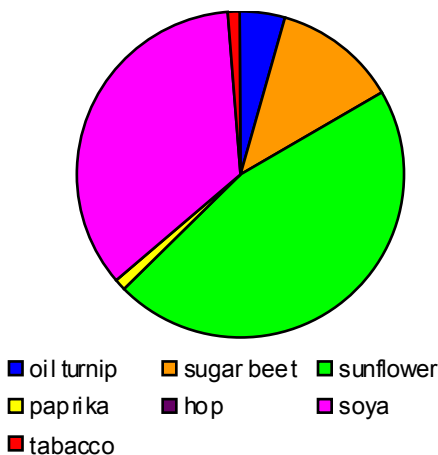


Fig. 25. Cropland structure of industrial crops

The area of cultivation of sunflower is characterised by large annual fluctuations (Fig. 26). Thus, for instance, the cultivation area in 2003 increased in comparison with 2002 by close to 40%. Over a longer time horizon this area remains relatively stable (between 150,000 and 170,000 hectares), yet at a higher level than in the 1980s (*Integrated Regional Development Plan...*, 2006).

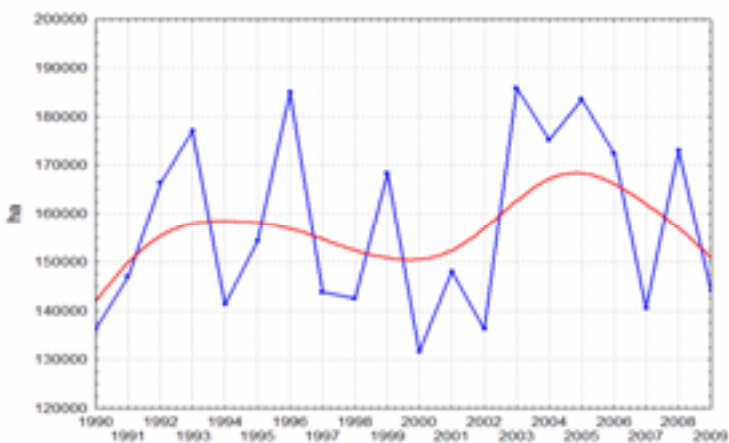


Fig. 26. Harvested area of sunflower

On the other hand, cultivation of soybeans is characterised by a very dynamic increase of area under this plant (threefold increase in the period 1990-2009), with

rather small annual fluctuations (Fig. 27). Generally, some 70% of total soybean area in Vojvodina falls on the districts of Southern Bačka, Western Bačka and Southern Srem (Sremenković et al., 2006).

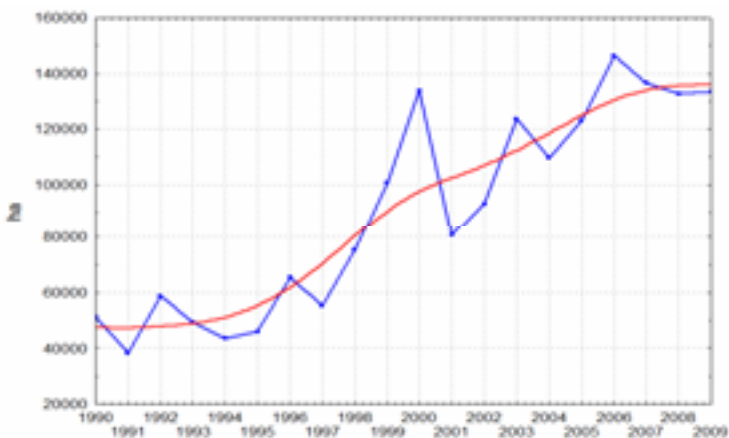


Fig. 27. Harvested area of soybeans

The increase of the area of soybean cultivation is associated with a systematic, over a longer time horizon, increase of yields and crop volumes. Yet, in connection with lack of irrigation, there are drops in yields and crop volumes in the dry years, which sometimes results also in a drop in the area of soybean cultivation (*Integrated Regional Development Plan...*, 2006). Thus, for instance in 2002, yields were high, amounting to 2.5 tonnes per hectare. In 2003 an increase of the area under soybeans followed, but the yields amounted only to 1.7 tonne per hectare. Then, in 2004, the area of cultivation dropped, but yields increased to 2.7 tonnes per hectare (data on yields from *Development programme of AP Vojvodina...*, Annex, 2006).

Animal production

Vojvodina plays an important role on the national scale in animal production. This concerns especially poultry and pigs. In 2008 the number of poultry in Vojvodina constituted 43% of the national total, while the number of pigs – 38%. One fourth of the all cattle in Serbia were raised in Vojvodina (Table 7).

The highest numbers of cattle per 100 hectares of agricultural land are kept in the areas with the highest shares of pastures (Banat), in North Bačka and in Srem (Fig. 28).

During the 2000s a slight, but systematic decrease of the number of cattle was observed in Vojvodina (in the period 1999-2005 this number declined by 8%, from 230,000 to 212,000). This tendency is similar to the general one in the country. Over the years 1990-2006, though, the number of cattle remained at much the same level. An exception from the overall stable trend was noted in 1994, when the drop of the cattle number to around 200,000 occurred.

	Republic of Serbia			
	Total		Vojvodina	
	Number and weight of livestock and poultry			
	Number, thousands of heads	Weight, tons	Number, thousands of heads	Weight, tons
Cattle	10 57	431 461	263	1 013 18
Pigs	35 94	221 700	1 364	85 995
Sheep	16 05	83 946	254	14 471
Horses	17	7 332	6	2 573
Goats	154	6 008	48	1 978
Poultry	171 88	38 331	7 364	15 409

Map of the Bačka region in Serbia, showing administrative districts and cattle density. The map is divided into districts: Subotica, Kikinda, Sombor, Novi Sad, Zrenjanin, Sremska Mitrovica, and Pancevo. A legend on the left shows cattle density ranges (A-D) with corresponding colors. A scale bar at the top right indicates distances from 0 to 50 km.

Legend:

- A - number of cattle [%]**
- B - mean density in zone [number per 100 ha]**
- C - area of agricultural land [%]**
- D - range of density in zone [number per 100 ha]**

Density Ranges (A-D):

Range	Mean Density (B)	Area of Agricultural Land (C)	Range of Density (D)
100,000 - 89,208	33,000	100,000 - 84,900	30 - 33
71,985	25,764	84,719	24 - 29
58,207	21,126	74,707	18 - 23
41,099	16,152	58,448	16 - 17
29,857	14,642	46,662	14 - 15
17,607	11,902	30,863	11 - 13
0,000	8,757	0,000	4 - 10

42

Milk production is the most important component of the animal production. Despite the slight decrease of the number of cattle in the recent years a gradual increase of milk production can be observed (Figs. 29, 30). This is the effect of increase in milk yield per cow. Still, according to the authors of the report from the program AgriPolicy (*An assessment...*, 2009) productivity of farms in terms of milk yield is much lower than in the countries of the European Union (average annual milk yield per cow in Serbia was in 2007 equal 2663 litres). This is the effect of a number of factors, including poor quality of genetic material, low educational level of farmers, limited investment capacities of farms and high fragmentation of producers. On the scale of the entire country more than 90% of the milk-producing farms have on the average two cows, which accounts altogether for 66.4% of the entire dairy cattle. There are only 25 holdings, which own, on average, 1,000 milk cows. Uniquely in large farms (cooperatives and commercial farming enterprises) milk yields exceed 6,000 litres.

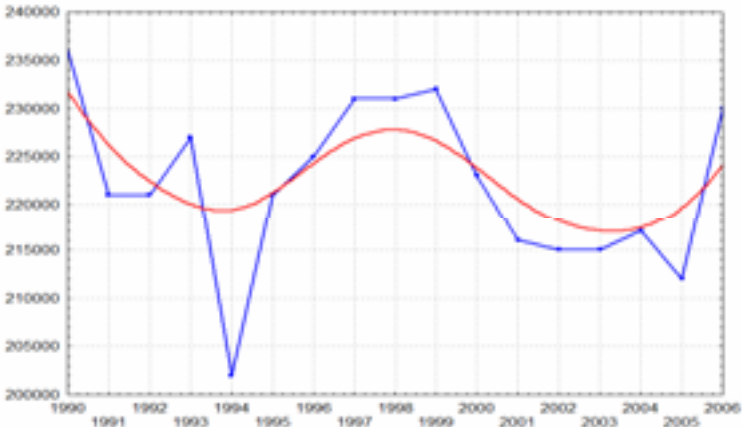


Fig. 29. Cattle numbers

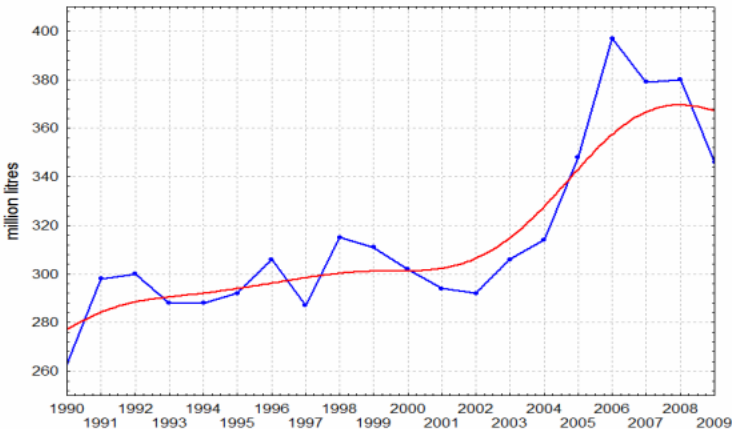


Fig. 30. Milk production

Since the beginning of the 1990s a steady increase of milk production is observed, with a truly dynamic increase having started only in 2002 (Fig. 30). In 2006 milk production was higher by half than in 1990. This has been due not only to the increase of milk yield per cow, mentioned before, but also to the increase of the share of dairy cattle in total cattle numbers. An advantageous situation in the domain of milk production is also linked with relatively good organisation of sales, cooperation of farmers and dairies, as well as the state subsidies, supporting milk production.

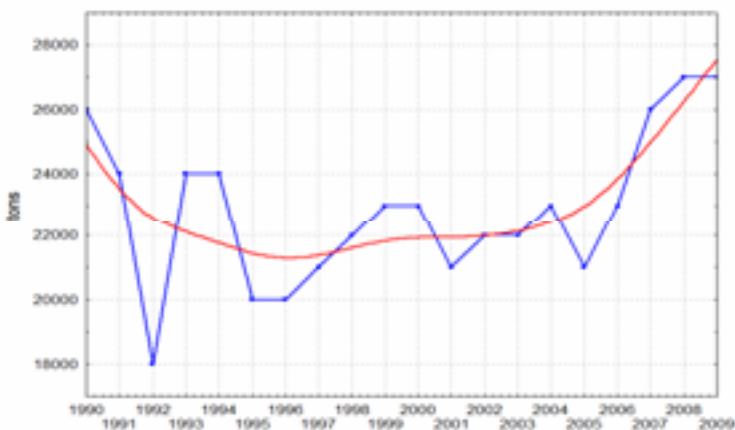


Fig. 31. Beef production

Beef production remains on a relatively stable level, with, however, a distinct upward tendency in the period 2005-2009 (Fig. 31). Significant fluctuations were observed in the first half of the 1990s. Vojvodina looks positively in terms of beef production against the background of entire Serbia, as the general national trend in the recent years (2000-2005) has been negative.



Photograph 5. "Big Bull" meat processing plant in municipality of Sid (Srem district)

The biggest intensity of pig raising characterises the areas featuring also the more intensive agricultural production, that is – the north-western and the south-western parts of Vojvodina (Fig. 32). On the other hand, in the eastern part of the region, characterised by a relatively lower agricultural production intensity, the number of pigs raised does not exceed 75 per 100 hectares of agricultural land.

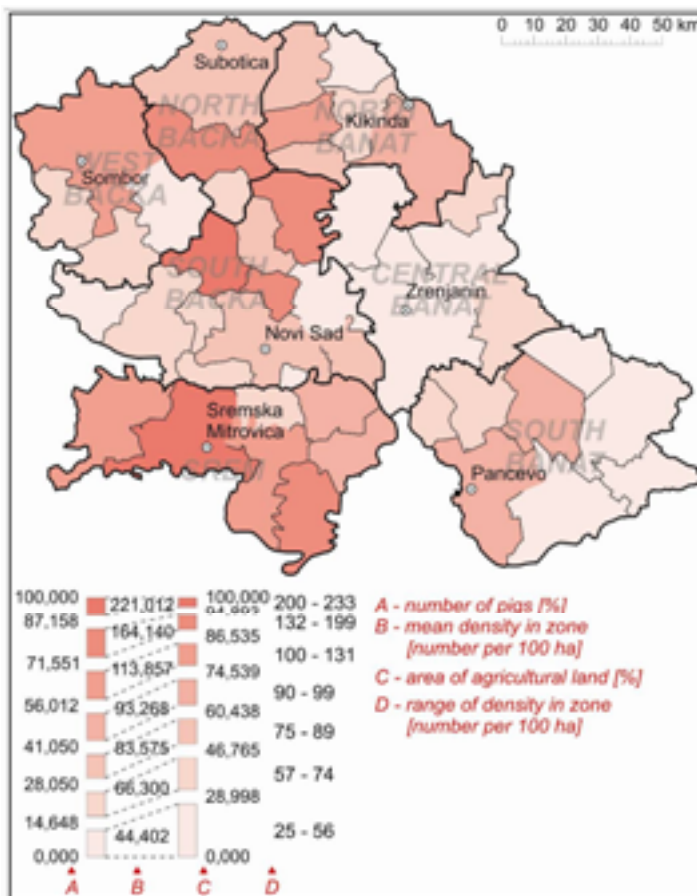


Fig. 32. Concentration of pigs raised related to agricultural land area, 2007

In the pig raising, just like in the case of the remaining livestock, except for sheep, a consistent long term tendency is observed of decrease of the number of animals kept (Fig. 33). This is the consequence of the disorder, having appeared on the pork producer market and the disadvantageous relation between the pig livestock price and the prices of feedstuff (based mainly on corn).

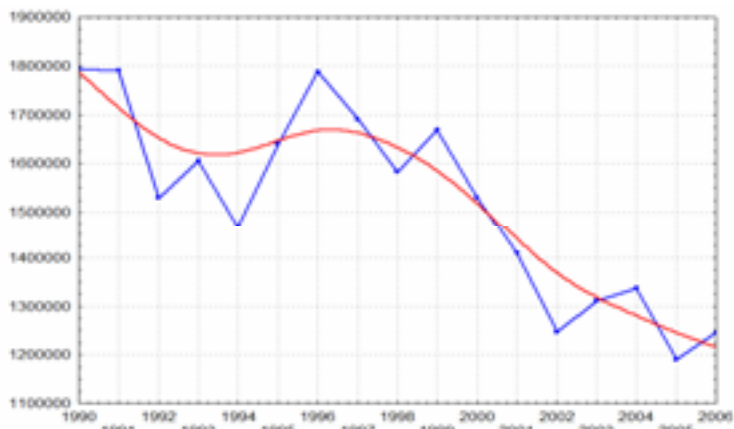


Fig. 33. Number of pigs

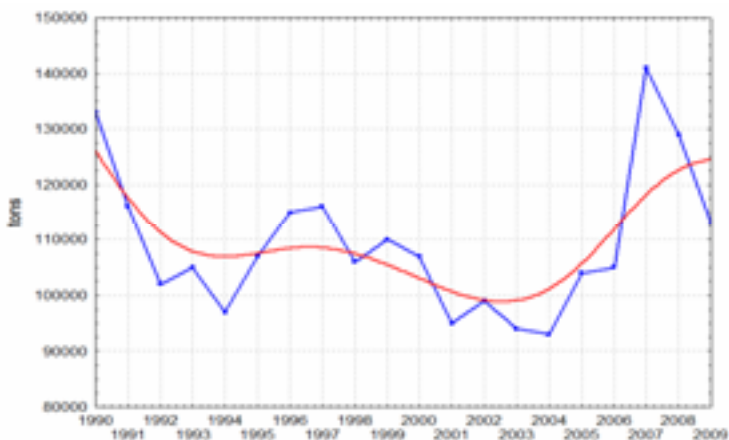


Fig. 34. Pork production

The decrease of the number of pigs raised was accompanied by a significant increase of the weight per animal slaughtered, which significantly slowed down the general decrease of the pork production. Starting with the middle of the recent decade there has even been a distinct increase of pork production, which exceeded in 2007 the level from the beginning of the 1990s, when the number of pigs kept was bigger by around 50% (Fig. 34). The last two years, though, brought a significant drop, down to the average level from the period 1992-2006.

