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The Seminar

**AGRICULTURE AND RURAL DEVELOPMENT -
CHALLENGES OF TRANSITION AND
INTEGRATION PROCESSES**

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INSURANCE IN AGRICULTURE OF SERBIA AS PRECONDITION OF RISK MINIMIZATION¹

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Summary

Due to its specific nature agriculture is exposed to a number of risks, whose emergence could lead to the losses in production as well as volatility in the business. The risks can not be completely eliminated, but they can be managed and their impacts can be minimized. Insurance could have the most important role in minimization of risk. Insurance is a form of risk management used to limit potential losses. Insurance in agriculture includes crop and fruit insurance, but also insurance of livestock, domestic and wild animals, buildings and machinery, and can be applied in greenhouses, forestry and aquaculture as well.

Insurance in Serbian agriculture is undeveloped. The share of the crop insurance and the animal insurance premiums was only about 2.6% of the total non-life insurance premiums in 2011. In Serbia it has been insured only about 3% of registered farms and 8-10% of the cultivable land areas. It is common practice that governments around the world take an active role in subsidizing agricultural insurance. Since 2006 Serbian government has also introduced the subsidizing of insurance premiums in the case of animals, crops and fruits insurance (in 2006 and 2007 by 30%, while since 2007 onward by 40%). Some local governments subsidize additional 10% of premium. These incentives have not led to the increased interest of farmers to ensure their production and fixed assets.

By utilization of the desk research method it has been analyzed the general situation of agricultural insurance in Serbia, together with comparative analysis of

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the situation in Serbia with the one in the neighboring countries and EU. On the basis of the case study method for 100 family farms belonging to the municipalities of the Belgrade city, there have been analyzed the following parameters: presence of the crop and fruit insurance at the family farms, the types of risk from which the farmers usually insure their crops and fruits, the success of getting fee for damages caused by the insured events, the reasons why insurance is not present in the larger extent in Serbian agriculture and what are the possibilities for greater use of insurance as the safest form of minimization the potential risks in agriculture.

The authors have also discussed a possibility of introducing the mandatory insurance for agricultural production, as well as the participation in agricultural insurance of those stakeholders which have interest for greater use of insurance in Serbian agriculture (insurance companies, food processing companies, banks, veterinary and extension services, local government authorities etc).

Key words: *insurance, agriculture, risk, family farms, Serbia*

JEL classification: *G22*

1. Introduction

The agricultural sector is characterized by a strong exposure to risk. There are several types of risk facing agricultural producers nevertheless they are small family farms or big enterprises. The most important risks can be classified as follows (Hardaker, Huirne and Anderson 1997; USDA 1999):

- **Human or personal risks** relate to death, illness or injury of the farm operator and/or its labor force;
- **Asset risks** are those associated with theft, fire and other loss or damage of equipment, buildings and other agricultural assets used for production;
- **Production or yield risks** are often related to weather (excessive/insufficient rainfall, hail, extreme temperatures), but also include risks like plant and animal diseases;
- **Price risk** is the risk of falling output and/or rising input prices after a production decision has been taken;
- **Institutional risk** is the risk associated with changes in the policy framework (agricultural and other policies) which intervene with production and/or marketing decisions and in the end negatively affect the financial result of a farm or enterprise;
- **Financial risks** include rising cost of capital, exchange rate risk, insufficient liquidity and loss of equity.

The various risks are often interrelated. Risks of all categories have effects on the income situation of a farm household or enterprise.

Insurance is the most important form of protection against the risk, both of individual persons and economic subjects which are realized through the transfer of risk onto the insurance companies i.e. the institutionalized communities of risk. However, the insurance cannot prevent the occurrence of the economically damaging incidents. Through the insurance an indirect economic protection could be realized, so it is the main reason for existence of insurance (Sarić 2010).

The idea behind insurance is that of risk pooling. Risk pooling involves combining the risks faced by a large number of individuals who contribute through premium to a common fund which is used to cover the losses incurred by any individual in the pool (European Commission 2001).

Insurance is a form of risk management used to limit potential losses. According to the conventional definition, insurance provides **the risk transfer of loss** from one entity to another, in exchange for a premium or guaranteed, measurable loss that prevents higher or possibly irreparable loss. Agricultural insurance is a special type of property insurance applied to the farmers **in order to prevent the loss of income from agricultural activities** (Manić 2012).

