THE ECONOMIC EFFECTS OF FARM VEHICLE-RELATED TRAFFIC ACCIDENTS – A COMPARATIVE ANALYSIS OF WESTERN AND NORTHERN SERBIAN MUNICIPALITIES

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ABSTRACT

There are numerous and diverse Serbian road users or traffic participants on a daily basis. Farm vehicles are also considered participants. In fact, from all the farm vehicles engaged in traffic, it is tractors that are involved the most in traffic accidents. In this paper, we will present valid data on tractor-related traffic accidents during the 2012-2016 period, with a focus on areas under the jurisdiction of two police administrations from different parts of Serbia - Valjevo and Subotica. By analyzing data on farmsteads and comparing traffic accidents in these areas, we pointed out the multiple negative economic effects and possible measures for their mitigating, as well as the differences between the regions of western and northern Serbia. This data, indicates that there should be more focus on the consequences resulting from these incidents as they indicate the most diverse segments of damage in the area of agriculture.

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Introduction

Criminal offenses against public traffic safety, has now become a world trend and a big problem in the 20th century. The United Nations (hereinafter: UN) and the World Health Organization (hereinafter: WHO) estimate that the importance of traffic accidents is rising and that by 2020, it will rise to third place as a cause of death on a global level. Also, WHO data shows that traffic accidents were the second leading cause of death among persons aged 15 to 29 in 2001, and the first leading cause of death among men of the same age. Youth participation in the total population in OECD countries was only

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10% in 2004, while the percentage of young drivers in the total number of those killed in road crashes amounted to as much as 27% (OECD, 2006). At the same time, traffic accidents are the leading cause of death among those between 15 and 44 (WHO, 2004). This particularly applies to traffic road accidents because they have the greatest and most severe consequences in terms of the number of casualties and the damage caused. These are the consequences that directly affect participants in traffic accidents, but also every state, due to a reduction of the gross domestic product. One of the important branches that affect the GDP in every country is agriculture. Traffic participants driving farm vehicles are on the road daily, and therefore they also take part in traffic road accidents. Drivers belong to all age categories, especially tractor drivers, and not only in Serbia but everywhere.

There are numerous studies in the world that aim to help increase road traffic safety and reduce the amount of damage resulting from these accidents whereupon farm vehicles, above all tractors, are involved. Some authors support the use of simulations to assess the ability of minors to handle tractors safely (Marlenga et al., 2017). Other authors, using the SafeDriving application, demonstrate the way a mobile electronic device can be used to monitor tractor stability (Liu et al., 2013). On the other hand, some authors are engaged in developing a computer program for the design of ROPS - the rollover protection structure (Ayers et al., 2017). Other domestic authors have also pointed out the dangers of farm vehicles, primarily tractors, as road traffic participants, noting that due to the fact that these are slow moving vehicles, there are often long lines of vehicles on the roads, causing hazardous situations due to the perilous overtaking of tractors. Furthermore, they gave some suggestions on how to improve general road safety in such situations (Marković et al., 2013). Important is their proposal that the Road Traffic Safety Law should also regulate the installing of cabs or tractor frames, which would reduce the consequences of overturned tractors. A technical inspection should regularly check the condition of the cabins or frames so that they can effectively protect drivers or passengers from injury. These proposals are in line with the aforementioned international experiences. The danger of driving a tractor at night is also recognized in research papers by domestic authors (Pešić et al., 2010), which contain the following statement, among others: "It is a very frequent occurrence that tractor trailers are loaded with a certain cargo that covers the light signaling devices at the back of the vehicle. This would be the equivalent of having no rear light signaling devices."

Bearing in mind the mentioned international data and the domestic research papers, we tried to present in a limited manner the relevant data pertaining to road traffic accident victims driving farm vehicles on the roads in Serbia in the period from 2012 to 2016, in which tractors were involved. The 5 year period is a sufficiently lengthy one, and relevant data published by official authorities was used. We paid special attention to areas that are under the jurisdiction of two police administrations from different parts of Serbia - Valjevo and Subotica. The Police Administration (hereinafter: PA) in Valjevo, covers the area of six municipalities within the territory of the Kolubara Administrative District - Valjevo, Ub, Lajkovac, Ljig, Mionica and Osečina, including to some extent

the Ibar Highway - one of the most important thoroughfares roads in the country. The area of PA Subotica includes, also six municipalities - Subotica, Ada, Bačka Topola, Mali Idoš, Kanjiža, and Senta. The same data was also analyzed compared with the official data of the PA of Valjevo and the PA of Subotica for criminal offenses against public traffic safety in the same 5 year period. The area of PA Subotica involves a border area located at the entrance of the most important international thoroughfares in Serbia, where there is a high frequency of passenger and freight traffic. The area under the jurisdiction of the PA of Subotica was of interest to us as it involves a territory with the same number of inhabitants as in the PA of Valjevo.