The decrease in the numbers of poultry since the beginning of the 1990s constituted a steady, long-term tendency (Fig. 35). In the years 1990-2004 the number of poultry kept decreased by 38%. This was reflected in the production of poultry meat, whose decrease, though, was distinctly slower (Fig. 36). Owing to the increase of production

effectiveness there even were short periods, during which a clear increase was observed in this domain. The general decrease of profitability of animal production, taking place since the beginning of the 1990s, and the decrease of the numbers of livestock and poultry in Vojvodina were associated with the shift in the macroeconomic conditions and were conform to the general national trends. Since 2004 one can speak of a change in this trend and of a more persistent increase of the number of poultry and production of poultry meat.

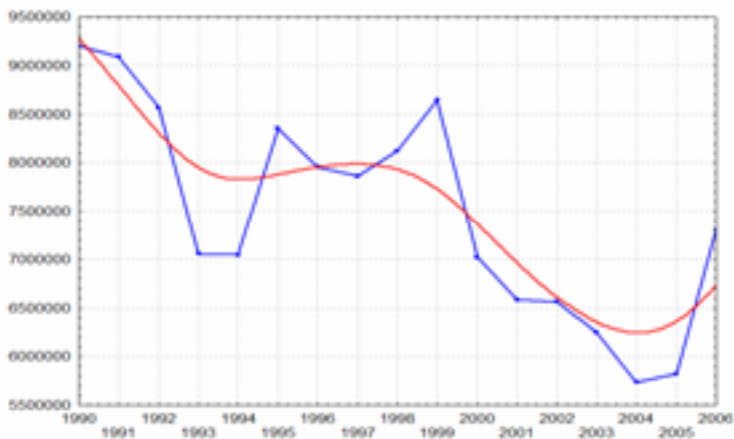


Fig. 35. Number of poultry

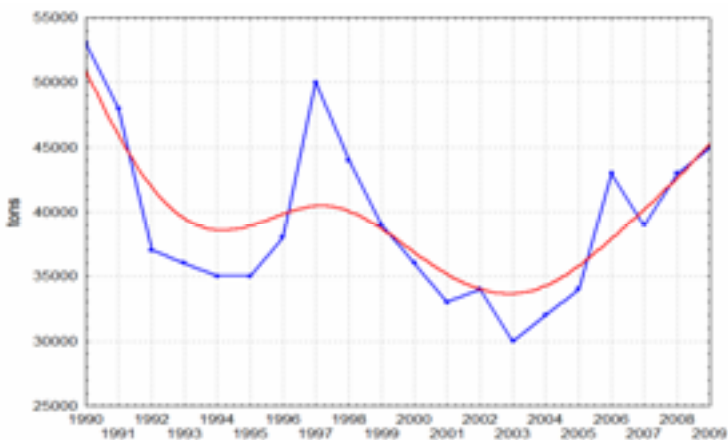


Fig. 36. Poultry meat production

Barriers to the development of the agricultural sector of Vojvodina

According to S. Adžić (2008) the present situation of the food (agricultural-industrial) branch of Vojvodina is characterised by the following features:

- domination, on the one hand, of the small (non-commercial) farms and, on the other hand – large-scale holdings with an outdated way of managing them,
- low productivity, resulting from the undeveloped or outdated production model of the enterprises,
- undeveloped, centralised and ineffective system of financing, oriented at financing of import of durable products,
- devastated, worn out and outdated technical infrastructure,
- unclear political and economic concept of development of the food branch,
- bureaucratic and politicised system of public administration and services.

Similar conclusions can be derived from the pronouncement of the vice-president of the Executive Council of Vojvodina, Timor Simir, disseminated through the web. This pronouncement suggests that the limitations to the development of agriculture in the province result primarily from fragmentation of the agrarian structure (an average holding has the area of 4 hectares) and the inadequate production structure, unfit for the agro-ecological conditions (domination of cereal cultivation, mainly maize and wheat). Besides, the existing large-scale holdings employ too many people, are outdated and are still dominated by the state property.

The potential capacities of the farming-and-food sector are not properly made use of, as nowadays production equals 2/3 of that from 1990. It becomes necessary to get assistance from the outside investors in order to modernise the technologies of production and to transform the anachronistic cooperative system.

The *Integrated Regional Development Plan of the AP Vojvodina* (2006) identifies the following problems and limitations, facing the agricultural sector of Vojvodina:

- uncultivated land area (50% of the agricultural area needs to undergo land consolidation);
- small parcels of farmland;
- unregulated status of the state-owned land (disintegration of holdings of agricultural enterprises could affect the efficiency and competitiveness of agriculture);
- unsatisfactory utilization and unfavourable economic conditions for utilization of water potential for irrigation (irrigation ought to provide increased and stable yields, higher level of land utilization for the second sowing and a change in the production structure for the purpose of more intensive production);
- weak organization of agricultural estates;
- low state support for the development of agriculture (it is necessary to allocate more funds for the development of agriculture and support for exports);
- village ageing and devastation.

Low quality of rural space, its neglect and want for infrastructure add to the lowered attractiveness of rural areas for the population, including the agricultural one (especially the young ones). This question has a particular significance also in the case of these areas, which hope for the development of agro-tourism and recreation (although note should be taken of the relatively low potential of Vojvodina for the development of tourism).



Photograph 6. Neglected rural space in the Danube valley



Photograph 7. Neglected cultural heritage of rural areas (vicinity of Sremska Mitrovica)

Table 8. SWOT analysis from the Integrated Regional Development Plan of the AP Vojvodina

<i>Strengths</i>	<i>Weaknesses</i>
<p><i>Good economic conditions for production</i> <i>(land, climate, water resources)</i> <i>Tradition in production</i> <i>Qualified labour force</i> <i>Development of food industry</i> <i>Developed scientific research and related institutions</i></p>	<p><i>Unregulated land property & administration</i> <i>Small holdings of farmland</i> <i>Weak organization of producers</i> <i>Unfavourable economic conditions for exploitation of water resources</i> <i>Inappropriate solutions for exploiting state-owned land</i> <i>Extensive production (by structure and return)</i></p>
<i>Opportunities</i>	<i>Threats</i>
<p><i>Increasing intensity through re-structuring of productivity and increased return</i> <i>Increasing cattle breeding productivity</i> <i>Increasing efficiency and competitiveness through: better use of water and land resources, integration of production, processing and trade through cooperatives</i> <i>Higher shares of final products within the existing production capacities</i></p>	<p><i>Export limitations due to product and quality certification</i> <i>Insufficient state help for development of agriculture (premiums, export stimulations, more favourable loans)</i> <i>Absence or inappropriateness of legal regulations (cooperatives, denationalization, inheritance, use of land, status of state-owned land)</i> <i>Slow turnover of capital</i> <i>Insufficient influence of institutions on development (agriculture, counseling, education in the field of farm management)</i></p>

Source: *Integrated Regional ...*, 2006, p. 79

PERSPECTIVES FOR THE AGRICULTURAL SECTOR IN VOJVODINA

Perspectives for the agriculture of Vojvodina in the light of results from the EDORA project

In the period of post-productivism agriculture⁶ still plays a leading role in the land use structure, but its role in the economy is gradually dwindling. B. Ilbery and Bowler (1998) distinguish five components (processes) in this period:

- transition from the quantitative to qualitative approach to food production,
- increase of diversity among farms and diversification of the economic activity of members of rural households,
- extensification of production and promotion of sustainable agriculture,
- deconcentration of agricultural production,
- restructuring of the support for the farms from the side of the governments and the European Union and the pro-ecological regulations.

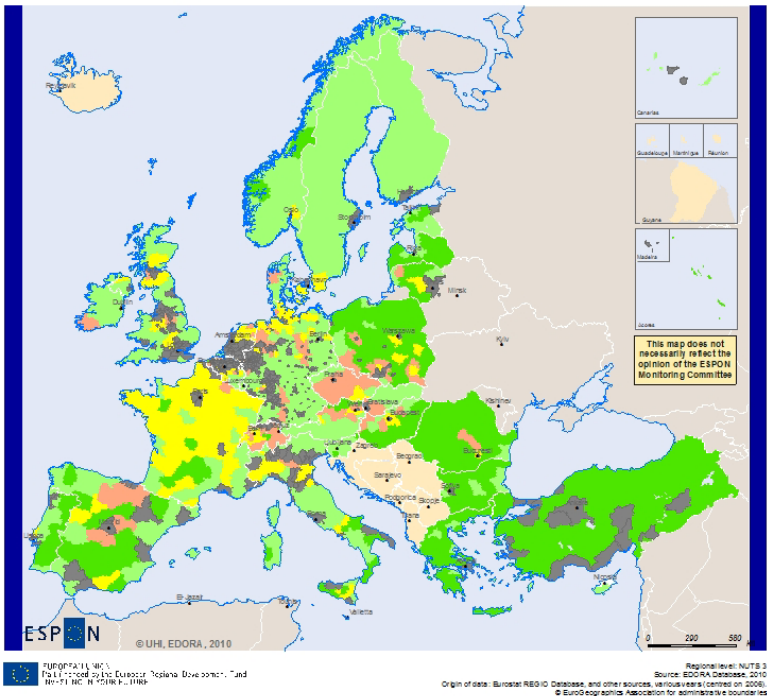
One of the basic contemporary processes is the increase of multifunctionality of the farms. Marsden and Sonorío (2008) distinguish three variants of the paradigm of multifunctionality. In the first one, multifunctionality is understood as the strategy of survival of the farms incapable of competing, consisting in broadening the variety of their economic activity. In the second one the gist of the matter is in multiple functions of the land used for agriculture, which is supposed to conciliate production of food through modern methods with the requirement of preserving unchanged natural environment. In the third variant multifunctionality is perceived in a broad context of the economic, social and environmental development of rural areas, with the farm being an unalienable element of bringing sustainability to development.

Crowley, Walsh and Meredith (2008) propose that the process of polarisation of the farms is currently going on, leading to emergence of two different farm types. Two different forms of productivism are referred to as "para-productivist" and "peri-productivist". The farms, belonging to the first group are, as a rule, large, well invested, clearly concentrated on agricultural production, and usually situated on fertile areas. The farms, belonging to the second group are smaller, pluriactive, multifunctional. The territories, dominated by such farms are characterised by the processes of ageing of the rural population.

In the EDORA project five types of rural areas were distinguished: Type 0 – Predominantly Urban Regions, Type 1 – Agrarian Areas, Type 2 – Consumption Countryside, Type 3 – Diversified (Strong Secondary Sector) Rural Areas, Type 4 – Diversified (Strong Private Services Sector) Rural Areas. This typology was established on the basis of four groups of indicators, accounting for: (i) the state of

⁶ The productivist phase lasted from the early 1950s to the mid-1980s (Ilbery, Bowler 1998). The three structural dimensions of productivist agriculture were important: intensification, concentration and specialization. The post-productivist transition involves integration of agriculture within broader rural economic and environmental objectives by environmental regulation of agriculture, reduction of state subsidies, growing international market competition.

development of economy of a given territorial unit (rate of net migration, GDP per capita, rate of change in GDP, percentage change in employment, unemployment rate), (ii) agrarian rural economy (percentage of the private sector gross value added, GVA, from primary industries, percentage of private sector employment in primary industries, AWU, as percentage of total private sector employment), (iii) consumption countryside (tourist capacity and intensity, proximity on natural public goods, peri-productivist agriculture), (iv) secondary to private services ratio (GVA).



Structural Types (Intermediate and Predominantly Rural NUTS 3 Regions)

- No Data
- PU Regions
- Agrarian
- Consumption Countryside
- Diversified (Strong Secondary Sector)
- Diversified (Strong Private Services Sector)

Note: A simplified classification procedure was necessary in CH and TR, due to missing data. However it is anticipated that acquisition of a wider range of indicators would not materially change the outcome.

Fig. 37. An example of typology of rural areas from the EDORA project

Rural areas of Vojvodina can be classified, similarly as the neighbouring areas of Hungary and Romania, in type 1. This classification is confirmed by the results of earlier conducted diagnosis of the agricultural sector in this region.

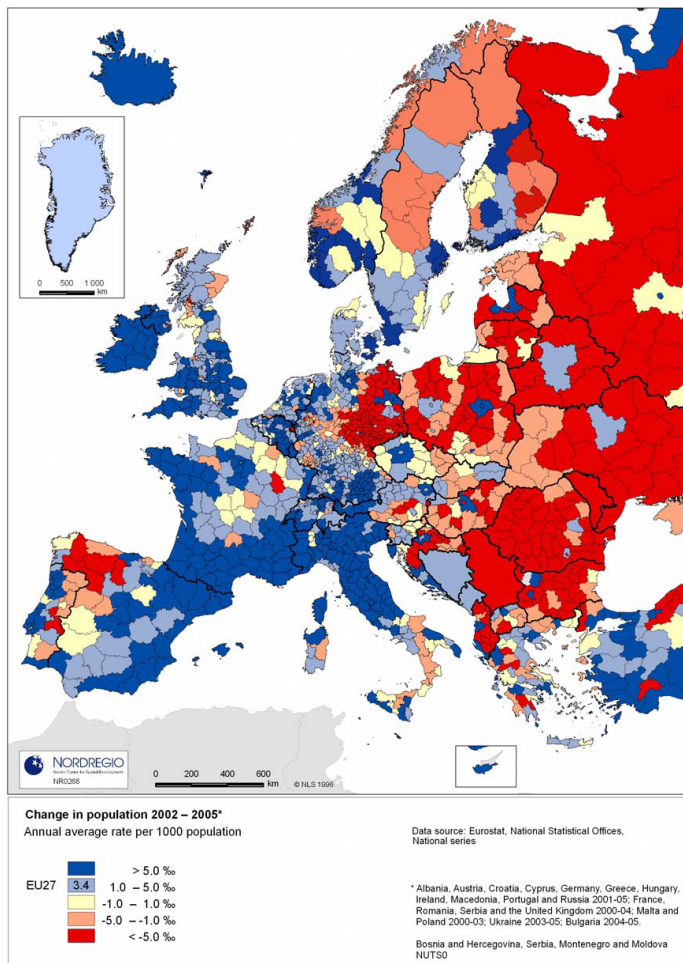


Fig. 38. Population change 2002-2005 in the European regions

Source: Nord regio

The majority of areas of Central and Eastern Europe is characterised by the shrinking population numbers (Fig. 38). This is due both to the negative natural increase and to the intensified migration towards the countries of Western Europe, as well as to towns and metropolitan areas. Concerning rural areas, population outflow, mainly of the young, is typical for the majority of the countries of European Union.

