

CHALLENGES OF INCREASING COMPETITIVENESS OF SERBIAN AGRO-INDUSTRY IN THE PROCESS OF MITIGATION OF EMERGENCY SITUATION¹

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Summary

Protection of agro-industry in emergency situations is of vital importance for economic and social development of a country. This paper is therefore created with a view of assessing the degree of resilience of economic entities within agro-industrial sector in the Autonomous Province (AP) of Vojvodina and partially in the Republic of Serbia in emergency situations, so that measures to increase their competitiveness could be undertaken. The methods adequate for social sciences were used: positive law method, logical induction and deduction, multidisciplinary approach, as well as statistical method. The research established that the economic entities mainly have their own fire rescue and procedure plans, but not emergency action plans. Special financial assets have not been allocated for that purpose either. Businessmen are not acquainted with the existence of ISO 22301:2012 standard, which may be exceptionally useful in solving this problem. The degree of resilience of economic entities in the AP of Vojvodina in emergency situations is 64.2%. It is necessary in the forthcoming period to improve the implementation of regulations, particularly in the field of emergency action plans, but also the possibilities to implement ISO 22301:2012 standard.

Key words: *agro-industry, emergencies, law, security.*

JEL: *Q10, Q54*

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Introduction

Emergencies cause a number of negative consequences for economy, affecting considerably all its sectors. Emergency situations involve disruption of normal livelihood and economic activity, destruction of property, housing and public services; breakdown of industrial, commercial and communications infrastructure; human displacement and loss of life (African Development Bank, African Development Fund, 2008). Numerous emergencies are radically changing the very basis of competitive advantage for organizations. Although competitiveness does not have a precise definition in economic theory, it can be understood as the ability to successfully face competition. In this sense, competitiveness is the ability to sell products that meet demand requirements (price, quality, quantity) and, at the same time, ensure profits over time that enable the firm to thrive (Wijnands, et al., 2015).

Doing business in any emergency is very risky for an organisation because it might have long term consequences in the case that something goes wrong (Radović, Domazet, 2016). Impossibility of regular business operations in emergencies may be expressed through the scope and range of products and services, procuring of raw materials and intermediate products, quality of production, placement and sale of goods, cost-effectiveness of business operations, amount of net working capital, human resources, technology and equipment, organization of a company, position in the market, and similar. Therefore, the consequences of emergencies are not reflected in huge material damages only, but also in decreased competitive strengths of economics entities in the market. This is why it is necessary to provide business continuity under such circumstances.

Naturally, a lot depends on the efficient implementation of positive law regulations, considering that an entire set of regulations has been adopted which govern the field of emergencies (such as the Law on Emergencies), but also the regulations which indirectly govern the issues related to the said field (Domazet, 2015). Regardless of numerous initiatives, the topic of protection of economic activities of Serbia in emergencies has not been sufficiently recognized as interdisciplinary problem the solution of which requires careful analysis and implementation of adequate measures in practice. Decision-makers have not created conditions for the expert public to get involved in solving this problem, or other interested parties for that matter, so that the consequences of inadequate response to an emergency have resulted in huge economic losses in floods that occurred in 2014 (Radović, Domazet, 2016).

One of the economic sectors which is particularly sensitive to emergencies is the sector of agro-industry. This particularly applies to the Republic of Serbia, i.e. the Autonomous Province (AP) of Vojvodina, which is a significant agricultural area.

It should emphasize at this point that there are various definitions of agro-industry, as well as different understanding of the scope of this concept. The authors take the stand that “agro-industry is the generic term applied to the industrial processing of raw materials and intermediate products derived from the agricultural sector (defined broadly to include forestry and fishing as well as crop production and animal husbandry)” (Marsden, Garzia, 1998). Agro-industry contributes to economic development in many ways. One of the most profound changes taking place in agro-food economy of developing countries is

the emergence of agro- industrial enterprises as a part of broader processes of economic development (Henson, Cranfield, 2009). The agro-food sector is defined as the subsector of agro-industry which encompasses food industry, beverages and tobacco manufacturing (Marsden, Garzia, 1998).