Based on the appropriate economic indicators, we tried to present data regarding the damage (material and non-material) resulting from road traffic accidents in these two areas. Each region has six municipalities, so data was analyzed both for municipalities individually and for the regions. Negative economic effects are indicated in the opportunity costs, which are manifested due to the injury or death of a farmstead member, but also other costs caused by the death of a farmstead member. The aim of the research and analysis is to point out the complexity of the economic damage arising from traffic accidents and the consequences for farmstead members.

This paper presents and tests certain hypotheses, pointed out the methodology of the research and the importance of the analysis for improving the road traffic safety in the mountain and plain regions, as well as the possible measures for mitigating the negative effects. In the end, we presented some conclusions that confirmed our hypotheses which are the basis of this paper. It is not known to us whether any other Serbian authors have dealt with a comprehensive analysis of the negative economic effects arising from the aforementioned types of traffic accidents that occur on the roads in the Republic of Serbia.

Literature review

Particularly worrying are the data on the harmful consequences of traffic accidents in view of global traffic statistics. When these data are taken into account, and the reality in the Republic of Serbia tallies with these catastrophic figures, the data on the level of economic and social damage gain even more significance. According to 2007 data from in Europe, there were 1,300,000 road traffic accidents that killed more than 127,000 people while more than 2.4 million were injured or otherwise disabled, and the damage amounted to between 1.5 and 2.5% of the GDP. Of the total number of all casualties, 20% were young people, aged 18 to 25. The direct and indirect costs of the casualties of road traffic accidents are estimated at approximately 2% of the European GDP (European Charter, AMS, 2009).

On the other hand, the development of transport infrastructure, and technical and technological progress contributes to increasingly intensive traffic. Consequently, the factors contributing to the occurrence of road traffic accidents and, consequently, traffic offenses, are also escalating, which implies the total offenses against road traffic safety within a given time and space. Road traffic accidents and the traffic-related death rate

are a major problem for modern civilization. To reduce the number of casualties in road traffic accidents is therefore a worldwide requirement. There is a special focus on the issue of traffic-related victims, especially in the European Union and the UN (UN, EU 2010). Thus, on March 2, 2010, the UN General Assembly unanimously adopted Resolution No. 64/255 on implementing road safety activities and proclaimed the period 2011-2020 as the Decade of Action for Road Safety targeted at road traffic casualty reduction on roads throughout the world by increasing activities on the national, regional and world level (UN, 2010), with May 11, 2011 being designated as the beginning of this action. The Decade of Traffic Safety Plan of Action is a framework for action by all member states and communities to implement road safety management around the world. This plan was also implemented by the Republic of Serbia.

Traffic participation on public roads has become an integral and inevitable part of daily life. According to some estimates, a typical driver today spends at least two hours a day in the car, which makes up almost a third of a six-hour work day (Günther, 2005). The issue of road traffic safety is not a police problem, nor is it simply a traffic issue. Traffic injuries are, above all, a public health issue, and then a social, ethical, human and economic community issue. Namely, a great number of people die and are injured in traffic, with some remaining life-long invalids. This significantly impairs human health, destroys families, as well as creating social and humanitarian problems. Finally, the huge socio-economic cost of traffic accidents is compensated by the state economy, which hinders the economic development of the community at large.