These observations are valid also for Vojvodina. In the years 1991-2007 an increase of the actual population numbers occurred only on the area of Novi Sad, taken together with the neighbouring municipalities, the metropolitan area of Belgrade (municipalities from the eastern part of the Srem district, and Pancevo, situated in the direct vicinity of the country's capital city), and the municipality of Subotica, with the second biggest town of the region (Fig. 39). In the remaining municipalities (and particularly in the peripherally situated rural communes of Banat) a significant population decrease was observed over the period of 15 years, attaining in some places even 15-20%.

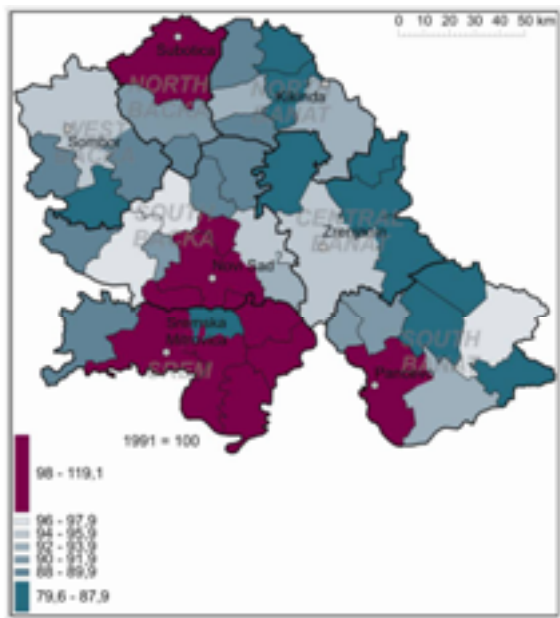


Fig. 39. Population number change in 1991-2007

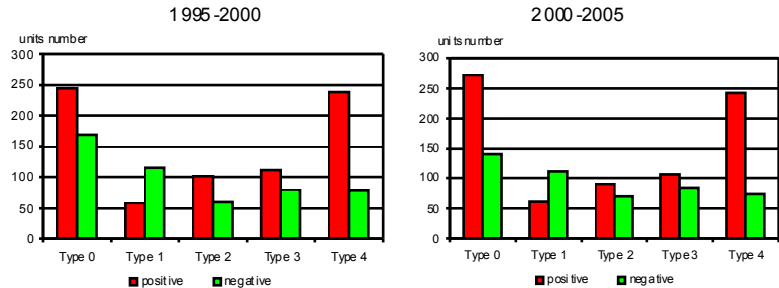


Fig. 40. Balance of total population change in NUTS 3 units by type of rural areas (EDORA) in the periods 1995-2000 and 2000-2005

Type 0 – urban region, type 1 – agrarian, type 2 – consumption countryside, type 3 – diversified (strong secondary sector) type 4 – diversified (strong private services sector)

The analysis of changes in the population numbers according to territorial units during two five-year periods: 1995-2000 and 2000-2005 implies that the processes of outflow from the typically agricultural areas have a persistent character and shall continue to characterize these areas also in the subsequent years (Figs. 40, 41). Outflow shall concern, first of all, the young population, and so the age structure of the population shall worsen, with the share of those beyond 65 years age increasing. Outflow of the young shall result primarily from the limitations on the labour market. Such processes shall most probably be characteristic also for the rural areas of Vojvodina. On the basis of experience from other European countries one can conclude that these processes will have a long-term nature. That is why it is worthwhile to undertake soon enough the actions, minimising the damages, resulting from these processes. The ways to encourage the young to stay in the countryside ought to be considered.

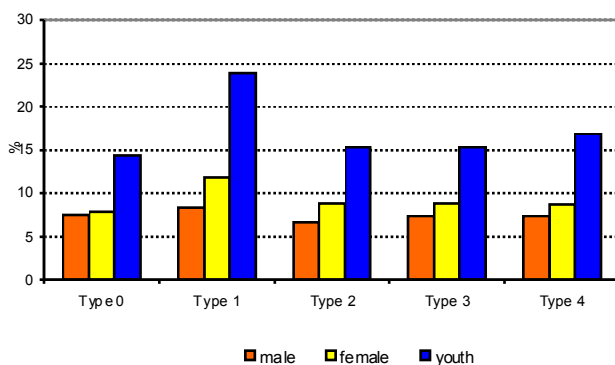


Fig. 41. Unemployment rates by type of rural area in 2006

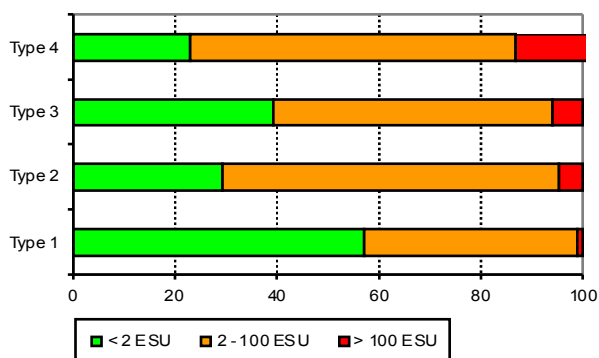


Fig. 42. Shares of farm holdings by economic magnitude classes and type of rural area, 2005

The difficulties in the development of competitive commercial agriculture on the areas classified in type 1 result to a large extent from the inadequate agrarian structure of the farms. Namely, small and economically weak farms dominate (Fig. 42) there.

The changes in the number of farms in the period 2000-2005 it confirms the hypothesis that in the nearest future the importance of agriculture for rural economies will further decline (fig. 43). The total number of holdings decreased in all types of investigated areas. Generally we will observe process of specialization and increase of “economically” large farms as the cost of fall smaller holdings.

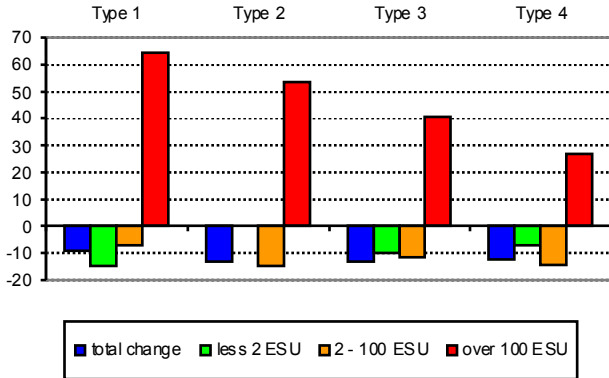


Fig. 43. Relative changes in the number offarms by a area type in the period 2000-2005

The tendency of increasing significance of the economically strong farms at the expense of the weakest ones has been visible in the majority of the EU member countries (Fig. 44). It can be supposed on this basis that this tendency is persistent and encompasses with its reach also the new member countries. There have been, on the other hand, quite limited changes within the group of medium sized farms.

A very disadvantageous phenomenon, confirming the flight of the young from the agricultural areas, consists in the changes of the age structure of farm operators. In the majority of the EU countries there has been during the recent years a decrease of the share of farm owners below 35 years of age, and the accompanying phenomenon of increase of the share of farm owners in the age over 55 years of age (Fig. 45).

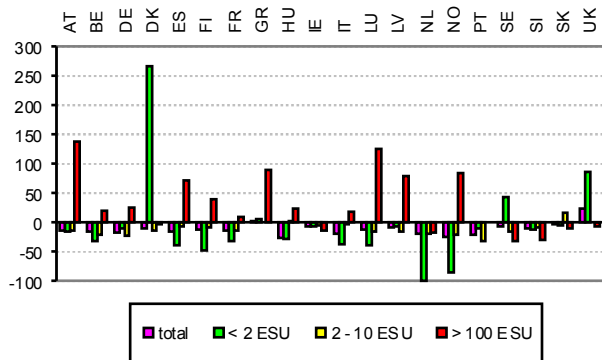


Fig. 44. Percentage changes in the numbers of holdings in the period 2000-2005 in selected EU countries

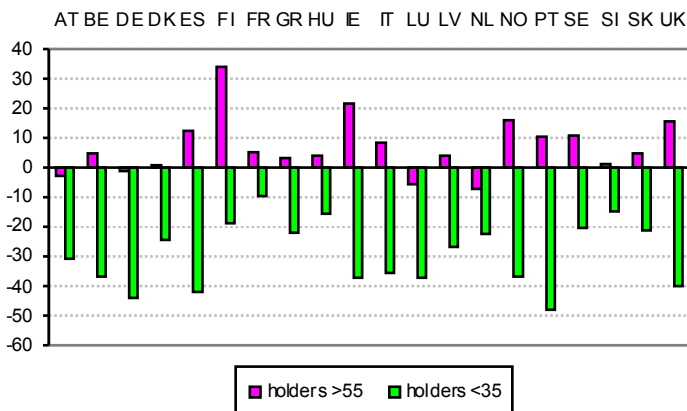


Fig. 45. Percentage changes of farm holder numbers by age groups in the period 2000-2005 in selected EU countries

The analyses, carried out in the framework of the EDORA project, allow for proposing several hypotheses on the future changes that might take place in farming economy:

- the role of agriculture in rural economy shall be systematically decreasing, while the multifunctionality of rural areas shall increase,
- there will be an increase of specialisation of the rural areas,
- there will be an intensification of spatial polarisation of agricultural areas, associated with slow changes on the marginal areas (where high significance of small farms shall persist) and dynamic development of agriculture on the areas with more effective and larger farms,
- the structure of agriculture in the new EU member states shall stabilise,
- climatic changes shall exert a regionally differentiated influence on agriculture, depending upon region they shall stimulate or hamper the development of farming production.

The hypothetical changes shall apply to a bigger or lesser extent the rural areas and the agriculture of Vojvodina. In this connection the following scenario can be envisaged. The agricultural areas of Vojvodina shall be characterised by a persistent process of outflow and ageing of the population. This shall exert a negative influence on the economic condition of an average farm. It is commonly known that older farm holders are more conservative and less open to new methods and production technologies. On the other hand, outflow of the younger people and lack of successors may be conducive to enlargement of the economically stronger farms.

The weakening role of agriculture has to be accompanied by a well designed development of new economic functions of the rural areas. In the case of Vojvodina, characterised by very good agro-ecological conditions and mono-functionality, this process shall be quite difficult. It seems that the rural areas of this region are "condemned" to agriculture, which shall mainly concentrate on crop production, yielding lower economic effects than animal production. Hence, efforts ought to be

directed towards optimisation of production, so as to fully use the potentialities of the region. This ought to be absolutely accompanied by production specialisation and by the process of gradual increase of the average farm acreage.

Perspectives for the agriculture of Vojvodina in the light of results from the TERESA project

The key theme of TERESA was constituted by "the mutual interactions that take place between agriculture, the environment and other aspects, social and economic, of the wider rural development processes". A major hypothesis of the TERESA project was that the integration of agriculture into rural development is both linked to the type of regional development and to the type of supply chains of agricultural products. In order to confirm this hypothesis, a typology of regional development (based on the statistical analysis) and a typology of supply chains (based on 31 supply chains analysed in the 11 regions - NUTS 3) were elaborated. Empirical studies of the statistical material allowed for distinguishing the following five types of regional development:

- 1) in transition, peri-urban,
- 2) in transition, rural,
- 3) developed, rural,
- 4) developed, peri-urban,
- 5) developed, rural, tourist.

Among these types special attention ought to be paid to the first two, which can characterise the territory of Vojvodina in the pre-accession period and during the first years of membership in the EU. Within each of the types the areas of detailed studies were selected. The first type (*in transition, peri-urban*) was represented by Timis region, while the second (*in transition, rural*) by Chelm-Zamość and Bacs-Kiskun regions (Table 9). In regions with a transition economy, agriculture is characterised by low ties with other activities and stakeholders and by standard products. Agricultural social outcomes for other activities and inhabitants are very low, but employment in agriculture remains high.

Table 9. Synthetic image of rural areas of Vojvodina against the background of Rother, selected regions conform to typology elaborated in the TERESA project

Specification/Region	Vojvodina	Chelm-Zamość	Timis	Bacs-Kiskun
Exemplary supply chains analysed	-	Milk Rapeseed Hop	Pork Cereals Milk	Sunflower oil Maize for feeding Sweet corn Pork
Rurality according to OECD methodology	Predominantly rural	Predominantly rural	Intermediate	Predominantly rural
Urban-Rural typology (ESPON)	Low human influence, medium human intervention	Low human influence, medium human intervention	High urban influence, high human intervention	Low urban influence, high human intervention
Largest agglomeration	Novi Sad	Chelm	Timisoara	Kecskemet
Agricultural preconditions	Very suitable soil quality, favourable relief and climate conditions	Very suitable soil quality, favourable relief and climate conditions	Suitable soil quality, favourable relief and climate conditions	Suitable soil quality, favourable relief and climate conditions

Economic development	Low economic power, low labor productivity, high agricultural employment	Low economic power, low labor productivity, very high agricultural employment	Low economic power, very low labor productivity, high agricultural employment	Low economic power, low labor productivity, high agricultural employment
Agriculture	Strongly declining agricultural sector, small farm sizes, prevailing husbandry, intensive arable crops	Strongly declining agricultural sector, small farm sizes, prevailing husbandry, intensive arable crops	Strongly declining agricultural sector, small farm sizes, prevailing husbandry, mixed intensive arable crops and extensive pastures	Strongly declining agricultural sector, small farm sizes, prevailing husbandry, intensive arable crops
Integration of agriculture in to rural economy and society	Very low regional and low agricultural diversity level, no major integration of agriculture in to economy and society	Very low regional and low agricultural diversity level, no major integration of agriculture in to economy and society	Medium regional and low farm diversity level, no major integration of agriculture in to economy and society	Low regional and low agricultural diversity level, relatively strong integration of agriculture in to economy and society

Source: TERESA and own research

The supply chain types considered included:

A – Specific products

A1 – traditional and typical products (local products based on the strong territorial identity and reputation, e.g. wine, schnapps, beaufort cheese),

A2 – products identified by their territory (characterized by a territorial link, which is much weaker than in A1 and based more on the cultural than natural factors, e.g. apples, hop)

A3 – consumer-driven products (characterized by their ability to meet the demand of customers, e.g. wood, goat cheese)

B – Standard products

B1 – standard products of local consumption (products intended to feed the local population, e.g. milk, cereals)

B2 – standard products with geographical attributes for the consumers (name of the region bears positive connotations for consumers, e.g. milk, beef, butter)

B3 – standard products with a regional or national market (products sold in the region and the country, e.g. rapeseed, maize, sunflower),

B4 – standard products with an international market (mass production, e.g. wood, wheat, tomatoes).

Empirical analysis of 31 agricultural products, turned out in eleven regions, representing different types of economic development, allowed for determination of the territorial integration of agriculture, which was characterized by three different “patterns of integration”, namely: coexistence, competition and cooperation. The following conclusions were drawn as a result thereof:

- urban regions and “consumer-driven” products are often in a competition-cooperation pattern,

- urban regions and “standard” products are always in a competition pattern,
- rural regions of developed economies and standard supply chains are either in a coexistence or in a competition pattern,
- tourist regions and specific product supply chains are in a competition-cooperation pattern,
- rural regions of transition countries and standard supply chains are in a pattern of co-existence (specific products are very seldom in these regions); a lower level of urbanisation and of purchasing power makes it probably more difficult to develop specific products, dedicated to high value added markets, or other activities linked to tourism, for instance; the main impact of agriculture is its weight in the local employment and seems to be “reduced” to its food supply contribution; in some cases, these standard supply chains have mainly local market consumption (TERESA – *Policy options...*, 2009, p.30).