Potentially, agro industrialization presents valuable opportunities and benefits for Serbia, in terms of overall processes of needed industrialization and future sustainable development. Hence as the “accelerated growth of agro-industries in developing countries also poses risks in terms of equity, sustainability and inclusiveness there is a need for policies and strategies that, while promoting agro-industries, take into account issues of competitiveness, equity and inclusiveness” (Silva, Baker, 2009). In the most recent decades, developing nations have focused predominantly on economic prescriptions for ‘getting markets right’ by adjusting macroeconomic policy, privatizing state-owned enterprises and opening domestic markets to international trade in agricultural commodities and currencies (Christy et al., 2009). Economic consequences of extreme weather normally occur through losses in primary production inputs: human resources, physical capital, infrastructure, land endowments and productivity (Calzadilla et al., 2004). In emergencies the situations are more severe because “small farmers are faced with numerous obstacles in accessing all the factors that are needed for the delivery of agricultural products that comply with market requirements” (Zakic et al., 2014).

Taking into account the significance of agro-industry for the AP of Vojvodina, i.e. the entire Republic of Serbia, there comes a logical question in which way the resilience of economic entities in emergencies can be improved, in other words how business continuity in emergencies can be provided. Business continuity management represents a holistic management process which identifies potential threats for organization and influences on the operations which these threats can cause, if they occur, and which also provides a framework for building of organizational resilience capable of efficient response in order to protect the interests of key stakeholders, reputation, brand and value creation activities (Domazet, Radović, 2016).

This question is particularly important in the conditions of still current economic and financial crisis when huge efforts are made to preserve competitiveness of domestic economic entities at the international level. The problem is additionally increased by the fact that the EU countries allocate huge assets to support their own agro-industrial sector, as opposed to our country where these allocations are far lower. A typical example is the provision of state aid for the agricultural sector and rural areas awarded by the EU Member States. The allocation of state aid in the agriculture and forestry, as well as in rural areas in the EU is regulated by the European Union Guidelines for State aid in the agricultural and forestry sectors and in rural areas 2014 to 2020 (Domazet, 2015).

Taking the above said into account, this paper represents a contribution to the study of the degree of resilience of economic entities in agro-industrial sector of the AP of Vojvodina, i.e. the Republic of Serbia, in emergencies in order to improve the response to emergencies and climatic changes.

Methodology

When comprising this paper, the authors used the methodology adequate for social sciences: positive law method, logical induction and deduction, multidisciplinary approach, as well as statistical method. The aim of the positive law approach was to analyse the quality of legal solutions in the field of agroindustry resilience in emergencies and to draw attention to possible consequences which occur in practice if they are not implemented.

In addition to this method, logical methods of induction and deduction were used in the paper, considering that the aim was to derive corresponding general principles from certain solutions and consequences (inductive method). Deductive approach was also used considering that a starting fact was that the Republic of Serbia had suffered huge consequences caused by extreme weather and climatic events whose impact on agriculture was considerable. Other specific features are further derived from this rule, so that it can be said that the majority of the paper is dedicated to explanation and comprehension of the scope and logic of these rules. Therefore, in principle, the paper is dominated by the deductive method, while induction is applied in certain parts.

Finally, for better clarification of arguable questions the paper uses multidisciplinary approach, considering that economic knowledge and research which represent real basis for accepting a concept or a conclusion are particularly important for the analysis of challenges for increased competitiveness of Serbian agro-industry in the process of mitigating emergencies. This does not mean that the paper is based exclusively on economic research, but that economic research has been used to a certain extent, particularly when acceptance of alternatively offered solutions should have been defended. Economic appropriateness is used to explain acceptance or rejection of a principle or a specific solution.