The work environment has a greater effect on the accident rate when farm vehicles, or tractors, are involved (Blower et al., 1993). Thus, in the United States, agriculture is the most risky branch of industry for the young workforce (Centers for Disease Control, 2003). Thus, it is a known fact that overturning tractors is the leading cause of death in American agriculture (NORA AgFF Sector Council, 2008). There is no general agreement on minimum age or developmental stages when it is safe for minors to drive tractors (Lee & Marlenga, 1999), and therefore, minors driving tractors prior to gaining the required developmental and cognitive abilities are at a greater risk of trauma (Schwebel & Pickett, 2012). In the member states of the European Union (EU) overturning tractors are the leading cause of death in the agricultural sector. According to a survey conducted by the European Commission of the EU Member States, 40% of serious injuries and fatal accidents occur when a tractor overturns when a rollover protection structure (ROPS) was not applied in a protecting position (Hoy, 2009). In the region of Murcia, Spain, during the 2005-2012 period, there were 44 accidents with tractors, and in three out of four incidents, ROPS was in a horizontal position (unsafe) (Martin-Gorriz et al., 2012).

In order to present this paper, it is necessary to briefly indicate the criminal offenses against the safety of public traffic envisaged in the current Criminal Code of the Republic of Serbia (hereinafter: CC). The code which is valid from 1 January 2006, regulates the matter of criminal legislation, while the criminal offenses against the safety of public traffic are set out in Chapter 26. This group includes 9 criminal offenses. Significant for this paper are: endangering public transport (Art. 289), failure to provide assistance to

a person injured in a traffic accident (Art. 296) and serious offenses against the security of public traffic (Art. 297) in which a driver driving a tractor may appear as an offender. These are the most common criminal offenses that appear in court practice.

Although motor vehicles, after pedestrians, are the most frequent traffic participants, the numerous farming vehicles are on the roads every day. The most common farm vehicles on the roads of Serbia are tractors. Official data is also indicative of the dangers of farm vehicles, particularly tractors. Thus, the Road Traffic Safety Agency of the Republic of Serbia states that in traffic accidents which involved tractors and other farm vehicles in the 2011-2015 period, 267 persons were killed, while 2,318 persons sustained grave and light injuries, which was also revealed by electronic media (Agromedia, 2018).

The research method

The research methods used in the paper are methods of analysis, synthesis, concretization, abstraction, inductive and deductive concluding. The data presented in the paper are summarized and compared, using several different criteria. There is data comparison by region, both individually and regionally. According to six municipalities in western Serbia and in northern Serbia were selected for comparative analysis due to their specific natures and characteristics. Both regions have a large urban area, one region has crop production, and the other fruit and cattle production, as the configuration of the terrain is different. The population of both regions is fairly accurate. All the above mentioned creates a relevant basis for analysis, hypothesis testing and drawing conclusions.

The Commission of the Faculty of Traffic Engineering in Belgrade has implemented the Transport Safety Strategy of the City of Valjevo for the 2016-2021 period (Off. Gazette of the city of Valjevo, 2017), which shows that there is no generally accepted methodology in Serbia for calculating the total socio-economic costs of traffic accidents. The methodologies applied in other countries are significantly different. Depending on the assessment model, the total socio-economic costs per affected person range from the following: 266,358 (Republika Srpska, 2012) to 3,652,265 €/CAS (New Zealand, 2014), or from 10,623 to 664,098 €/SIP and from 354 to 64,208 €/LIP. Bearing in mind the data from the mentioned strategy as well as data related to the time period that was the subject of the analysis for developing the Strategy in correlation with the data on the number of traffic accidents in Valjevo in the 2010-2015 period and the number of persons killed – 3,040 traffic accidents in which 1,521 persons were reportedly killed (killed or injured), there are two variants related to the total social and economic costs per victim. The total socio-economic costs for the victims in this six-year period were estimated from EUR 14.3 million (according to the methodology from Republika Srpska - Traffic Accident Costs in the Republika Srpska, Economic Institute, Banja Luka, 2012) to EUR 435 million (according to methodology from New Zealand), or as follows:

- The costs for 39 casualties were from EUR 10.4 million to 142.4 million.
- The costs for 329 seriously injured persons (SIP) were from EUR 3.5 million to 218.5 million, and

- The costs for 1,153 persons with light injuries (LIP) were from EUR 408,000 to 74 million.

Bearing in mind the indicators that could objectively refer to the Republic of Serbia, in our opinion, the data relating to the Republic of Srpska in relation to the other data referring to New Zealand are more acceptable. This means that in the further analysis for the reference value of economic costs, one casualty will be given the value of EUR 266,000 (10,400,000/39), and a person with serious bodily injuries EUR 10,600 (3,500,000/329).