One of the basic effects of the detailed analyses was the assessment of the impact from individual agricultural products on selected social, economic and environmental characteristics of the regions considered. In this context, the issues analysed included: resources mobilised, regional importance, dynamics, networks, outcomes (Table 10).

Of special significance for the identification of the agricultural development perspectives in Vojvodina is the synthetic assessment of the impact of individual farming products on the environment, employment and social situation (Table 11). The results of such an assessment for three regions of Central and Eastern Europe may provide an example for the analogous assessment in the case of agriculture of Vojvodina, and constitute the basis for selecting the possibly optimal directions of agricultural production (Table 12).

Tab. 10. Integration of supply chains into rural development on the example of type B3 – standard products with a regional or national market.

Category	General characteristics	Homogeneity inside the type
Type of region	supply chains are in rural regions with a developed or transition economy	low
Resources mobilised	no specific resources are mobilized, workforce represents a low or high production input	medium-low
Regional importance	medium to leading	medium
Geographical extent	production is local, processing is local, end consumption is local or regional	medium-high
Dynamics Networks	low to high adaptability, upward trend or in difficulty or behind low relations with economic sector low to high link with local government low relations with actors of environment low relations with actors of research or education	low medium-high
Outcomes	economic: medium to good sustainability performance, low to high employment social: generally bad or medium sustainability performance environment: bad to medium performance for sustainability	medium

Source: TERESA Report

Table 11. Role of selected agricultural products in the development of rural areas on the basis of results from the TERESA project

Type	Supply chain	Outcomes								
		Chełm-Zamość			Timiș			Bacău-Kiskun		
		Employment	Social	Environment	Employment	Social	Environment	Employment	Social	Environment
B1	cereals				high	low	medium, negative			
	sunflower							low	low	bw, positive
B3	maize							high	low	bw, negative
B1	milk	high	bw	low, negative	medium	low	bw, negative			
B3	rapeseed	bw	bw	low, negative						
B3	pork				medium	medium	medium, negative	high	low	bw, negative

Source: TERESA

Table 12. Conclusions drawn from the results of the TERESA project for Vojvodina

Problems/weaknesses	Challenges and Recommendations
Lack of farmers' cooperation and entrepreneurship Too many subsistence farms	There is a global need to restructure agriculture and to improve entrepreneurship and cooperation between farmers
Too many standard products Low level of productivity	The most important role is played by the standard products with a regional or national market, but there is also a potential for developing regionally typical agricultural products
Lack of jobs outside agriculture	In the development of agriculture a broader economic context has to be accounted for, including: level of development of infrastructure, establishment of new jobs and adequate development of service The development of occupations focused on valorisation of agricultural products is necessary Non-agricultural activities ought to be developed

Perspectives for the agriculture of Vojvodina in the light of results from the EURURALIS project

Four feasible global scenarios of development were elaborated within the EURURALIS project, and the significance of these scenarios was assessed for the rural areas of Europe in the perspective of the year 2030. Elaboration of the scenarios resulted from the analysis of a number of factors on the European and global scale, having influence on the development of functions and socio-economic situation of rural areas. Among the driving forces distinguished demographic changes, technological advance, climate change, macroeconomic processes, policies of the EU, WTO, national policies etc. were considered.

The first, most liberal scenario is *Global Economy*, assuming abolition of barriers to trade, free movement of goods, services, capital and people, as well as very fast economic growth on the global scale. This scenario assumes highly limited interventions of governments into the free market economy and an intensive technological advance. Subsidies to agricultural production in the framework of the Common Agricultural Policy are assumed to be entirely removed. This is the sole scenario, in which the European Union is assumed to be enlarged with Turkey, Ukraine and some Balkan countries.

According to the *Global Economy* scenario a highly significant decrease of employment in farming and of the share of agriculture in the GDP in Europe is envisaged. There would be a drop in the share of agricultural land, particularly in the EU-15 countries, while there might be a definite increase of this share in the new member countries. Technological advance in agriculture shall bring increase of yields and lower labour inputs. Self-sufficiency in the domains of cattle, sugar and dairy production would be much lower, compared to the year 2001, in all the member countries. This would be, in particular, the effect of liberalisation of the trade in food products and the competition from cheap production from outside of Europe. Self-sufficiency of the new member countries with respect to the majority of agricultural product types shall decrease, compared to 2001, due to higher demand for food, caused, in particular, by the higher incomes of population in these countries.

Opening up of the boundaries and accession of Serbia to the European Union may cause more intensive migrations of the population from the peripheral areas in search for better paid jobs. This shall result in the drop of joblessness in the outflow areas, but also progressing depopulation. This might also affect the peripheral areas of Vojvodina. A threat for the development of such areas shall be constituted by the so-called brain drain. One can expect that in the vicinity of large towns the areas of agricultural land shall significantly shrink, as transferred to the residential and service functions (Novi Sad). There would be a process of abandoning unprofitable farming activity in the small family farms, and passage of the agricultural population to the non-agricultural occupations. Concentration of the agricultural population in large, modern enterprises, having perspectives for fast growth, could be expected. Intensive restructuring and modernisation processes of agriculture and the food processing industry will be necessary in order to secure competitiveness on the agricultural markets.

The *Global Economy* scenario assumes gradual withdrawal from subsidising of agriculture (CAP subsidies and cohesion policy are phased out by 2030). In this connection, Serbia after having joined the Community, shall have limited possibilities (compared to those that the new member states used to have and currently have) of taking advantage of the means from the EU budget for the direct investments into the development of agriculture and rural areas.

In case of realisation of the *Global Economy* scenario one should expect sharp competition on agricultural markets, since liberalisation of trade with the rest of the world is assumed. Hence, agricultural products from Serbia would find it difficult to conquer the European market, in view of the highly probable intensive inflow of cheap products from outside of the European Union. Thus, for instance, there is high demand in the EU for the oleaginous crops (the degree of self-sufficiency of the EU with this respect is low), but Vojvodina, being the producer of soya and sunflower, may not stand up to the competition from the side of the great producers of these plants (from, e.g., Latin America and the USA). This concerns also production of sugar, now one of the most important products, exported by Serbia to the European Union. Abolition of barriers in trade with non-European countries might bring about a drop of competitiveness of the Serbian sugar.

The next scenario, *Continental Markets*, assumes the division of the world into regional blocks. Countries of OECD would constitute a single block featuring relative self-sufficiency. Functioning of a common market of the EU, USA and Canada is assumed. At the same time limitation is assumed of the inflow of people and of trade with the countries from outside of the block, as well as a slowdown of extension of

the European Union. Yet, this scenario still envisages high increase of the population number.

This scenario assumes maintenance of high support for agriculture in the European Union. Budget, meant for agriculture, is the biggest among all the scenarios considered (with preservation of support for exports, direct payments and other forms of assistance). The policy of protection of the internal market against the inflow of cheap food from outside of the transatlantic zone shall be continued (especially of meat, sugar and dairy products). All these instruments would be conducive to the increase of real incomes infaming. This concerns, first of all, incomes generated by the range of products, supported in the framework of CAP (CAP commodities). The area of agricultural land on the scale of the entire European Union shall be stable (in connection with the drive towards self-sufficiency in the framework of the transatlantic block). This scenario is the only one, in which there is no decrease of the area of agricultural land in the European Union. There will be a moderate – in comparison with other scenarios – increase of crop and animal production.

In the case of this scenario one could expect the continuation of trends in export of agricultural products from Serbia to the European Union, owing to the agreement of 2000, which abolished tariffs and quotas on imports of the majority of agricultural products from Balkan countries, including Serbia. If the trade barriers with respect to the majority of the non-European countries are maintained as assumed in this scenario, the competitive position of Serbia shall remain relatively stable. At the same time, exports of protected agricultural products (e.g. beef, sugar, wine) from Vojvodina may remain under quotas, given that one of the key priorities of the European Union would be self-sufficiency in agricultural products. A potential reduction of quota for sugar, for instance, would be disadvantageous for Serbia, since sugar is an important export item (the scenario considered assumes an increase of sugar production in the EU). Maintenance of subsidising of exports in the EU might also negatively affect the trade balance of Serbia with the EU.

Further, the possibilities of migrating to the EU countries shall be limited. In this scenario the differentiation of the levels of economic development in Europe shall persist and even get deeper.

The subsequent scenario, *Regional Communities*, assumes strengthening of significance of regions and local communities of the European Union, increased emphasis on protection of culture and environment, limitation to migrations, slowdown of extension of the European Union with further countries, strengthening of cooperation within the EU-15. This scenario features the lowest economic growth among all the scenarios considered, along with the highest decrease of the population number over the next couple of decades.

Conform to this scenario, the instruments of support for agriculture in the EU shall be maintained, and the budget of direct payments might even increase. Protection of the internal market with tariff barriers shall be continued, and imports of agricultural products from the outside of the EU shall also be limited through high product quality requirements, the necessity of fulfilling high production standards related to environmental protection etc. Generally, a downward tendency can be expected, concerning foreign trade. Low economic growth, compared to other scenarios and demographic regress, and the resulting decrease of consumption, given the simultaneous application of instruments promoting local and regional products, may bring about a curb on demand for food from outside of the European Union. Yet, the

Balkan countries, including Serbia, shall remain in a better position⁷ than the non-European countries, for which the access to the European markets shall remain significantly limited. This scenario envisages low demand for meat in the EU-15 countries, linked with the change in the consumer preferences. This may get reflected in the difficulties in exporting meat from Serbia. It is worth noting that the process of population decrease in the European Union, amplified by the significant barriers to the inflow of immigrants, shall become quite intensive in the framework of this scenario, entailing an essential decrease of demand for food.

Products exported from Serbia shall have to fulfil high quality standards in order to be able to enter the EU market.

Implementation of the environmental priorities of the European Union shall consist, inter alia, in stimulation of production of bio-energy, which may have a positive impact on demand for energy crops. Cultivation of energy crops for export has a chance of becoming an important branch of agricultural production.

The inflow of cheap food from the European Union to Serbia ought not be expected, given the general decrease of production, both crop and animal production, as well as liquidation of export subsidies in the EU.

Finally, in the *Global Cooperation* scenario, emphasis is put on the development of multilateral international cooperation, without regional constraints. The purpose of this cooperation would be, in particular, to even out the economic differences on the global scale, and especially the struggle with poverty, as well as care for the natural environment. Environment protection shall constitute an important priority of the policies, and technological advance shall to a large extent be directed towards the environment-friendly production methods. Development of the renewable energy sources will take place, including production of bio-fuels. This scenario assumes gradual removal of trade barriers, and also a relatively flexible migration policy. It is assumed that until 2030 only Turkey shall join the European Union. There would be a high economic growth, though lower than in the *Global Economy* scenario.

The *Global Cooperation* scenario envisages high demand for bio-fuels and increase of their production in Europe, especially in Central-Eastern Europe. Hence, cultivation of energy crops and production of, for instance, bio-ethanol could have development perspectives in Vojvodina. Yet, competition on the bio-fuel market can be very sharp, due to the removal of the interventions into international trade, including the instruments of protection of the European market. In order to adequately respond to the strong competition, the agricultural sector will have to be modernised, the sizes of the farms will have to increase, and employment in farming will have to go down.

This scenario includes the perspective of low demand for meat in the EU-15 countries, linked with a change in the consumer preferences, and so an increase of export of meat from Vojvodina to these countries cannot be expected. On the other hand, an increase of domestic demand for meat could be envisaged, in view of the assumed high economic growth, also in the countries of Central and Eastern Europe. There are definite perspectives for the strengthening of export of Serbian legumes and fruits to the EU, the presence of these products on the Community markets being already well rooted. In this context one should consider the possibility of increasing the area of cultivation of vegetables and fruits in Vojvodina.

⁷ Based on the already mentioned agreement with the European Union, abolishing quotas and customs tariffs on the majority of agricultural products, imported to the EU from Balkan countries.

The assumed flexible migration policy of the European Union might turn out encouraging for emigration from Vojvodina and for abandoning of agriculture by the rural population.

This last scenario assumes that high standards of food quality and of care for the quality of natural environment, as well as care for animal well-being shall be in force in the European Union. Hence, food exported to the European Union will have to satisfy quite stringent requirements. In order to meet the requirements, organic and nature-friendly farming should be promoted and supported; institutional system of certification of export-oriented organic production should be developed (however, one can expect that demand for organic food in Serbia will grow rather slowly). The first step to promote nature-friendly agriculture is widespread implementation of the code of good agricultural practices and other international quality systems.

Perspectives for the agriculture of Vojvodina in the light of results from the CEEC AGRIPOLICY project

In the framework of the CEEC AGRIPOLICY project a number of reports have been elaborated, referring to various branches of agriculture and kinds of activities on rural areas of Serbia, namely:

- *Recent developments in agricultural policy - Assessment and outlook of the wine and sugar sectors,*
- *Availability and performance of rural credit facilities,*
- *Major agricultural developments in 2005 - Assessment and outlook of the market integration of the cereals sector,*
- *Structure and competitiveness of the milk and dairy supply chains,*
- *Rural technology transfer,*
- *Employment and labour market issues in rural areas,*
- *Situation and perspectives for the meat sector,*
- *An assessment of the competitiveness of the dairy food chain,*
- *Analysis of renewable energy and its impact on rural development.*

Reports from all the 19 countries considered were summarised in the form of several synthetic reports, i.e.:

- *Synthesis of CEEC AGRIPOLICY reports: major agricultural development since 2004 in the New Member States, in the Candidate Countries and in the Countries of the Western Balkan,*
- *Structure and Competitiveness of the Dairy Supply Chain in the New Member States, Candidate and Potential Candidate Countries,*
- *Monitoring of market and trade developments in the New Member States, in the Candidate Countries and in the Countries of Western Balkans,*
- *Assessment and outlook in the cereals sectors,*
- *Monitoring of agricultural policy, market and trade developments in the New Member States, in the Candidate Countries and in the Countries of Western Balkans,*
- *Situation and perspectives for meat sector in the enlarged EU, in the Candidate Countries and in the Western Balkans.*

On the basis of the diagnoses of existing conditioning, carried out within the project, authors of individual reports formulated the recommendations for the agricultural sector development policy. It is extremely valuable in the project considered that the

authors of the synthetic reports based on the comparison of the situations in 19 countries, so that their recommendations for Serbia (Vojvodina) were founded on the possibly objective image of the circumstances in this country (region) with the general position of the agricultural sector in all the countries of Central and Eastern Europe (from Estonia to Albania). Here below the most important conclusions are listed, resulting from the investigations, carried out in the framework of the CEEC AGRIPOLICY project, defining the feasible directions of development of agriculture in Vojvodina.