The authors investigated the available literature in different fields: disaster management, agro-industry, sustainable development, sustainable agriculture, global climate change, natural disasters, state in society in general, etc. Literature was also searched from numerous libraries and through different websites.

This research was conducted in two different phases: the first one was conducted from August 2015 since the end of 2015; and the second in the first half of 2016. The characteristic methodology related to the first phase was implementation of the so-called 'desk top research', and in the next phase the field research. A part of the results has been obtained by processing the data from interviews with corresponding representatives of economic entities in the field of agro-industry in the territory of the AP of Vojvodina.

Based on the collected data it has been determined which steps should be taken in the AP of Vojvodina, i.e. the Republic of Serbia in order to prevent, mitigate, prepare and respond to the emergency impacts on agro-industry.

Results and discussion: The role of agro-industry in the mitigation of emergency impacts on society

The role of agro-industry in Serbia is rather specific in emergency management. The main responsibility of each organization is to uphold legal and normative regulations which govern this field primarily in the organization itself, but also in local community where it performs its activities. Considering that each segment of agro-industry is exceptionally significant for the security of employees and local community population, as well as for environmental protection and the entire concept of sustainable development, the role of agro-industry is immeasurable in each stage of an emergency (from the stage of readiness, prevention and response, to mitigation of consequences).

Agriculture is one of the hardest-hit sectors when natural disasters strike. Crops are leveled by winds, drowned by floods or scorched by heat and drought. Livestock perish from thirst and starvation. Lands are stripped of fertile topsoil by floods and wind storms, and salinized by seawater incursion. Seed and food stores rot under water from floods or are consumed during droughts. Loans taken to plant crops cannot be repaid. Processing and export industries cannot meet delivery obligations and lose out to competitors. Yet again, the poor are the biggest losers since they are the most dependent on agriculture for a living and have few buffer systems to cushion against these losses (Varma, Winslow, 2005). After any emergency the largest part of basic needs of the endangered population is related to provision of sufficient quantities of agro-industrial products, because of which in many documents at the level of national security it is recognized as so called “critical infrastructure”.

After an emergency (catastrophe) an organization faces the impacts on its operation if there are any disturbances in its activities, on the one hand, and the need to respond to the needs of (narrow or wider) community, on the other hand. In each of these activities the adequate response can actually strengthen the organization’s competitiveness, or the organization can lose it partially or completely if such a reaction is lacking. If an organization is prepared to respond quickly and to adapt to dynamic changes or unexpected working conditions, it shows capability to survive in turbulent times and it wins the public’s confidence. On the other hand, if it lacks sufficient skills in its activities to organize, not respecting generally accepted business ethics, it may be disgraced forever and lose its position in the market.

Agro-industry processes raw materials and intermediate products as well as the products obtained from agriculture, fishing and forestry. Due to the scope of its activities agro-industry is very vulnerable in any emergency. Partial or complete destruction of physical property in agro-industry such as processing plants, warehouses, transport facilities, access roads, buildings, disturbances in supply with raw materials or products, limited supply of energy and other, limit the possibility to mitigate consequences for both agro-industry and the economy of the entire country. Considering that the agriculture of Serbia is in considerable danger due to extreme weather conditions and evident climatic changes agro-industry is accordingly exposed to considerable risk (Radovic, 2014).

In the past many segments of agro-industry were in jeopardy in various emergencies. In catastrophic floods that affected one third of the territory of Serbia in 2014, the