The following hypotheses are tested in the paper:

The negative effects of traffic accidents which involve farm vehicles are manifested in multiple ways: loss of life, injury, economic damage of a farm vehicle, to negative economic effects on the farmstead due to the absence of a household member as a result of injury and through the costs of terminating the additional commercial activities of the farmstead.

By a comparative analysis of traffic accidents over a period of six years of the six municipalities of western and northern Serbia, the conclusion can be drawn that the number of tractor-related accidents is lower in the plains, which implies a less negative economic impact on the economy of farmsteads in these areas. The reasons are multiple, from the age structure of the tractor, the configuration of the terrain, the average age of the person driving the vehicle, etc.

The financial sector, primarily the insurance sector but also the relevant state institutions, should, through systemic solutions, give greater importance to the elimination of the negative traffic accident-related economic effects which involve farm vehicles, especially if they are driven by heads of farmsteads or family members who are engaged in work, with specific models of assistance to the families of those killed or injured in the period of economic recovery, which is often reduced to mere survival.

Data

According to the data of the Road Traffic Safety Agency of the Republic of Serbia in 2016, there were 35,971 traffic accidents, of which 14,401 had casualties with 607 people killed and 20,641 persons injured, out of which 3,363 persons received serious bodily injuries, and 17,278 light injuries. In the year 2016, 40 drivers and passengers were killed while driving tractors, and a total of 195 persons were injured by tractors: 80 seriously and 115 lightly. The following table summarizes the data for the 2012-2016 period. The columns contain data for six municipalities in western and northern Serbia. Data on the total number of traffic accidents, the total number of persons injured and killed on tractors, as well as the number of tractors, farms, number of spouses of household heads, number of other family members, as well as the number of farmsteads that carry out other commercial activities was given, so that there is a comparison of municipalities as well as regions. The data on the farmsteads were taken from the 2012 Agricultural Census of Agriculture.

Table 1. A comparative presentation of traffic accidents and farmsteads—the municipalities of western and northern Serbia 2012-2016.

	Ada	Mali Idoš	Kanjiža	Bačka Topola	Senta	Subotica	Ljig	Mionica	Osečina	Ub	Lajkovac	Valjevo
Total no. of traffic accidents with injured and casualties	132	91	155	197	188	1057	130	168	77	379	182	945
Total no. of persons injured	161	142	227	309	213	1505	194	246	91	543	262	1199
Number of persons injured on tractors	11	1	10	21	4	24	7	23	4	38	21	27
Total number of casualties	7	4	19	19	9	37	12	14	6	19	13	43
Total number of casualties on tractors	1	0	0	1	1	0	3	4	3	0	4	4
Total number of tractors	1282	711	2658	2635	1617	4945	2011	2453	1849	4223	1631	5333
Number of family farmsteads	1603	1303	2853	3378	1770	6542	3099	3432	3628	5977	2570	8755
Spouses of farmstead heads (female)	633	574	1339	1326	736	2806	1629	1843	2076	3202	1436	4471
Number of family members and relatives of farmstead heads	547	517	1238	1322	723	3118	2447	2840	3350	5164	1946	7607
Farmsteads carrying out other commercial activities	107	81	209	171	101	445	842	849	626	823	173	2024

Source: Road Traffic Safety Agency, RS, and NSSO (2012-2016).

If we compare the mentioned municipalities, we can notice that the greatest number of traffic accidents with casualties is on the territory of Subotica. If the number of injured persons is analyzed, Subotica and Valjevo had the largest number in the mentioned period, which is understandable considering the number of inhabitants.

Regarding the data collected for the municipalities of western and northern Serbia, we can note that the number of injured persons driving tractors in the 2012-2016 period in western Serbia is 55% higher, while the number of casualties is 6 times higher than in northern Serbia.

The total number of family farmsteads in the municipalities of western Serbia is 27,461, while for it is 17,449 in the northern Serbian municipalities, and when these data are compared with the total number of tractors in the six mentioned municipalities, we can draw the conclusion that there are 1.57 tractors for every one farmstead in western Serbia, and for the municipalities of northern Serbia - 1.26 tractors. We can conclude that according to the number of tractors per family farmstead, western Serbian municipalities are in the lead, which can have an impact on the number of persons injured in tractor-related accidents in comparison with the municipalities of northern Serbia, but also with the Serbian average.