1. Farming is one of the most important sectors of the regional economy, and it plays a dominating role in the structure of exports (with the share of more than 20%). The most important export products are: fruits and vegetables, cereals (primarily maize), beef, pork, sugar and milk.
2. The fact that the agricultural exports are dominated by the non-processed products ought to be considered a disadvantage. At the same time, mainly highly processed agricultural products are being imported. This demonstrates the weakness of the food-and-agricultural processing industry of the region.
3. Agricultural sector in Vojvodina is characterised by a clearly dual structure – large farming enterprises are accompanied by numerous small farms (below 5 hectares), oriented at subsistence farming. There is, though, a perceptible decrease of the number of farms smaller than 1 hectare of area.
4. Given the average meat consumption in Serbia as compared to the one in the EU-15 countries, an increase can be expected of meat consumption in the nearest years (such process is taking place in the majority of the new member states). In this connection it appears necessary to improve the effectiveness and to increase the intensity of animal production in Serbia – and in Vojvodina.
5. During the recent years a steady increase has been observed of the export of milk and milk products. Yet, production potential is not being used in full, which is due primarily to the low level of milk yield from cows (on the average in Serbia it is at about 40% of the average for EU-25). This yield value is largely dependent upon the farm type – values much higher than the average are attained in the large, modernised farms.
6. Despite good quality soils, fit for agricultural production, crop yields for the majority of plants cultivated are below the European Union countries' standards. Thus, for instance, sugar beet growing, conducted mainly in the areas of Srem, southern Banat, as well as southern and central Bačka, on the soils of chemozem and heavy black soil types, gives yields at the average level of about 37-40 tonnes per hectare, while the average for EU-15 is approximately 55 tonnes.
7. Despite a significant improvement during the recent decades in the level of education of farm holders, their professional qualifications are still unsatisfactory.
8. The recent privatisation of agricultural and food processing enterprises (*kombinats* - combines), having significant production and processing capacities has led to concentration within a small number of vertically connected firms.
9. Existence of very weak horizontal links between various agricultural producers and equally weak vertical links along the line "farmers – food-and-agriculture industry – trade" is disadvantageous.

10. There are serious limitations on the market of agricultural products, only a small part of them is subject to long-term contracts, and these are in principle only industrial crops (sugar beets, soybeans and sunflower).

Scenarios, challenges and recommendation for the agriculture of Vojvodina resulting from the analysis of projects

Table 13, which is provided below, lists and explains the basic challenges and recommendations for the agriculture of Vojvodina, resulting from the analysis of output from the four research projects, carried out in the countries of the European Union.

Table 13. Challenges and recommendations in the light of the scenarios of development of agriculture in Vojvodina based on the selected research projects of the EU

Item	Scenarios, challenges and recommendations
Role of agriculture in the economy	<p>Rural areas of Vojvodina can be classified, according to the typology of the TERESA project, among the rural regions in the period of transformation. Relatively low level of urbanisation and the geographic as well as economic peripherality shall slow down the development of new economic functions. Yet, the role of farming in the functional structure of rural areas and in the rural economy shall be consistently weakening, to the advantage of the non-productive functions of the countryside. This shall be accompanied by specialisation of rural areas, and that is why elaboration of the directional strategies of development, accounting for the local development propensities should be given special attention.</p> <p>The weakening role of agriculture must be accompanied by the well thought out development of the new economic functions of rural areas. Given the very suitable agro-ecological conditions and the character of the region the rural areas of Vojvodina are "condemned" to agriculture, and so the new economic functions must be consistent and complementary with respect to the dominating function (e.g. service, food-and-agricultural processing).</p> <p>Tourist function, including agro-tourism, shall not have a significant economic position in the region. Tourist service shall rather be developing very slowly, in selected points. On the regional scale the best opportunities with this respect exist along the Danube valley and in the vicinity of Fruška Gora. One can expect single initiatives also in the areas of vineyard growing. Increase of economic and demographic potential of Novi Sad shall generate demand for facilities offering catering and event service (wedding houses, conference and training centres) in the suburban zone.</p> <p>Dynamic changes in the economy and spatial structure ought to be expected in the neighbourhood of Novi Sad, where sharp decrease of the area of agricultural land shall take place, to the advantage of land for residential housing, as well as service and trade. This process is typical for the majority of European towns, and it is especially intensive currently in Central-Eastern Europe (the urban sprawl phenomenon). The urbanisation process shall be accompanied by conflicts between the agricultural function on the</p>

	<p>one hand and the residential, service and trade functions on the other. Lack of planning and of adequate control over spatial order may bring about irreversible changes in the spatial structure and landscape of suburban areas.</p> <p>Within the zone of influence of Novi Sad, production in small family farms shall first of all be abandoned, with the respective population passing over to non-agricultural occupations. This shall necessitate assistance in facilitation of change of professional skills.</p>
Farms	<p>Spatial polarisation of agricultural areas shall increase. Changes shall be slow within the peripheral areas, where high significance of small farms shall persist. The process of concentration of land, tending towards optimum farm size, should be supported. At the same time, there will be a dynamic development of agriculture on areas featuring higher effectiveness and in large farms. Modernisation and rationalisation of production may bring about reduction in employment and increase of joblessness in the countryside.</p> <p>The requirements of competitiveness shall enforce an increase in specialisation and intensity of production, which will be accompanied by a gradual increase of the average acreage of private farms. Actions aimed at concentration and consolidation of land should constitute a priority in the strategic activities on the rural areas of the region.</p> <p>It must be clearly emphasised that private farming shall constitute the basis for the future development of this sector of economy in Vojvodina. Yet, in order for the family farms to fulfil their functions it is necessary to start the above mentioned processes of consolidation, increase of specialisation and productivity, through enhancement of effectiveness.</p>
Agricultural production	<p>Agricultural production shall be oriented mainly at the local and domestic national market. Domination of standard products (cereals, sunflower, soybeans) shall persist, but there may also occur an increase of share of the regional products. Hence, attempts of popularising the regional products ought to be supported.</p> <p>Domination of crop production over animal production shall persist, which will bear a disadvantageous influence on the economic condition of agriculture and the qualities of the natural environment. Good agro-ecological conditions determine the crop-oriented bias of agricultural production. Yet, a bigger part of crop production than until now might get subordinated to animal production.</p> <p>According to the scenario <i>Eururalis Global Economy</i> farming production shall get concentrated in large, modern and competitive enterprises. In this scenario one should expect sharp competition on the agricultural markets, since it assumes liberalisation of trade with the rest of the world. In this connection, agricultural products from Vojvodina shall have difficulties in conquering the European market, in view of the inflow of cheap products from outside of the European</p>

Union. As the producer of soybeans and sunflower, the region may not be able to effectively compete with the sharp competition from the side of the large-scale producers (e.g. from Latin America and the USA). This concerns also sugar production. Removal of barriers in trade with non-European countries may bring about a drop in the competitiveness of Serbian sugar. Sales markets and niche (regional) products should be found that would allow agriculture of Vojvodina for achieving production stability.

According to Eururalis Continental Markets scenario continuation of trends in exports of agricultural products from Serbia to the European Union could be expected, owing to the agreement of the year 2000, which abolished the custom tariffs and quota limits in the import of the majority of agricultural products from Balkan countries. Reduction of the export of sugar would be disadvantageous for Serbia (this scenario assumes an increase of sugar production in the EU). Maintenance of export subsidies in the EU might also exert a negative influence on the trade balance between Serbia and the EU. That is why efforts ought to be made aimed at improvement of production and distribution effectiveness in these branches, which are important for the region (like wheat, maize, soya).

Conform to the Eururalis Regional Communities scenario, agricultural products exported from Serbia shall have to comply with high quality standards in order to satisfy the requirements of the EU markets. It shall become necessary to popularise the ecological production standards. The pro-ecological priorities of the European Union shall be reflected, in particular, in the stimulation of production of bio-energy, which, in turn, shall give rise to demand for energy crops. Cultivation of energy crops for export could become an important branch of agricultural production in Vojvodina.

Inflow of cheap food products from the European Union to Vojvodina ought not be expected, given generally envisaged in this scenario decrease of production levels, in both crop and animal production, as well as removal of export subsidies in the EU.

The Eururalis Global Cooperation scenario envisages high demand for biofuels and the increase of their production in Europe, especially Central-Eastern Europe. Vojvodina has quite high chances of developing such production. Yet, in order to stand up to the sharp competition the farming sector will have to go through modernisation, with the necessary increase of farm acreage and decrease of employment in agriculture. At the same time, an increase can be expected of the domestic demand for meat, in view of the assumed high economic growth, also in the countries of Central and Eastern Europe. There are definite perspectives for strengthening the export of Serbian vegetables and fruits to the EU.

Dairy production plays an important role in the agriculture of the region. Achievement of the effectiveness of milk processing shall be realised through a wide spectrum of factors: production concentration, improvement of professional skills of producers,

Agricultural population	<p>selection of milk cows so as to increase milk yield, improvement of the quality of extension and veterinary services, promotion and optimisation of the sales markets. Requirements concerning the improvement of effectiveness of milk production and processing are indicative for the potential similar undertakings in other directions of agricultural production.</p> <p>Special attention ought to be paid to the hygienic standards, with which such key words are associated as food safety, veterinary and phytosanitary information management systems.</p> <p>The above postulates point out the most important domains, in which modernisation and adaptation to high requirements, valid on the European markets, are necessary.</p> <p>Agricultural areas of Vojvodina shall be characterised by a persistent process of population outflow (mainly of the young), resulting in the ageing of rural population. Conform to the <u><i>Eunurals Global Economy</i></u> scenario, accession of Serbia to the European Union shall entail intensified job migration of the population from rural areas, which, in turn, brings the threat of the so-called brain drain and depopulation.</p> <p>Such processes will exert a disadvantageous influence on the economic condition of farms, part of which may be left without successors. The planning documents ought to envisage solutions, concerning the ways to keep in place at least a part of the potential migrants.</p> <p>Diversification of economic activity within the rural areas may allow for the alleviation of the process of outflow of the young from rural areas and may support the transition of a part of farmers to other sectors of economy.</p>
Sales markets and agri-business environment institutions	<p>In the development of agriculture a broader economic context ought to be accounted for, including the level of development of infrastructure, creation of new jobs and adequate development of service. Bigger financial means ought to be directed to the investments supporting the broadly understood business environment of agriculture, while welfare expenditures ought to be gradually limited.</p> <p>The institutional system, supporting the agricultural sector in Vojvodina should be significantly improved. Investment outlays ought to be directed, first of all, to the following sectors: research, extension, inspection, laboratory and market information services. Owing to this, there will be a faster flow of modern technologies and specialised knowledge to the farmers.</p> <p>The strategy of development of agriculture should be to a larger extent enriched also with elements linked with the development of rural areas, since correct development of agriculture and food economy depends upon the viability of rural areas and appropriate living conditions for the inhabitants (quality of roads, water supply, sewage systems, and of other elements of social and technical</p>

Climate change	<p>infrastructure).</p> <p>Foreign sales markets of agricultural products originating from Vojvodina ought to be significantly broadened. Side by side with the traditional export directions, such as Montenegro and Macedonia, special attention ought to be paid to the markets of other countries of the region (Bosnia and Herzegovina, Croatia, Albania), as well as those of Italy, Germany and Russia.</p> <p>Collaboration in the framework of farmer cooperatives and associations, as well as units of local self-government, ought to be strengthened.</p> <p>The influence of the contemporary climate changes shall become visible in agriculture. These changes may have either stimulating or hampering impact on farming production. The extreme phenomena shall play a particularly significant role.</p>
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CONTEMPORARY STATE AND PERSPECTIVES OF DEVELOPMENT FOR AGRICULTURE OF VOJVODINA – OUTPUT FROM THE FIELD STUDY

During the field study four expert interviews were carried out (several persons took part in each of those – all together 13). The interviews were carried out according to a scenario, prepared beforehand (a set of obligatory questions, the same for all respondents), allowing, though, for a broadening of the discourse with side topics, appearing during the interview. This made it possible not only to acquire information concerning the problems, defined in the scenario of the interview, but also for the wider treatment of the problem domain, which the interview concerned. Application of the in-depth expert interviews allowed for gaining of detailed information on the state of the agricultural sector in Vojvodina.

The interviews were conducted with the representatives of the regional and local authorities, scientists, farm holders, farm managers, and managers of agricultural service companies. Selection of respondents and of places of interviews was purposefully done. Besides the members of the study team (Professor Jerzy Bański, Maria Bednarek-Szczepańska and Konrad Czapiewski), Professor Nebojsa Novkovic from the University of Novi Sad took also part in all the interviews.

Novi Sad, 12.04.2010 (Monday)

Meeting in Regional Chamber of Commerce Novi Sad

Participants: *Djordje Bugarin* – Secretary of the Association of Agriculture, Chamber of Commerce, Professor *Danilo Tomic* – Higher School of Professional Business Studies Novi Sad, Professor *Nebojsa Novkovic* – Faculty of Agriculture, University of Novi Sad, Professor *Jerzy Bański* – Institute of Geography and Spatial Organization PAS, *Dusan Sipcanovic* – Centre for Strategic Economic Studies "Vojvodina-CESS", *Vidosava Zitic* – Chamber of Commerce, *Zorica Radosavlevic* – Chamber of Commerce, *Maria Bednarek-Szczepańska* – Institute of Geography and Spatial Organization PAS, *Konrad Czapiewski* – Institute of Geography and Spatial Organization PAS

Table 14. Results of the interview in Novi Sad

Feature	Question	Responses
Role of agriculture in regional economy	What influence is exerted by the location of Vojvodina on the development of agricultural economy?	Location of the region in very advantageous natural conditions (first of all very high quality of soils) is conducive to the development of food economy. Economic potential of the region is strengthened, additionally, by the location at the crossroads of transport routes (road, railway and waterway) in the vicinity of the European Union (trans boundary projects).
	Are there valid current planning documents concerning regional development, including development of agriculture?	At the local level there are no such strategic and planning documents, except for a couple of municipalities. Although the obligation of elaborating such documents has been recently introduced, only few municipalities undertook an action to prepare them. At the central level consistent and systematic approach to preparation of the planning documents is lacking, and they are being changed with the advent of new administrations. Planning in agricultural economy is characterised by excess centralism. The scope of competence of the regional self-governmental bodies in domain of creation and realisation of agricultural

		policy is insufficient.
	Is agriculture in the region spatially differentiated?	Generally, with exception of a couple of microregions, specialising in orchard production and vineyards, the area of Vojvodina is agriculturally uniform.
	Is on rural areas non-agricultural activity developing and what forms of non-agricultural activity are preferred?	There is sporadic tourism development. Other socio-economic functions have no essential significance or are of very local character. Generally, development of new functions of rural areas is in the initial phase. In the future emphasis ought to be placed on the dynamic development of food processing. Some role ought also to be played by renewable energy production (e.g. geothermal energy).
	How is the role of farming in the region changing, and is farming supported on the national and regional levels? What are the instruments of support?	There are several funds, supporting rural areas (e.g. guarantee, development or agricultural funds). Their basic distribution is performed at the central level, while it would be more justified to have them at the disposal of the regions. Very limited support originates from foreign funds.
Farms	What is the course of processes of land concentration and consolidation? What about land supply?	Concentration and consolidation of agricultural land ought to be among the priorities of agricultural policy. It is highly costly and there is shortage of means for it. Until now only few pilot programs of plot consolidation have been carried out. In addition, frequent changes in agricultural policy and lack of consistency and of long-term planning hamper the consolidation processes. The issue of land ownership has not been properly regulated until now, which affects mainly farmland. Quite popular are short-term leases of the state-owned land, which bring about numerous undesirable effects (concerning maintenance of infrastructure, land quality etc.).
	What is the situation on the labour market within the agricultural sector?	There is a problem of unemployment, connected with laying off the employees of the agricultural enterprises. Privatisation broke the chain linking agricultural production with processing, which also brings negative effects on the labour market. In some enterprises there is excess employment of the administrative and technical staff. On the other hand, in the high harvest season there is shortage of farmhands.
	What is the condition of the family farms?	Economic condition of the family farms is differentiated and depends, first of all, upon their acreage.
	What type of farms ought to develop in the region?	There is room for agricultural enterprises and large family farms. Correct functioning of enterprises necessitates regulation of the property issue and finalisation of the privatisation process. It is necessary to modernise production and enhance competitiveness.
Agricultural production	What direction of agricultural production ought to develop in the region?	Crop production (mainly cereals and soybean, as well as maize, sunflower, sugar beets, vegetables and fruits) appear to dominate the perspective. Animal production is not subsidised and is not profitable. There are potentialities for further development of pig and poultry raising. The inconsistent, short-sighted agricultural policy and the influence of the interest groups constitute a barrier to the rational development of agriculture.
	What food products should play the priority role in	Main plant products (cereals, maize, soybeans and vegetables). Export of processed plant products in the

	exports?	form of ready-to-use food products is recommended.
	Is bio-energy developing?	Of no economic significance. Financial support (national and EU) is the necessary condition for the development of the bio-energy sector. Without such a support it will remain a non-profitable activity.
	How is ecological farming developing?	The state supports production of ecological food, but it constitutes a margin in the structure of agricultural production. Discussion on the subject of ecological farming is becoming increasingly wide, an increase is planned in this respect, but not much changes in the domain.
Agricultural population	What is the character of the contemporary demographic processes in the countryside?	Outflow of the population, mainly of the young, with, however, a lower dynamics of the process than in other regions of Serbia. Lack of successors in the farms and "dying out" of villages results from the outflow of the young to towns. Support for young farmers is not sufficient. Attempts to activate rural population and rural areas do not bring expected effects.
	What undertakings ought to be implemented in order to improve the educational level of farmers?	Employees of the agricultural enterprises do not have agricultural nor managerial professional training. Shortage of the teaching staff is certainly felt, and there is an insufficient number of agricultural extension service centres. Agricultural education ought to constitute one of the priorities in the agricultural policy of the country.
Sales markets and the institutions of the business environment of agriculture	What is the state of equipment of the farms with technical infrastructure?	Generally good. Unsatisfactory development of the irrigation systems causes sporadically significant production decreases.
	How is the sales market organised and what is the role of producer groups?	There are farmer associations, but their influence on the organisation of the agricultural market is minimal. They mainly deal with counselling and education.
	What are the forms of local cooperation in the domain of development of rural areas and agriculture?	Not asked
Climate change	What is the level of hazards associated with climate change?	Mainly periodical droughts or excess precipitation.