consequences for the operation of many economic organizations were considerable. The greatest victims were season workers in agro-industrial sector who were left without work. Based on the field research the conclusion was drawn that due to the floods, for instance, the fruit processing factory of Krupanj expected two thirds less profit in comparison with the previous year (2013). Agro-industry can as a whole be more resilient to the existing risks if the risk reduction is primarily provided in the field of agriculture. Unfortunately, in practice so far the policy of such protection has been based on rash decisions which were not preceded by any expert analysis. The best example of such behaviour was transfer of anti-hail protection from Hydrometeorological Service of Serbia to the Sector for Emergencies of the Ministry of Interior of the Republic of Serbia. This Sector soon faced the same problems in work which it had reproached to the colleagues from the Hydrometeorological Service before that. The impossibility of the Sector to respond to the identical problems has led to the anti-hail protection being returned under the auspices of the Hydrometeorological Service, which does not mean that the problems have been solved with such a decision of the ruling structure. Farmers are in constant fear of extreme weather conditions, trying to provide adequate protection for their crops either on their own or with the help of grants (building anti-hail nets or various forms of insurance). The Provincial Secretariat for Agriculture, Water Management and Forestry allocated considerable assets for that purpose but systematic solution to the problem of anti-hail protection is missing in the Republic of Serbia and consequently in the territory of AP of Vojvodina.

Moreover, regardless of significant participation of local self-governments and some companies within public-private partnership, the situation has not improved considerably. In addition to the lack of material and financial assets, the training of the employees in the sector of agro-industry is also missing which would enable them to acquire necessary knowledge and skills in the response to mitigate the impacts of emergencies (Radović, 2012).

Results and discussion: Resilience of agro-industry in the AP of Vojvodina in emergencies as a prerequisite to preserve competitiveness

Respect of positive law regulations, as well as preventive activities in order to preserve competitiveness in emergencies are of the first-rate importance for the development of a country's economy. It can be stated that in the territory of the AP of Vojvodina, as well as in other parts of Serbia, the analysis has not been made of impact of emergencies on economic competitiveness. At the same time, the analysis was not made regarding the preparedness of economy to adequately respond to possible operation disturbances.

In this paper the results are presented following the field research carried out in the sector of agro-industry in the AP of Vojvodina in the following towns: Subotica, Sombor, Zrenjanin, Kikinda, Apatin, Novi Sad, Vršac, Vrbas, Kula, Ruma, Beočin, Crvenka, Bačka Topola, Sremska Mitrovica, Indija and Stara Pazova. The field research is based on the interviews with competent representatives of the most important economic entities in the agroindustrial sector.

As for the respect of positive law regulations governing emergencies, it has been established that economic entities have fire rescue plans and procedures.

Second, the field research shows that economic entities to the largest extent have fire rescue plans and procedures, but not the plans and procedures in emergencies. Also, special financial assets have not been allocated to these purposes.

Third, it has been determined that the representatives of economic entities are not acquainted with either the existence or the contents of ISO standard 22301:2012 – Business Continuity Management System, but at the same time it should point out that this issue belongs to the scope of activities of the Institute for Standardization of Serbia.

Fourth, it has been determined that emergencies can considerably influence the scope and range of products and services, purchase of raw materials and intermediate products, quality of production, placement and sale of goods, business cost-effectiveness, amount of net working capital, human resources, technology and equipment, organization of a company, as well as position in the market of economic entities in the field of agro-industry.

Fifth, the field research has shown that all economic entities in the field of agroindustrial sector helped local communities and population affected by emergency consequences, primarily in food products, particularly during 2014 floods. It is important to point out that help was given not only in their local communities, but it was sent to other parts of Serbia as well.

When assessing the resilience of the agro-industry of the AP of Vojvodina in emergencies a set of indicators was used which are shown in Table 1. The resilience indicators of economic entities to emergencies, the rating rationale and actual indicator ratings for each company, together with supporting evidence, justification and comments have been developed into a formal database for ease of data entry, storage and manipulation. The rating rationale was developed from specialist knowledge on Emergency Management good practice, enhanced and clarified by the experience of visiting the accident hazard sites and conducting the data collection. The scoring/rating was carried out with an experiential learning intent, by consultants, along with researchers who were present at the site visits. This dual observation and logging strategy contributed to the continuous development of transparency and accountability within the rating structure throughout the project (Larken et al., 2001).