In order to better understand all the economic aspects of tractor-related accidents, data on the number of female spouses as well as data on other family members on farmsteads in the municipalities listed in the previous table was analyzed. The total number of these persons for the municipalities of western Serbia was 38,011, and for the municipalities of northern Serbia - 14,879. When the data are compared with the number of family farmsteads, we can draw the conclusion that for every farmstead, there are 1.38 persons from the category of spouses of the household heads or other family members in the municipalities of western Serbia, while that number is 1.17 persons for northern Serbia. The conclusion is that municipalities in western Serbia have farmsteads and larger families. If we assume that the persons injured and killed in tractor-related accidents are working household members and often, the farmstead heads, the previous data shows that in the case of accidents in the municipalities of western Serbia, a greater number of persons living on family farmsteads can be considered vulnerable, as they are left to manage the farms.

Figure 1. Graphic representation of the number of spouses of household heads and number of family members.

Source: SORS-2012 Agricultural census

Particularly interesting is the data on the number of farmsteads that carry out other commercial activities, besides the basic one. There are 5.337 or 19.4% of such farms from the total number of farmsteads in western Serbia, and in the north only 1.114 or 6.3%. This points to the conclusion that family farmsteads in the mentioned northern municipalities are more focused on basic agricultural activities. The somewhat higher “enterprising spirit” of family farmsteads in western Serbia, manifested by a number of additional activities, can be additionally put at risk by the above-mentioned number of traffic-related accidents in this area. It is difficult to make a precise assessment of the negative economic effects on these additional activities, but they without doubt imply an disruption of activity, the inability to meet financial obligations and, of course, a lack of profit.

Discussion of results

The following table shows the data related to the indicators in the first table, that is, the percentage of persons injured and killed in tractor-related accidents in relation to the total number of persons, the indicator of the age of the tractor, and the percentage of farmsteads that carry out other activities, according to municipalities.

Table 2. Results of comparison – western and northern Serbia municipalities.

2012/2016	Valjevo	Lajkovac	Ub	Osečina	Mionica	Ljig	Subotica	Senta	Bačka Topola	Kanjiža	Mali Idoš	Ada
% of injured in tractor-related accidents compared with the total number of injured	2	8	7	3	8	4	2	2	7	4	1	7
% of casualties on tractor-related accidents compared with the total number	9	31	0	50	29	25	0	11	5	0	0	14
% of tractors older than 10 years	96.6	96.7	95.5	95.4	95.5	96.6	87.8	90.2	89	92.4	87.4	88.9
% farmsteads where other commercial activities are carried out	23.1	6.7	13.8	17.2	24.7	27.2	6.8	5.7	5.1	7.3	6.2	6.7

Source: SORS-Agricultural census, 2012.

The percentage of injured persons on tractor-related accidents in relation to the total number of injured persons is the highest in Lajkovac and Mionica - 8%, followed by the municipalities of Ada and Bačka Topola - 7%, and the fewest in the municipality of Mali Idoš - 1%. According to the Road Traffic Safety Agency in 2016, the percentage

of injured persons on tractor-related accidents (195) in relation to the total number of casualties (20,641) in the Republic of Serbia is 0.94%. According to this indicator, all the listed municipalities are far above the national average, which is also explained by the fact that the number of injured persons is augmented by injuries from urban areas, where there are much fewer farm vehicle accidents than in the analyzed municipalities.

As regards the percentage of casualties in tractor-related accidents compared to the total number of casualties, the Osečina municipality, where half of the casualties were involved in tractor-related accidents, was on the top of the list, followed by the Lajkovac municipality with 31%, Mionica 29%, and Ljig 25%. Of the analyzed municipalities in northern Serbia, a slightly higher percentage of casualties in tractor-related accidents in comparison to the total number of casualties occurred in the municipality of Ada - 14%. According to the Road Traffic Safety Agency 2016 data, the percentage of casualties in tractor-related accidents compared to the total number of casualties in the Republic of Serbia was 6.59%. The conclusion is that apart from Ub, all the analyzed municipalities of Western Serbia significantly exceeded the national average. In the north, this is valid for the municipalities of Senta and Ada. The preliminary analysis is shown in the graph below.

Figure 2. Graphical representation of the percentage of casualties on tractor-related accidents compared to the total number.

Source: Road Traffic Safety Agency 2012-2016.

The age group of the casualties according to the Road Traffic Safety Agency in the analyzed period in the municipalities of western Serbia is over 46 years old, while for northern Serbia, the average age ranges from 15 to 46, except for Senta and Bačka Topola where the casualties were mostly in the 46-64 age group.