13.04.2010 (Tuesday)

Meeting at the Šid municipality and on a goat farm

Participants: *Nataša Ovrković* – President of Šid Municipality, *Dejan Kojić* – Assistant of President of Šid Municipality, *Vesna Lazić* – Manager for agriculture in Šid Municipality, *Pavle Sklenar* – Manager for agriculture in Šid Municipality, *Srdan Kovacević* – co-owner of the goat farm "Beccapra", Professor *Nebogša Novković* – Faculty of Agriculture, University of Novi Sad, Professor *Jerzy Bański* – Institute of Geography and Spatial Organization PAS, *Maria Bednarek-Szczepańska* – Institute of Geography and Spatial Organization PAS, *Konrad Czapiewski* – Institute of Geography and Spatial Organization PAS

Šid – municipality of the area of 687 sq. kms, located in the western part of Srem district (south-western Vojvodina). Municipality borders upon Croatia and Bosnia & Herzegovina. Motorway E70, linking Zagreb with Belgrade, crosses the municipality. The municipality encompasses the town of Šid (more than 17,000 inhabitants in 2002) and 18 rural settlements, inhabited by altogether more than 21,500 persons. The majority of them are Serbs (78%). Besides, important minorities are constituted

by Slovaks (6.5%) and Croats (5%). This municipality is characterised by a steady population decrease: in 1991 it was inhabited by more than 41,000 persons, while in 2007 already by only 36,500 (i.e. 88% of the number from the beginning of the 1990s). It is also characterised by a disadvantageous demographic situation – there are 102.4 persons in post-productive age (aged 60 years and more) per 100 persons in pre-productive age, while the average for Vojvodina is 96.8 persons. The average salary in the municipality is by about 10% lower than on the average in Vojvodina and entire Serbia.

Close to 60% of the area of municipality is used as agricultural land, of which 93% is arable land. Family farms dispose of more than 82% of agricultural land. Main crops are cereals (including wheat and maize), soybeans, sunflower and sugar beets. Some 20% of inhabitants of the municipality find employment in farming (within the rural areas this share exceeds 30%). Besides, food processing plants function in the municipality (including, e.g. Victoria Oil factory, producing oils – with the processing capacity of 600 tonnes of sunflower grain per day or 500 tonnes of rapeseed per day or 400 tonnes of soybeans per day, and the Big Bull meat processing plant). Municipality invests in a special industrial zone, located at the motorway junction. There are, as well, good conditions for development of tourism (a couple of lakes, monasteries in the range of Fruška Gora, museum with the paintings of one of the most known Serbian painters - Sava Šumanović). More than 98% of dwellings are connected to water supply system, and 40% to the sewage system (these values being higher than the averages for the region).



Photograph 8. Intensive goat raising in the area of Šid

Table 15. Results of the interview in Šid

Feature	Question	Responses
Role of agriculture in regional economy	How is location of municipality influencing the development of agricultural sector?	Very good location in terms of natural and transport conditions. A disadvantageous feature of location is peripheral position with respect to the capital of the region and of the country.

	Are there current planning documents concerning the development of the municipality, including development of agriculture?	There exists a municipal development strategy.
	Is agriculture of the municipality spatially differentiated?	Agriculture of the area is little differentiated.
	Is on rural areas non-agricultural activity developing and what forms of non-agricultural activity are preferred?	An important role is assigned to tourism, based on natural and cultural assets, but as of now there are no agro-tourist farms. Authorities try to promote rural tourism and multi-functional agriculture. A tourism organisation functions and conduct of trainings is planned for the future hospitality providers. Centralisation of financing and programming of the socio-economic development (including farming economy) is disadvantageous for the local authorities. An additional problem is constituted by the unstable policies, lack of long-term planning and negative influence of the interest groups, which hampers rational development of agriculture (e.g. selling of agricultural produce). Yet, the authorities of the municipality try to possibly intensively cooperate with the ministry for agriculture. One of the instruments of support for farmers, implemented by the self-governmental bodies, is assistance in obtaining credits. Self-governmental bodies are also supportive for the large agricultural enterprises.
	How is the role of farming in the region changing, and is farmings supported on the national and regional levels? What are the instruments of support?	
	What is the course of processes of land concentration and consolidation? What about land supply?	There is a necessity of putting in order the ownership relations.
	What is the situation on the labour market within the agricultural sector?	Agricultural enterprises do not have difficulties with finding low-skilled farmhands. It is definitely more difficult to find well educated specialists.
Farms	What is the condition of the family farms?	Small farms are doomed to mere vegetation (subsistence farming), and there is a lot of them in the municipality (3/4 of farms are smaller than 5 hectares). Lack of means makes investments and development impossible. Farm holders take up additional occupations.
	What type of farms ought to develop in the region?	There is room for agricultural enterprises and large family farms. A desirable solution would consist in the establishment of cooperation networks of small producers with agricultural enterprises. Crop production. Crop products ought to be processed. Selling of large quantities of unprocessed products is little profitable. In animal production development of pig raising is feasible. There are also chances for development of some niche activities (like, e.g. goat keeping). Deployment of new activities must be preceded by the demand analysis.
Agricultural production	What direction of agricultural production ought to develop in the region?	
	What food products should play the priority role in exports?	Processed food products from crops. Export to Russia has a high significance for the region.

	Is bio-energy developing?	In Victoria company an unsuccessful attempt was undertaken of producing bio-diesel fuel. Due to lack of support for production of bio-energy crops, this production became entirely unprofitable. Currently, production concentrates, instead, on edible oil from sunflower.
	How is ecological farming developing?	There are no ecologically certified farms.
Agricultural population	What is the character of the contemporary demographic processes in the countryside?	Stable situation as to the population number is due to the resettlement of population from Croatia. Outflow of the young is, however, observed.
	What undertakings ought to be implemented in order to improve the educational level of farmers?	The area is characterised by a low level of education of the farm holders, as well as low level of service provided from the side of extension service. Farmers, with few exceptions, are generally passive. Local authorities try to provide advice on the support instruments.
Sales markets and the institutions of the business environment of agriculture	What is the state of equipment of the farms with technical infrastructure?	Level of equipment is average. Local authorities guarantee sanitary infrastructure for the large enterprises/
	How is the sales market organised and what is the role of producer groups?	Sales market is poorly organised. Organisation of this market is one of the biggest problems. Sales are largely dependent upon the decisions on the central level.
	What are the forms of local cooperation in the domain of development of rural areas and agriculture?	Transboundary micro-projects, not linked with agriculture (now on the stage of filing of applications). Collaboration in the domain of agriculture is also planned.
Climate change	What is the level of hazards associated with climate change?	Not asked

14.04.2010 (Wednesday)

Meeting in Agro-Titel agriculture enterprise and John Deere Service and Training Centre.

Participants: *Vojislav Skenđzić* – Deputy general manager of RES trade, *Veljko Vidaković* – director of John Deere service and training centre, Professor *Nebojša Novković* – Faculty of Agriculture, University of Novi Sad, Professor *Jerzy Bański* – Institute of Geography and Spatial Organization PAS, *Maria Bednarek-Szczepańska* – Institute of Geography and Spatial Organization PAS, *Konrad Czapiewski* – Institute of Geography and Spatial Organization PAS

Titel – municipality in the southern part of Vojvodina, in the South Bačka district, located between the valleys of Tisza and Danube. The area of the municipality is 262 sq. kms. It is composed of six localities, which are altogether inhabited by 16,400 persons, of whom 1/3 are the residents of the town of Titel. Serbs account for roughly 85% of the inhabitants of this municipality.

Titel is a typical agricultural municipality (agriculture generates around 65% of the revenue in the municipality). Crop production dominates. Agricultural land constitutes approximately 80% of the area of municipality. The majority of agricultural land (70%) belongs to family farms, whose general economic condition is weak. Small and medium industrial companies (production of metal and plastic containers, and of construction materials) play some minor role in the economy of the town of Titel. The biggest agricultural enterprise in the municipality is Agro-Titel company, employing 150 persons. On 5,000 hectares mainly vegetables and cereals are cultivated, and pigs as well as dairy cattle are raised. In the town of Titel the Training and Service

Center of John Deere company, producing tractors and other farming machinery, is located.



Photograph 9. Chernozems in the vicinity of Titel

Table 16. Results of the interview in Titel

Feature	Question	Responses
Role of agriculture in regional economy	How is location of municipality influencing the development of agricultural sector?	Very convenient agro-ecological conditions and advantageous location in the confluence of Danube and Tisza (possibility of building a haven on Tisza), as well as proximity to Novi Sad and Belgrade.
	Are there current planning documents concerning the development of the municipality, including development of agriculture?	Unstable agricultural policy. Frequent changes in the strategic documents.
	Is agriculture of the municipality spatially differentiated?	The region is generally uniform in terms of agriculture.
	Is on rural areas non-agricultural activity developing and what forms of non-agricultural activity are preferred?	Food and agricultural processing ought to be developed. The company plans an investment into river transport.
	How is the role of farming in the region changing, and is farming supported on the national and regional levels? What are the instruments of support?	Frequent changes of decisions at the central level concerning support for definite directions of production, sales organisation, etc. Abrupt and unjustified changes of policy, including support instruments, exert a negative influence on agriculture.
Farms	What is the course of processes of land concentration and consolidation? What about land supply?	Demand exceeds supply of land. Quite popular is the lease of state-owned land and of the farms, whose owners are elderly farmers.
	What is the situation on the labour market within the	Due to privatisation an important group of employees left the enterprise. The enterprise

	agricultural sector?	supported financially the persons leaving the enterprise or laid off.
	What is the condition of the family farms?	Small farms barely subsist. The minimum acreage ensuring farm profitability is at about 10 hectares. It is necessary to intensify production in small farms, so as to make this production economically sound.
	What type of farms ought to develop in the region?	Agricultural enterprises and large family farms. Local networks of connections of the family farms with the enterprises ought to function. An enterprise may constitute the basis for development of smaller farms, when the latter adapt their production to the needs of the enterprise.
Agricultural production	What direction of agricultural production ought to develop in the region?	Multiple-direction production, in view of the economic risk, resulting from unstable agricultural policy. In plant production an important role ought to be played by horticulture.
	What food products should play the priority role in exports?	Standard products (cereals, soya) and processed food-and-agricultural products.
	Is bio-energy developing?	There is lack of support for the development of energy crops and processing of bio-diesel fuel. Hence, this production is entirely unprofitable.
	How is ecological farming developing?	There are no ecologically certified farms. There are only few of them in the entire Vojvodina. There is no market for ecological products.
Agricultural population	What is the character of the contemporary demographic processes in the countryside?	Pendulum migrations and job commuting – a part of population commutes to Novi Sad or Belgrade. Population outflow is relatively low. The level of education of farm holders is low. Farming is for the least educated and constitutes an alternative for those losing jobs. There is a need of professional education at the secondary level. The enterprises providing service to agriculture stimulate the flow of knowledge to private farmers (training, courses) and modernisation of farms.
	What undertakings ought to be implemented in order to improve the educational level of farmers?	
Sales markets and the institutions of the business environment of agriculture	What is the state of equipment of the farms with technical infrastructure?	There is water supply system, but no sewage system – cesspools, and polluted groundwater. No irrigation systems in small farms. Low incomes in the municipality constitute a barrier to investments into technical infrastructure.
	How is the sales market organised and what is the role of producer groups?	Lack of organised sales markets. Producer groups are weak, a part of them appear due to the need of "lobbying". "Interest groups" of exporters and importers of various products function, having often an influence on political decisions. Enterprises do not enter the producer groups.
	What are the forms of local cooperation in the domain of development of rural areas and agriculture?	An important objective of the functioning of the enterprise is to establish a network of connections with private farms. The enterprise provides service to private farms.
Climate change	What is the level of hazards associated with climate change?	Two climatic seasons. The periods of excess precipitation and the periods of drought. This brings about serious hazard for agricultural production, especially for small farms, which do not have the irrigation systems.



Photograph 10. Repairing a John Deere tractor

15.04.2010 (Thursday)

Meeting in PIK Becej agricultural enterprise and at a small family farm

Participants: *Svetlana Gagic* – Deputy director of PIK Becej enterprise – Department of Development, Investment and Quality, Professor *Nebojsa Novkovic* – Faculty of Agriculture, University of Novi Sad, Professor *Jerzy Bański* – Institute of Geography and Spatial Organization PAS, *Maria Bednarek-Szczepeńska* – Institute of Geography and Spatial Organization PAS, *Konrad Czapiewski* – Institute of Geography and Spatial Organization PAS

Becej – a municipality, located in the central part of Vojvodina, in the South Bačka district. Its area is 486 sq. kms. The municipality is composed of five localities, inhabited altogether by 39,300 persons (*Municipalities of Serbia...*, 2008), of whom more than half are inhabitants of the town of Becej. In 2002 close to half of the population were Hungarians, and 41% were Serbs. Population number in the municipality has been decreasing in recent years and the process of population ageing takes place.

Becej is a typically agricultural municipality. Agricultural land constitutes more than 87% of its area, and of this – 98% is arable land on very good soils. Agriculture clearly dominates also in the employment structure. Family farms account for 65% of agricultural land. They are mainly small farms, of subsistence character. The share of persons living off welfare benefits in the municipality is very high, which is associated with high unemployment and a high share of population in post-productive age. Petty industry (food processing) is developing, as well, in the town of Becej.