The resilience of the agro-industry of the AP of Vojvodina was calculated based on the following formula:

$$\text{Rating for indicator (I)} = M_i \times (K_i + A_i + P_i + S_i) / (K_{\max} + A_{\max} + P_{\max} + S_{\max}),$$

where “K” is quality of a measure, “A” is harmonization of activity goals with general strategy, “P” means harmonization with the existing regulations, while “S” means preparedness to implement activities.

Scoring is based on the concept of good practice dictating that each of measures (indicators) should be addressed. They should be aligned to the company or legislative requirement and they should be of good quality. The value of measures “K”, “A”, “P” and “S” range from 1 to 4. If an indicator (I) exists, then it is assigned a value 1, and if it does not exist then its value is

0. After calculating the value for each indicator respectively, the values are added to get and arithmetic mean (Larken et al., 2001).

For instance, for Management structure (MS) indicator, using the above stated formula, we get:

$$MS = 1 \frac{(4+3+4+4)}{4+4+4+4} = 15/16 = 0.94 \times 100 = 94\%$$

Total results are shown in Table 1.

Table 1. Indicators of emergency management in enterprises in the field of agro-industry in the territory of APV

No.	Name of indicator	I	K	A	P	S	Total
1.	Management structure (MS)	1	4	3	4	4	94
2.	Application of standard ISO 22301:2012 (AS)	0	0	0	0	0	0
3.	Infrastructure and facilities (IR)	1	3	4	4	3	87
4.	Performing exercises (PE)	1	4	4	4	4	100
5.	Planning (PL)	1	2	3	4	4	81
6.	The willingness of teams to respond (TW)	1	3	4	4	3	87
7.	Emergency alerting systems (EAS)	1	3	4	4	4	93
8.	Relation with emergency services (RES)	1	4	4	4	4	100
9.	Prepare On site Emergency Plan (PEP)	0	0	0	0	0	0
10.	Review and testing of EM plans (RTP)	0	0	0	0	0	0
Total					64.2		

Source: Author's own work

Finally, the total value of agro-industry resilience in the AP Vojvodina in emergencies is calculated in the following manner = $(94+0+87+100+81+87+93+100+0)/10=64.2\%$.

Conclusion

Based on the research conducted, it can be concluded that the degree of resilience of economic entities in the field of agro-industry in the territory of the AP of Vojvodina is at relatively satisfactory level. Total resilience is somewhat over 60%, whereas the best results are noted regarding Management structure (94%), Performing exercises (100%), Emergency alerting systems (93%), as well as regarding Relation with emergency services (100%). In the second

group we have Infrastructure and facilities (87%), Planning (81%) and the Willingness of teams to respond (87%). Finally, considerably unfavourable result has been recorded regarding Prepare On site Emergency Plan, Review and testing of EM plans, as well as the Application of standard ISO 22301:2012.

Therefore, the results show that there is significant space for improving the overall conditions in this field, which by all means can be done in the nearest future.

First of all, it should considerably improve preventive measures for dealing with emergencies. This primarily refers to preparation of emergency action plans, as well as practices for the implementation of these plans. The implementation of ISO standard 22301:2012 will represent a special challenge, considering that it has not even been officially translated yet in Serbia. The problem with this standard is financial, considering that introducing a standard into business operation implies considerable costs for economic entities which in most cases they are not capable of bearing.