The quality of farm vehicles and their reliability is defined by their age in Serbia. Although the market for farm vehicles in the first nine months of 2017 recorded a sales growth of around 50% compared to 2016, with the greatest increase in the tractor market, despite the purchase of new technology, the average age of tractors continues to be 25 years (www.poljoprrednik.net, 2018).

Regarding the areas of western and northern Serbia, which are the subject of this research, we have established that the percentage of tractors older than 10 years is the highest in Valjevo and the Lajkovac region, close to 97%, while in the Subotica area, as well as in the municipalities of Ada and Mali Idoš, this percentage is somewhat lower, about 89% of the total number of tractors. Thus, the analyzed municipalities of western Serbia have farmsteads with only 4% of tractors under the age of 10, while in the north this number is about 10%. The use of such old mechanization in the hilly regions certainly increases the risk of traffic accidents, but also explains the actual economic power of the average farmstead.

The percentage of farmsteads carrying out other commercial activities is the highest in the municipalities of Ljig and Mionica, and the lowest is in the municipalities of Senta and Bačka Topola. The conclusion is that the farmsteads in the analyzed municipalities of western Serbia are somewhat more enterprising compared to the north, while the analyzed municipalities in the north have a smaller percentage of older (and thus, more risky) tractors. Below is a graphical presentation.

Figure 3. Graphical representation of the percentage of tractors older than 10 years and farmsteads which carry out other commercial activities 2012-2016.

Source: Road Traffic Safety Agency 2012-2016.

In the calculation of the economic effects of tractor-related traffic accidents in the mentioned municipalities, we will use data on costs for road traffic victims, which we analyzed in the first part of this paper, which are EUR 266,000 per victim, i.e. EUR 10,600 per person with physical injuries. We can conclude that in the observed period, in the municipalities of western Serbia, 18 people died in tractor-related accidents, which corresponds to an “economic cost” of EUR 4,788,000, while for northern municipalities, this amount was EUR 798,000 for the same period. Given the fact that there is no data if all of them were household heads but assuming they were (or a majority of them), opportunity costs should be included in the calculation of the negative economic effects, which actually indicates a loss of profit due to a standstill or a reduced volume of farm business caused by traffic accidents. The opportunity cost differs according to farmstead, production volumes, whether the person involved was the only worker on the farmstead, if the tractor was used actively on the farmstead, etc. If these data were available, a more detailed economic analysis and calculation of summarized economic effects could be made, but due to lack of data, we fall short of expectations.

Conclusion and recommendations

Based on the preliminary analysis, we can conclude that tractor-related traffic accidents have multiple adverse effects, which are manifested not only in the loss of human lives and injuries, but also a series of negative economic effects pertaining to farmsteads and their members who participated in the accidents.

A comparative analysis of the data leads to the conclusion that the negative economic effects of these accidents in the 2012-2016 period were higher on the territory of the six analyzed municipalities of western Serbia, compared to the municipalities of northern Serbia according to the criteria of the number of casualties, but also the damages criteria, and the opportunity costs incurred by loss of profit due to a standstill or decrease of commercial activities. The above conclusions essentially confirm the first hypothesis of this paper, as well as other hypotheses.

The average age of the vehicle, the age of the drivers, the number of tractors, and the configuration of the terrain increase the risks of traffic accidents and the mentioned negative effects, which are somewhat lower in the municipalities of northern Serbia compared to the municipalities of western Serbia.

It is recommended that the financial sector, first and foremost the insurance sector, is to actively engage in solving this problem through systematic solutions to support the farmstead families of the victims, with the support of the competent state institutions. The fact is that there is insufficient focus on the negative economic effects caused by farm vehicle-related traffic accidents, primarily tractors, especially if they were driven by household heads or working family members. The damage, as the paper proves, is calculated in millions of Euros only in the two analyzed regions, while the figure in the territory of the Republic of Serbia is much higher.

In fact, there are no systematic, concrete models for helping the families of the casualties and those injured during the period of economic recovery. The availability of insurance

policies, better information, and wider support in difficult periods for farmsteads can be crucial for overcoming such problems, which, often due to all the negative effects mentioned, are reduced to the perils of existence and unrelenting survival.

Conflict of interests

The authors declare no conflict of interest.

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