Local economy is dominated by the agricultural enterprise PIK Becej, the largest of agricultural enterprises in Vojvodina and at the same time the biggest employer in the municipality. It is dealing with crop production (carried out over the area of some 14,000 hectares, partly leased from the state), and, to a lesser extent, with animal production (mainly pig raising), as well as food processing.



Photograph 11. Sprinkler irrigation in a field in Becej

Table 17. Results of the interview in Becej

Feature	Question	Responses
Role of agriculture in regional economy	How is location of municipality influencing the development of agricultural sector?	Location is advantageous in view of very good soils – chernozems. It is also convenient with respect to the potential sales markets: 60 km from the EU boundary and 120 km from Belgrade. Good water potential. There are thermal waters.
	Are there current planning documents concerning the development of the municipality, including development of agriculture?	Municipality of Becej has a development strategy. The biggest importance for the development of the municipality has PIK Becej enterprise, employing 80% of the working population in the municipality. The company has its own development strategies with the objectives of: strengthening of own production potential, transfer of technologies to the farmers, development of cooperation with farmers (establishment of a cooperation network).
	Is agriculture of the municipality spatially differentiated?	There is no essential differentiation – field crops dominate.
	Is on rural areas non-agricultural activity developing and what forms of non-agricultural activity are preferred?	Advantageous agro-ecological conditions are conducive to the mono-functional character of the region. Tourism is based on the presence of thermal waters, but its role is rather marginal (revenue from tourism is very small). There is sports centre in Becej. A definite potential for the development of food processing industry exists there as well. PIK Becej lost more than half of the area of agricultural land after privatisation (the agricultural land belonging to the state). About half of the area of agricultural land is leased – high rent is paid for it. Subsidies are meant for farmers, not for the enterprises. Disadvantageous changes in agriculture are due to ownership problems (state ownership / private ownership / restitution) and to economic crises. It is necessary to invest continuously in new technologies, in order to stay competitive. It is also necessary to strengthen
	How is the role of farming in the region changing, and is farming supported on the national and regional levels? What are the instruments of support?	

		cooperation with small farms, in order to support their functioning.
Farms	What is the course of processes of land concentration and consolidation? What about land supply?	Land consolidation has been carried out earlier. There are no problems here with purchasing of land, which is being sold mainly by the older farm holders.
	What is the situation on the labour market within the agricultural sector?	Before transformation PIK Becej employed 2,700 persons, now 1,700. Ultimate employment is envisaged to be at around 1,300. Very high unemployment is registered in the municipality. PIK Becej does not conduct any programs of support for the jobless.
	What is the condition of the family farms?	The biggest family farms have more than 1,000 hectares, but there are only few of them. The remaining ones are small farms, doomed to subsistence, and deprived of the possibilities to invest. Small farms are not open to change, to new production directions, and their owners take a demanding stance.
	What type of farms ought to develop in the region? What direction of agricultural production ought to develop in the region?	Agricultural enterprises and family farms, forming networks of cooperation. Mainly crop production with such leading crops as maize, soybeans and vegetables. In animal production of highest importance is pig raising, followed by dairy cattle.
Agricultural production	What food products should play the priority role in exports?	Vegetables (peas, beans, paprika), processed to tinned and frozen products. This is the current specialisation of the company. The most important sales markets are Russia, followed by the domestic market. Sale of products to the EU is currently of lower significance.
	Is bio-energy developing?	PIK produces bio-gas. There are plans for further investments into production of bio-energy.
	How is ecological farming developing?	In the area of Becej there are two ecological farms, functioning in the framework of a program, financed by the Dutch.
Agricultural population	What is the character of the contemporary demographic processes in the country side? What undertakings ought to be implemented in order to improve the educational level of farmers?	Strong depopulation processes. Very high share of population in post-productive age. Young people move to large towns. Particularly low level of education of especially the older farmers. The young ones usually graduate from agricultural schools. Establishment of a secondary agricultural school is planned.
Sales markets and the institutions of the business environment of agriculture	What is the state of equipment of the farms with technical infrastructure?	There is water supply everywhere, and sewage systems encompass more than 30% of population. PIK Becej has irrigation systems on its fields. Natural gas network runs over the region.
	How is the sales market organised and what is the role of producer groups?	There are producer organisations with different power of influence. Some of them have connections to political parties. Strong producer groups usually group large farms.
	What are the forms of local cooperation in the domain of development of rural areas and agriculture?	PIK cooperates with entities from Hungary, Germany, Slovenia and Canada, and with numerous research units, related to agriculture, in Serbia.
Climate change	What is the level of hazards associated with climate change?	Well-developed irrigation system limits the hazards associated with appearance of droughts.

FUTURE PERSPECTIVES FOR VOJVODINA AGRICULTURE

In order to increase competitiveness and effectiveness of agriculture in Vojvodina, stronger horizontal and vertical integration ought to take place between various groups of agricultural producers. The connections between the farmers and the enterprises ought to have both hierarchical and cooperating character. First of all, production at the (very) small farms ought to conform to the processing profiles of and the demand from the nearest agricultural enterprises (Type 1 connection). An opportunity for the smallest farms is constituted by the maintenance of close cooperation with large food-and-agricultural processing plants. Then, moderately strong connections (Type 2) ought to appear between the agricultural enterprises and the medium and large family farms. The respective cooperation should be based, on the one hand, on the transfer of technology from the enterprises to the farmers – according to the “direct from supplier” scheme, with omission of the stage of agricultural extension service. On the other hand, larger family farms would be able to turn out high quality products, satisfying highest standards, and, jointly with the enterprises, to increase production scale, investment outlays and market-oriented offer.

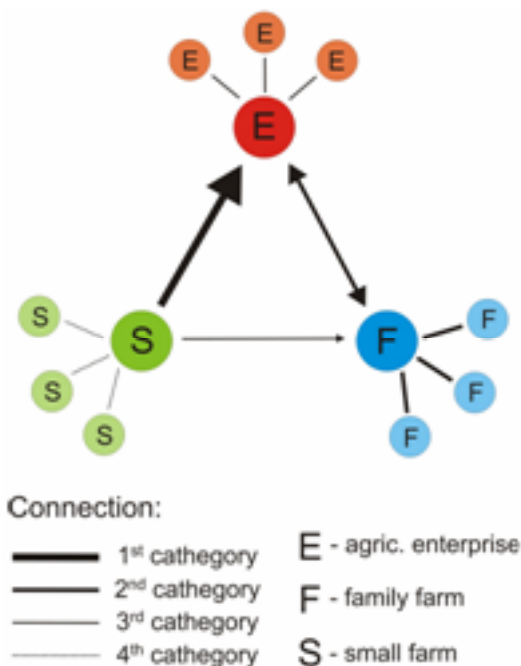


Fig. 46. Types of connections between the groups of agricultural producers

Besides, weaker (Type 3) connections are envisaged between the small and large family farms. They might consist primarily in the supply of labour during highest demand for it (seasonal work). Additionally, horizontal cooperation is a significant

factor. In this context the links between the larger family farms and especially – creation of joint producer groups – appears to be of particular importance. This would enhance a lot the investment potential of the involved farms as well as the position on the market in the negotiations with the larger customers and agricultural enterprises. Cooperation between the enterprises seems to be of lesser importance, and the one within the group of the smallest farms appears to be entirely marginal.

Fig. 47 show the scenarios of development for the three main groups of agricultural producers, depending upon the speed of the process of integration of Serbia with the European Union (horizontal axis) and depending upon the level of regulation of the agricultural policy, primarily in the domain of market intervention, income support and financing of investment making in agriculture (vertical axis). Orientation of the arrows indicates the direction of changes: upward pointing arrow – expected improvement of condition of a given group of agricultural producers, two-way arrow – stabilisation of condition, and downward pointing arrow – a drop in the condition.



Fig. 47. Scenarios of development for various groups of agricultural producers depending upon the market and policy regulations and the course of process of integration with the European Union

Agricultural enterprises

Agricultural enterprises constitute a very important composing element of the structure of entities, active in the domain of agricultural production in Vojvodina. They should play in the future a leading role in the creation of agricultural production and in

organisation of agricultural market. Agricultural enterprises shall also be the key partners for cooperation with the larger family farms and the small ones. It appears that the development of the small farms shall depend upon the condition of agricultural enterprises, which will constitute the essential contracting partners for agricultural produce, offering also service and training, and perhaps being, at times, as well, a supporting institution.

In the perspective of a dozen or so years to come, the agricultural enterprises are expected to develop, and the dynamics of this development shall depend upon the scenario adopted. The most advantageous changes can be expected under the circumstances of full competition, when the level of regulation in the domain of agricultural policy is kept at the lowest. Agricultural enterprises would then become competitive with respect to other businesses on the domestic market, and also competitive on the external market, first of all in the area of crop products. This, however, requires introduction of certain changes, leading to the improvement of economic effects (curbing of employment, improvement of sanitary conditions, introduction of modern technologies, optimisation of the irrigation systems, etc.). After these requirements are fulfilled, the agricultural enterprises shall attain a high dynamics of development, irrespective of the rate of preparations to the accession to the European Union. In case of stronger regulations on the agricultural market the development of the enterprises shall be slower, and in the extremes this may lead to their stagnation. Such a situation may result from the lower competitiveness, due to higher support for the family farms, quotas limiting the magnitude of production, or unstable (frequently changing) domestic agricultural policy, against which the smaller farming businesses are more flexible.

Larger family farms

This group encompasses the farms of more than ten, or even several tens of hectares, for which the revenue from farming constitutes the basic – or one of the basic – sources of revenue. These farms found their activity on the labour of the family members and a couple, or a dozen hired hands. In the majority of the countries of European Union this group attains the highest production effects, as being able to react relatively swiftly to the changing demand situation, and to effectively use the existing sources of support for farming.

The condition of these family farms in Vojvodina depends to the largest extent upon the adopted development scenario. These farms constitute the group that would gain the most from the accession of Serbia to the European Union, in view of various kinds of direct payments and the possibility of co-financing of the modernisation undertakings. These farms shall be also able to take advantage from the various programs, enabling improvement of the professional skills of the farm holders. The worst perspective for the larger family farms would be associated with the very slow process of accession to the European Union, coupled with full liberalisation of trade. In view of their relatively limited scale of production and partly lack of processing activities, these farms do not form any true competition for the much bigger and institutionally better organised agricultural enterprises. Besides, the larger family farms are highly vulnerable to the changing external conditions and periodical weather fluctuations.

An important challenge and an opportunity for this group of farms is constituted by the development of mutual cooperation, which might allow for lowering of various

costs, with simultaneous increase of their market potential and strengthening of the negotiation power in dealing with wholesale purchasers, including the foreign ones.

Small farms

Situation of the small farms (of up to a couple of hectares), which constitute, in terms of sheer numbers, a vast majority of agricultural producers in Vojvodina, will be difficult, as set against the background of the groups of businesses, commented upon before. One can expect a decrease or at most stabilisation of their condition.

In the case Serbia enters the European Union and the high degree of regulation of the agricultural policy is maintained, the situation of the small farms may remain relatively stable. Various forms of support for farming (direct payments, environmental payments, structural rents, etc.) shall primarily play the role of welfare payments, which will ultimately serve the persistence of the small farms. A large part of these farms will have a subsistence character, but for some part of them payments may become a stimulus for undertaking search for the possibility of cooperating with agricultural enterprises, especially in the domain of high-yield and labour-intensive production.

The situation of the small farms shall become distinctly worse in the case of strong limitation to the regulation of the agricultural policy of the European Union (assuming Serbian accession to the Union). Under lack or very low support, production shall become unprofitable. Market domination of the large agricultural producers and the inflow of cheap products onto the unprotected market would cause that the already weak competitive position of the small farms would have become even weaker. Young members of the peasant families would emigrate to large towns and abroad. With time, one could expect even the decline of the self-supply function of the small farms and their transformation into plots of recreational character, or, in case of advantageous location with respect to large towns – into construction plots.

If Serbia does not accede to the European Union and the level of regulation of the agricultural policy becomes low, one can expect a worsening of the economic situation of small farms. The existing wide gap between the highly productive agricultural enterprises and the larger family farms on the one hand, and the small, primarily subsistence farms on the other hand shall get even wider. One can expect a similar scenario for the small farms in the circumstances of highly regulated agricultural policy in Serbia and no accession to the EU. The market significance of these farms shall be marginal, but the self-supply function shall remain important. As mentioned before, a chance for improving their outlook should be sought in the cooperation with large agricultural enterprises and adaptation of production to the needs of these enterprises.

PODSTAWOWE WYZWANIA W OKRESIE PRZYGOTOWAŃ DO CZŁONKOSTWA W UNII EUROPEJSKIEJ

Serbia stara się o członkostwo w Unii Europejskiej i można założyć, że niedalekiej perspektywie rozpoczną się rozmowy negocjacyjne. Minister spraw zagranicznych Serbii Vuk Jeremić zadeklarował gotowość do takich negocjacji.

Okres przygotowań do członkostwa w Unii Europejskiej będzie odgrywał kluczową rolę dla przyszłości rolnictwa i poziomu rozwoju obszarów wiejskich Vojvodiny. W okresie przygotowań i pierwszych lat członkostwa Serbia może liczyć na dużą pomoc materialną (fundusze strukturalne i inne środki wspierające rozwój oraz poprawę spójności) oraz niematerialną w postaci doradztwa, szkoleń i innych form współpracy instytucjonalnej. Należy już teraz podjąć działania przygotowawcze, szczególnie w zakresie absorpcji środków pomocowych. Odpowiednie przygotowanie Vojvodiny pod względem planistycznym i instytucjonalnym pozwoli właściwie wykorzystać szanse jakie niesie ze sobą członkostwo w Unii Europejskiej. Aktualne działania powinny dotyczyć:

- opracowania aktualnych planów i strategii rozwoju jednostek administracyjnych ze szczególnym uwzględnieniem najważniejszych potrzeb inwestycyjnych i rozwoju wielofunkcyjnego,
- decentralizacji struktur administracyjnych i wyposażenia jednostek terytorialnych najniższego szczebla w niezbędne instrumenty prawne i finansowe, pozwalające na samodzielne prowadzenie polityki rozwoju lokalnego z wykorzystaniem środków wsparcia w ramach Common Agricultural Policy and Cohesion Policy.
- przygotowania strategii rozwoju rolnictwa i obszarów wiejskich Vojvodiny z wyraźnym określeniem kluczowych kierunków gospodarki żywnościowej i podmiotów odpowiedzialnych za ich realizację,
- przygotowania pokrycia planistycznego i zagospodarowania infrastrukturalnego obszarów pod nowe inwestycje,
- uregulowania sytuacji własnościowej gruntów,
- przygotowywania instytucji z otoczenia rolnictwa głównie pod względem obsługi rolników indywidualnych i realizacji zadań inwestycyjnych,
- profesjonalnego przygotowywania instytucji z otoczenia rolnictwa do: (1) efektywnego przeprowadzania kampanii informacyjnych o unijnych programach finansowania rolnictwa i obszarów wiejskich, (2) fachowej obsługi rolników indywidualnych w zakresie aplikowania o środki unijne, w tym opracowywania dokumentów aplikacyjnych,
- opracowania programów szkoleń i reorientacji zawodowej dla osób odchodzących lub zbędnych w rolnictwie,
- opracowania przejrzystego systemu bankowego w zakresie kredytowania inwestycji w rolnictwie,
- wsparcia na rzecz kształtowania trzeciego sektora (ułatwienia dla powstawania organizacji pozarządowych, wzmacnianie ich roli w rozwoju lokalnym np. poprzez programy współpracy organizacji z samorządami).