Although a set of regulations has been adopted in Serbia, as well as a range of sublegal documents for the purpose of harmonization with the European Union laws, it seems that challenges remain regarding the implementation of regulations in the field of agro-industry, particularly in the field of risk assessment in agro-industry, as well as adequate response to them. The problem can also be in both quality and quantity of time data which might represent a good tool in predicting extreme weather conditions. Serbia was obliged to perform a wide range of tasks in the field of agro meteorological, weather and hydrological services, but also flood and ice on rivers warnings and climate change (Radović, Keković, 2012). Taking into account that these activities are in accordance with the Law on Emergencies, it should not doubt that they will have great importance for agro-industry, considering the valuable data on unfavourable weather conditions which might affect this branch of economy and jeopardize its competitiveness. Therefore, the academic community should be more involved in the issues of improvement of emergency management in the area of agriculture protection, because the provision of the financial resources, necessary to mitigate the numerous natural and anthropogenic disasters, could be very challenging in the future (Radović, Andrejević, 2011).

Therefore, emergencies will beyond any doubt be the main challenge for competitiveness of agro-industry in the future. The lack of emergency action plans represents a serious handicap for economic entities (particularly those more important) in the field of agro-industry. Economic entities should not base their resilience to emergencies only on the qualifications of the Sector for Emergencies, or state bodies or organs of territorial autonomy or local self-governments. It is necessary to create a kind of symbiosis between businessmen and the government bodies in the field of exchange of information, offering mutual assistance and achieving a higher level of technical-technological equipment for adequate response in emergencies.

However, it should not neglect positive effects which can be seen in practice. This, primarily, refers to the structure of management of economic entities, practices in the field of protection at work and fire protection, as well as good relationship with rescue and protection services,

infrastructure and resources. What can particularly be highlighted is mutual solidarity of economic entities in the field of agro-industry. In this way it will certainly be far easier to prevent possible negative consequences for economic entities in case of emergency.

Recommendations on agriculture protection in Serbia emphasize the need for wider input and coordination even through this remains a challenge for many developed countries. In the United States of America, The United Kingdom of Great Britain, Australia, Netherlands and many other countries decision-makers devoted substantial funds to support the agriculture, and make plans which incorporate the need for monitoring and mitigation of climate change in each sector related to agricultural production (Radović et al., 2015). In this way the economic entities in the field of agro-industry can strengthen their competitive position in the market, considering ever increasing competitiveness coming from other countries. The research certainly showed that for preservation of competitive position in the relevant market only economic measures such as various forms of state aid (grants, subsidies, and similar) are not sufficient, but it is necessary to invest considerable efforts regarding improvement of economic entities' resilience to emergencies. Therefore, in Serbia, i.e. in the AP of Vojvodina, it is necessary to expand activities related to mitigation of consequences caused by emergencies, and this would be based on joint action of all participants in the process, which would enable more efficient action of local communities and economic entities.

References

1. A da Silva, C., Baker, D. (2009): *Introduction*, in- *Agro-industries for development*, ed. A da Silva, C., Baker, D., Shepherd, A., Jenane, C., Miranda da Cruz, S., The Food and Agriculture Organization of the United Nations and the United Nations Industrial Development Organization by arrangement with CAB International, Rome, Italy.
2. Agriculture and agro-industry department (2008): *Revised policy guidelines and procedures for emergency relief assistance*, African Development Bank, African development Fund (available at: <http://www.afdb.org/fileadmin/uploads/afdb/Documents/Policy-Documents/REVISED%20POLICY%20GUIDELINES%20AND%20PROCEDURES%20FOR%20EMERGENCY%20RELIEF%20ASSISTANCE%20AND%20GENERAL%20REGULATIONS%20OF%20THE%20SPECIAL%20RELIEF%20FUND.pdf>).
3. Domazet, S. (2015): *Pravna regulativa u vezi sa vanrednim situacijama u AP Vojvodini*, Poslovna ekonomija: časopis za poslovnu ekonomiju, preduzetništvo i finansije, Vol. 17, No. 2, pp. 413-432, Univerzitet Edukons, Sremska Kamenica, Srbija, (available at: http://educons.edu.rs/wp-content/uploads/2016/01/PE_dec2015_31dec.pdf).
4. Domazet, S. (2015): *Državna pomoć za upravljanje rizikom i kriznim situacijama u sektoru poljoprivrede u Evropskoj uniji*, Glasnik advokatske komore Vojvodine, Vol. 75, No. 7-8, pp. 394-406, Advokatska komora Vojvodine, Srbija (available at: <http://www.akv.org.rs/files/glasnik/Glasnik7-8-2015.pdf>).
5. Domazet, S., Radović, V. (2016): *Izazovi implementacije savremenih standarda u aktivnostima organizacija u cilju nastavka poslovanja*, Ecologica, No. 82, pp. 349-354,

- Naučno-stručno društvo za zaštitu životne sredine Ecologica, Srbija (available at: http://www.ecologica.org.rs/?page_id=311).
6. Henson, S., Cranfield, J. (2009): *Building the Political Case for Agro-industries and Agribusiness in Developing Countries*, in- *Agro-industries for development*, ed. Carlos A. da Silva, Doyle Baker, Andrew W. Shepherd, Chakib Jenane, Sergio Miranda-da-Cruz, pp. 10, The Food and Agriculture Organization of the United Nations and the United Nations Industrial Development Organization by arrangement with CAB International, Rome, Italy.
 7. Larken, J., Shannon, H., Strutt, J.E., Jones, B. (2001): *Performance indicators for the assessment of emergency preparedness in major accident hazards*, Health & Safety Executive Books, United Kingdom.
 8. Marsden, K., Garzia, M. (1998): *Agro-industrial policy reviews. Methodological guidelines*. Training Materials for Agricultural Planning, Rome, Italy.
 9. Radović, V., Domazet, S., (2016): *Konkurentnost privrede Republike Srbije u kontekstu pretnji od postojećih vanrednih situacija*, Ecologica, 2016, No. 82, pp. 211-216, Naučno-stručno društvo za zaštitu životne sredine Ecologica, Beograd, Srbija (available at: http://www.ecologica.org.rs/?page_id=311).
 10. Radović, V., Domazet, S. (2016): *Increasing organization competitiveness in emergencies avoiding unethical and irregular behavior - great dilemma in risky world?*, Zbornik radova sa konferencije-7th International Scientific conference „Contemporary Trends in Social Control of Crime“, Ohrid, Republic of Macedonia (in press).
 11. Radović, V., Pejanović, R., Marinčić, D. (2015): *Extreme weather and climatic events on agriculture as a risk of sustainable development*, Economics of Agriculture, vol. 62, no. 1, pp. 181-191, Naučno društvo agrarnih ekonomista Balkana Beograd, Institut za ekonomiku poljoprivrede, Beograd, Srbija (available at: <http://bsaae.bg.ac.rs/images/Ekonomika%20kompletna/2015/EP%20-%201%20-%202015%20-%20final.pdf>).
 12. Radovic, V. (2014): *Risks in Organic Agriculture*, in-*The Production and Management in Organic Agriculture*, Edt. Lj. Jovanović, pp. 243-264, University Educons, Sremska Kamenica, Serbia
 13. Radović V. (2012): *Response to extreme weather events in the sector of agriculture-emerging issues in the Republic of Serbia.*, Zbornik radova sa konferencije-*International Conference NewEnviro: New Approaches for Assessment and Improvement of Environmental Status in Balkan Region – Interactions between organisms and environment*, Univerzitet Educons, Sremska Kamenica, Srbija, Vol. 38, pp. 28-30.
 14. Radović, V., Keković, Z. (2012): *Improving Corporate Sectors Responses to Extreme climatic events in the Republic of Serbia*, in- *Corporate security in dynamic global environment: challenges and risks*, pp. 215-227, Institute for Corporate Security Studies - ICS, Ljubljana, Slovenia
 15. Radović, V., Andrejevic, A. (2011): *Nepoznanice o ulozi javno-privatnog partnerstva u provedu upravljanja vanrednim situacijama u Republici Srbiji*, Poslovna ekonomija, vol. 9, No. 1, pp. 365-381, Univerzitet Educons, Sremska Kamenica, Srbija (available at:

- <http://educons.edu.rs/wp-content/uploads/2016/01/Poslovna-ekonomija-20112.pdf>).
16. Calzadilla, A., Pauli, F., Roson, R. (2004): *Climate Change and Extreme Events: an Assessment of Economic Implications*, Proceedings from II International Workshop on Integrated Climate Models: An Interdisciplinary Assessment of Climate Impacts and Policies, Trieste, Italy, (available at: <http://users.ictp.it/~eee/workshops/smr1579/roson.pdf>).
 17. Christy, R., Mabaya, E., Wilson, N., Mutambatsere, E., Nomathemba, M. (2009): *Enabling Environments for Competitive Agro-industries* in- Agro-industries for development, ed. Carlos A. da Silva, Doyle Baker, Andrew W. Shepherd, Chakib Jenane, Sergio Miranda-da-Cruz, pp. 10, The Food and Agriculture Organization of the United Nations and the United Nations Industrial Development Organization by arrangement with CAB International, Rome, Italy.
 18. Varma, S., Winslow, M. (2005): *Healing Wounds: How the International Centers of the CGIAR Help Rebuild Agriculture in Countries Affected by Conflicts and Natural Disasters*, Consultative Group on International Agricultural Research (CGIAR), Washington, DC. USA.
 19. Wijnands, J. H., van Berkum S., Verhoog, D. (2015): *Measuring Competitiveness of Agro-Food Industries: The Swiss Case*, *OECD Food, Agriculture and Fisheries Papers*, No. 88, OECD Publishing, Paris, available at: <http://dx.doi.org/10.1787/5jrvvkrhtmwgen>.
 20. Zakić, N., Vukotić, S., Cvijanović, D. (2014): *Organizational models in agriculture with special reference to small farmers*, *Economic of Agriculture*, Vol. 61, No. 1, pp. 225-239, Naučno društvo agrarnih ekonomista Balkana Beograd, Institut za ekonomiku poljoprivrede, Beograd, Srbija (available at: <http://bsaae.bg.ac.rs/images/Ekonomika%20kompletna/2015/EP%20-%201%20-%202015%20-%20final.pdf>).

IZAZOVI POVEĆANJA KONKURENTNOSTI SRPSKE AGROINDUSTRIJE U PROCESU UBLAŽAVANJA VANREDNIH SITUACIJA

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Rezime

Zaštita agroindustrije u uslovima vanredne situacije je od vitalnog značaja za ekonomski i društveni razvoj zemlje. Radi toga je kreiran ovaj rad sa ciljem da oceni stepen otpornosti privrednih subjekata u sektoru agroindustrije u AP Vojvodini, i delimično u Republici Srbiji u uslovima vanredne situacije, kako bi se mogle preduzeti mere za povećanje njihove konkurentnosti. U radu je korišćena metodologija adekvatna u oblasti društvenih nauka: pozitivno-pravni metod, logički metodi indukcije i dedukcije, multidisciplinarni pristup, kao i statistički metod. Istraživanjem je utvrđeno da privredni subjekti u najvećoj meri poseduju planove za spasavanje i postupanje u slučaju požara, ali ne i planove za postupanje u vanrednim situacijama. Takođe nisu planirana posebna finansijska sredstva predviđena za te svrhe. Privrednici nisu upoznati sa postojanjem standarda ISO 22301:2012 koji im može biti izuzetno koristan u rešavanju ovog problema. Stepenn otpornosti privrednih subjekata u AP Vojvodini u uslovima vanredne situacije iznosi 64.2%. U budućem periodu neophodno je poboljšati primenu propisa, posebno na polju izrade planova za postupanje u vanrednim situacijama, ali i mogućnosti primene standarda ISO 22301:2012.

Ključne reči: *Agroindustrija, vanredne situacije, pravo, bezbednost*

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