Aktualne plany i strategie rozwoju są niezbędnymi elementami kształtującymi społeczno-ekonomiczny rozwój regionu i jednostek lokalnych. Dokumenty te są niezbędne do realizacji nowych inwestycji. Wiedza na temat planowanych kierunków rozwoju lokalnego jest warunkiem koniecznym stawianym przez inwestorów.

Dokumenty strategiczne w zakresie rozwoju rolnictwa i obszarów wiejskich powinny określać główne kierunki gospodarki żywnościowej i warunki rozwoju wielofunkcyjnego. Rozwój wielofunkcyjny należy dostosować do lokalnych warunków. Władze Wojewody powinny przygotować dokument określający alternatywne dla rolnictwa kierunki rozwoju gospodarczego regionu uwzględniający jego zróżnicowanie oraz uwzględniający wielofunkcyjność samego rolnictwa (drobne przetwórstwo, agroturystyka, produkcja energii odnawialnej, itp.).

Bardzo istotnym działaniem w okresie przedakcesyjnym jest tworzenie lub przygotowywanie instytucji obsługujących lub wspierających rolnictwo. Szczególną rolę będą odgrywać instytucje pośredniczące w przepływie środków wsparcia do beneficjentów. Dobra organizacja tych instytucji, w tym rozwój technologii informatycznych, gwarantuje optymalne wykorzystanie napływających funduszy. Dużą wagę należy przywiązywać do organizacji bezpośredniego kontaktu z beneficjentem.

Równie istotną rolę będzie odgrywało szkolenie i doradztwo w zakresie korzystania ze środków wsparcia i przygotowywania odpowiednich dokumentów aplikacyjnych. Mogą to realizować agendy instytucji administracji regionalnej i lokalnej, szkoły lub inne instytucje z otoczenia rolnictwa. Z doświadczeń Polski wynika, że przygotowanie odpowiednich aplikacji sprawiło rolnikom pewne problemy tylko w początkowym okresie. Zdobyta wiedza i doświadczenie pozwoliły szybko dostosować się do nowych procedur.

Specjalizacja i koncentracja produkcji rolnej spowoduje konieczność redukcji osób zatrudnionych w rolnictwie. Należy stworzyć im odpowiednie warunki do znalezienia lub tworzenia nowych miejsc pracy. Zadaniu temu sprzyja system szkolenia organizowany przez lokalne szkoły o profilu zawodowym lub organizacje doradztwa rolniczego. Zmiana kwalifikacji zawodowych przyczyni się do wielofunkcyjnego rozwoju rolnictwa.

Wśród instytucji obsługujących rolnictwo bardzo ważną rolę odgrywają banki, przede wszystkim w zakresie kredytowania inwestycji. Należy bezwzględnie przygotować odpowiednie komórki bankowe do kontaktu z potencjalnymi rolnikami – inwestorami i opracować przejrzyste procedury bankowe. Niezbędnym elementem jest opracowanie systemu wsparcia finansowego zachęcającego rolników do podejmowania inwestycji.

Kwestie instytucjonalne i legislacyjne zostały wskazane w raporcie przygotowanym przez Komisję Europejską, jako najbardziej zapóźnione w procesie przygotowawczym Serbii do wstąpienia do Unii Europejskiej. W raporcie wskazano, iż Serbia jest relatywnie dobrze przygotowana w dziedzinie rolnictwa to fulfill all obligations zapisanych w specjalnym the Stabilisation and Association Agreement zawartym pomiędzy Unią Europejską a Serbią i ratyfikowanym przez Parlament Serbii 9 September 2008. Jednakże największe wysiłki w kolejnych latach powinny zostać podjęte aby pozwolić Serbia to better manage agricultural policy and to continue reforms in the sector. An appropriate legislative framework needs to be adopted and further efforts are necessary in order to strengthen the administrative

capacity in the field of food safety, veterinary and phytosanitary policy (*Serbia 2008 Progress Report*, 2008).

Wśród beneficjentów funduszy unijnych ważną rolę odgrywają podmioty społeczne: organizacje pozarządowe, stowarzyszenia, związki stowarzyszeń, fundacje itp., do których kierowanych jest szereg programów wsparcia w zakresie rozwoju lokalnego. Konieczne jest promowanie inicjatyw obywatelskich w społecznościach lokalnych, wzmocnienie trzeciego sektora oraz przygotowanie społeczeństw do budowania partnerstw, których funkcjonowanie jest silnie wspierane w ramach Common Agricultural Policy.

Wszystkie działania w okresie przedakcesyjnym powinny polegać na właściwym przygotowaniu beneficjentów instytucjonalnych i indywidualnych do absorpcji środków wspierających rozwój wsi i rolnictwa. Spełnienie tych warunków może sprawić, że Wojwodina będzie najbardziej konkurencyjnym regionem Serbii i odegra wiodącą rolę w pozyskaniu środków wsparcia na rozwój rolnictwa. Z chwilą akcesji z UE na obszar Serbii napłyną inwestycje zagraniczne, również w zakresie gospodarki żywnościowej. Wcześniejsze przygotowanie terenów inwestycyjnych i warunków „zachęcających” może przyciągnąć na obszar Wojwodiny największą liczbę inwestorów.

Członkostwo z Unią Europejską niesie ze sobą także uwolnienie rynku żywnościowego. Do Serbii napłynie tania żywność z UE, która będzie konkurowała z produktami miejscowymi. Stwarza to zagrożenie dla niektórych kierunków produkcji rolnej, która może ulec załamaniu. Należy przygotować się do takiej konkurencji poprzez opracowanie programów wsparcia dla zagrożonej produkcji, głównie w początkowym okresie członkostwa z UE.

CONCLUSIONS AND RECOMMENDATIONS FOR THE AGRICULTURE OF VOJVODINA – A SUMMARY

Table 18. Conclusions and recommendations resulting from the field study and project analyses

Feature	Conclusions and recommendations
	<p>The necessity of decentralising the agricultural policy, and giving over the decision power to regional and local self-governmental bodies. Lower level self-governmental authorities know the best the local problems and ought to be equipped with the instruments for shaping and implementation of the socio-economic policy (including agricultural policy).</p> <p>There are very limited opportunities for the development of agro-tourism on the area of Vojvodina and non-agricultural economic activation, based on it, ought not be expected. Its shall remain a marginal phenomenon on the regional scale. Too ample means should not be directed to the development of agro-tourism in places, where the chances of this development are marginal (areas with low natural attractiveness, peripheral areas).</p>
Role of agriculture in regional economy	<p>Food-and-agricultural processing industries ought to be strongly supported, as the branch with long-standing tradition in the region and perspectives for further development. Stimulation of petty entrepreneurship in the domain of food processing is desirable (e.g. cheap credits schemes for persons establishing businesses, sales guarantees, etc.). Agricultural and economic policy must be closely adapted to the local reality, which necessitates the decentralisation, mentioned above. Building of strong horizontal and vertical links in the field of agriculture and food processing necessitates competent, active and professionally educated leadership in local institutions and enterprises. Local decision-makers should have more financial instruments in order to support the desired conceptions and directions of agriculture development. It needs changes on central level. Dependence on central political short-term decisions is a great threat for sustainable local development.</p>
Farms	<p>In spatial terms, support for agriculture ought to be directed, first of all, to the areas located peripherally. The areas situated in the vicinity of Novi Sad shall "manage by themselves", making use of the location rent; here, the role of agriculture in the structure of economy shall be quickly decreasing. An increase of spatial polarisation in the region can be expected.</p> <p>A condition for the maintenance of economic profitability of agricultural production in many family farms is constituted by their cooperation with agricultural enterprises. Establishment of the local networks of producer links is postulated. Agricultural enterprises can secure the sales markets for the family farms, if the latter adapt their production to the demand of the enterprises.</p>
Agricultural production	<p>Effective mechanisms ought to be introduced of a possibly fast regulation of the land ownership issue in agricultural enterprises. Efforts should be undertaken to increase the share of processed products in export and to diversify the directions of export.</p> <p>An increase of export of fruits and vegetables to Western Europe would be justified (preceded by a well-thought-out promotional action), as a stagnation is observed in Western Europe of production of fruits and vegetables in recent years.</p> <p>On rural areas with high unemployment, support should be extended to the shift in production of large agricultural enterprises towards the more intensive one (vegetables, fruits), that would generate more jobs.</p> <p>In the long term perspective, having mind the potential accession of Serbia to the EU, a balance ought to be preserved between intensification of production</p>

Agricultural population	<p>(increase of its scale, tendency towards land consolidation) and the requirements of environmental protection. Preservation of balks between fields, in-field groves, small ponds etc. is important from the point of view of the CAP of the Community, which evolves in the direction of supporting the environmental functions of agriculture. One should expect that a flow of financing meant for agriculture shall be directed to these goals.</p> <p>A significant development of ecological farming ought not be expected over the nearest years. An increase of demand for ecological products shall be a long-term process and shall depend upon the increase of the socio-economic development level and the extent of urbanisation. Besides, as shown by the experience of the new member states of the EU, development of ecological farming is conditioned by the subsidies from the Community funds.</p> <p>Outflow of the young from the peripheral areas to towns is an unavoidable process, hard to slowdown or to stop, even in case of significant outlays into the programs of activation, technical infrastructure etc. (as witnessed by the experience of the new member states). The activation programs are, of course, desirable, but one should not expect their rapid and significant effects.</p> <p>Support ought to be extended to young farmers from the promising family farms, in order to prevent their outflow from farming. The majority of the smallest self-supplying subsistence farms have no true-to-life development chances, nor capacity to attain economic effectiveness. The alternative is to find employment in the agriculture-related businesses, in the non-agricultural sectors or in agricultural enterprises, or to migrate to a town.</p> <p>Education of farmers plays an important role in modernisation and increase of productivity of agriculture. Secondary schools with an agricultural profile, whose graduates would have modern knowledge and practical skills in managing farming businesses, should be developed and established.</p>
Sales markets and the institutions of the business environment of agriculture	<p>The role of the public institutions of agricultural extension should be strengthened, in particular – their collaboration with large private companies providing service to agriculture. Collaboration ought to concern knowledge transfer, dissemination of new technologies, counselling as to the production directions, use of the web. It would also be desirable to establish in the municipalities the hot spots with free access to the internet (e.g. by using computer rooms at local schools).</p> <p>The weak condition of many food-processing enterprises constitute barrier for agriculture development. In order to support them, system of preferential credits for them should be introduced.</p> <p>On the peripheral, border-adjacent areas local self-governmental bodies ought to be encouraged to undertake transboundary cooperation with the neighbours in the framework of the programmes financed by the European Union. There exist broad possibilities of implementing joint social and economic projects. This, however, requires knowledge and skills from the local authorities in the domain of preparation of applications etc. (training for the self-governmental staff in this domain is necessary).</p>
Climate change	<p>In connection with climate change an increase of frequency of the extreme phenomena ought to be expected, including droughts, constituting common threat to agricultural production in Vojvodina. An increase of access to migration facilities for the family farms is postulated, through, for instance, introduction of cheap credit for these purposes.</p>

REFERENCES

- Adzic S., 2008, *Strategy of enhancing of competitiveness of the agro-industrial complex of Vojvodina – controversies, limitations, solutions*, Journal of Central European Agriculture, 9:3, 483-494.
- Bański J., 2001, *Problem areas in Polish agriculture*, Geographia Polonica, 74, 1, IGiPZ PAN, Warszawa, 47-63.
- Bański J., 2004, *The development of non-agricultural economic activity in Poland's rural areas*, [in:] J. Bański (ed.), *Changing functions of rural areas in the Baltic Sea Region*, ERDN, 2, IERiGŻ, IGiPZ PAN, Warszawa, 31-43.
- Bański J., 2007, *Geografia rolnictwa Polski* (Geography of agriculture in Poland), PWE, Warszawa.
- Bański J., 2008, *Agriculture of Central Europe in the period of economic transformation*, [in:] J. Bański, M. Bednarek M. (eds.), *Contemporary changes of agriculture in East-Central Europe*, Rural Studies (Studia Obszarów Wiejskich), 15, IGiPZ PAN, PTG, Warszawa, 9-22.
- Chmielewska-Gill W., Czapla J., Dąbrowski J., Guba W., 2003, *Wspólna Polityka Rolna – zasady funkcjonowania oraz ich reforma* (Common Agricultural Policy – principles of functioning and their reform; in Polish) FAPA – Fundacja Programów Pomocy dla Rolnictwa, Warszawa.
- Commission of the European Communities, 2006, *35th Financial Report on the European Agricultural Guidance and Guarantee Fund, Guarantee section – 2005 Financial Year*, Brussels.
- Crowley C, Walsh J, Meredith D., 2008, *Irish farming at the Millennium - A Census Atlas*, National Institute for Regional and Spatial Analysis, Maynooth.
- European background of rural development*, 2006, TERESA Project Report D 1.2, Austrian Institute for Regional Studies and Spatial Planning, Vienna.
- Floriańczyk Z., 2007, *Czynniki determinujące rozwój dochodów w rolnictwie polskim w pierwszych latach akcesji do UE* (Factors determining the development of incomes in Polish agriculture in the first years of membership in the EU; in Polish) [In:] A. Stasiak (ed.), *Dylematy przestrzennego rozwoju wsi polskiej na tle Programu Rozwoju Obszarów Wiejskich 2007-2013/15*, Buletyn KPZK PAN, 234, Warszawa, 52–62.
- Ilbery B., Bowler I., 1998, *From agricultural productivism to post-productivism* [in:] B. Ilbery (ed.) *The geography of rural change*, Longman, 57-84.
- Integrated Regional Development Plan of AP Vojvodina*, Novi Sad, 2006.
- Katic B., Ovijanovic D., Kljajic N., 2009, *Rozwój obszarów wiejskich w Serbii. Zróżnicowanie regionalne i wybrane problemy* (Development of rural areas in Serbia. Regional differentiation and selected problems; in Polish), [in:] *Przemiany strukturalne wsi i rolnictwa w wybranych krajach europejskich, Program wieloletni 2005-2009*, IERiGŻ PIB, Warszawa, 111-125.
- Marsden, T. and Sonnino, R., 2008, *Rural development and the regional state: Denying multifunctional agriculture in the UK*, Journal of Rural Studies, In Press, Corrected Proof.

Rusu M., Florian V, 2003, *Rural space and rural development in Romania*, [in:] J.Bański, J.Owsiński (eds.), *Alternatives for European Rural Areas*, ERDN, 1, IERiGŻ, IGiPZ PAN, Warszawa, 39-55.

Serbia 2008 Progress Report, 2008, Commission of the European Communities, Brussels.

Sremenković I., Bošnjak D., Stemenković A., 2006, *Geographic Characteristic of Soya Production in Agricultural Areas of Vojvodina Region*, *Geographica Pannonica*, 10, 78-84.

TERESA, Policy Options for Rural Development, 2009.

The New Rural Paradigm Policies and Governance, 2006, OECD, Paris.

Tomczak F., 2009a, *Ewolucja Wspólnej Polityki Rolnej UE i strategia rozwoju rolnictwa polskiego* (*Evolution of the Common Agricultural Policy of the EU and the strategy of development of Polish agriculture*; in Polish). Program Wieloletni 125, Instytut Ekonomiki Rolnictwa i Gospodarki Żywnościowej PIB, Warszawa.

Tomczak F., 2009b, *Zmiany i reformy WPR: konsekwencje dla rolnictwa i finansowania polityki rolnej* (*Changes and reforms of the CAP: consequences for agriculture and financing of the agricultural Policy*; in Polish). Program Wieloletni 126, Instytut Ekonomiki Rolnictwa i Gospodarki Żywnościowej PIB, Warszawa.