2. Materials and Methods

On the basis of researching the domestic and foreign literature, by utilization of the desk research method, in the first part of the paper it has been analyzed the general situation of agricultural insurance in Serbia, along with a comparison of the situation in Serbia with the neighboring countries and EU countries as well. Using the case study method for which there have been collected data by the survey and interview from 100 family farms belonging to the municipalities of the Belgrade city, the following parameters have been analyzed: presence of the crop and fruit insurance at the family farms, the types of risk from which the farmers usually insure their crops and fruits, the success of getting fee for damages caused by the insured events, the reasons why insurance is not present in the larger extent in Serbian agriculture and what are the possibilities for greater use of insurance as the safest form of minimization the potential risks in agriculture.

3. Results and Discussion

3.1. Insurance in Agriculture of Serbia

Beginning of insurance in Serbian agriculture is associated with in 1905, when within the Ministry of National Economy it was established the Fund for the

Provision of Livestock. Then, it was also adopted a Law on the Compensation for Damages in Agricultural Production (Milivojčević 2012).¹ The Law on Economic Cooperatives, enacted in 1937, provided a formal legal regulatory framework for insurance of livestock in the pre-war Yugoslavia.

The main indicator of the level of agricultural insurance development in one country is measured by the degree of insurance coverage within certain population in this case the crops and fruits or the animal ones. Serbia has not established Register of insured farms, so assessments on insurance development degree could be only given on the basis of estimates.

As in the entire previous period since there is agricultural insurance, even today agricultural insurance in Serbia has been still underdeveloped. A very small percentage of both farms and arable land is insured (about 3% of the total number of registered farms and only 8-10% of the arable land is insured). The share of the crops' and fruits' insurance premium as well as the animals' one was around 2.6% of total non-life premiums in the 2011 (Milivojčević 2012, Erić Jović 2012).

Several data show where it is Serbia within the world. The direct insurance premiums in agriculture in the world had extremely high growth rates in recent years (from \$ 8 billion in 2005 to the estimated level of \$ 18.5 billion in 2008). Most of the premium related to USA and Canada, Asia was in the second place with about 18%, while Europe was in third place with about 17% of the total premium. In the premium structure there were dominant those related to the crops and fruits insurance (they had a share of almost 90% in 2008) (Manić 2012).

According to the World Bank data, in the premium structure for 2008 there were dominant the crops and fruits insurance participating by 90% of premium, while all other types of insurance in agriculture referred to 10% premium.

In the neighboring countries, the situation is similar as in Serbia.

There are two basic types of insurance in agriculture, which currently exist in the Serbian insurance market. Those are the following:

- 1) Insurance of crops and fruits, and
- 2) Insurance of livestock.

In the case of the **crops and fruits insurance** it is covered the loss of the crop (yield) as a result of the agricultural crop damage (destruction) from the insured risk. The standard ones and the most present coverage in the case of Serbia are the ones of the prevailing risk: the hailstorm, fire and thunderstorm, with the most emphasis on the protection of the hailstorm. There could be also added the risks of

¹ The insurance premium was charged through the tax debt of the livestock holder, while the insurance organization was administered by the municipal trials.

storms, floods, frost and insurance against loss of seed quality, loss of quantity and quality of fruit and table grapes, etc.

Table 1: Agricultural insurance in some European countries

Country	Market penetration (in %)	Risk coverage	Subsidies to insurance premiums (in %)
Austria	78	Individually	50
		Combined	50
Italy	8	Combined	54
		Combined	59-64
Cyprus	100*	Combined	50
Portugal	22	Combined	68
Poland	7	Combined	50
Russia	28	Combined	50
Spain	26	Combined	37-43
Bulgaria	52	Individually	0
		Combined	0
Greece	100*	Combined	0
Finland	90	Combined	0
Denmark	90	Combined	0
Sweden	60	Individually	0
		Combined	0

* Compulsory insurance

Source: Manić 2012

In the case of **livestock insurance** there are the basic insurance coverage against the risk of accidents and diseases, whereas the animals could be insured individually or on the floating basis. For this type of insurance in agriculture there could be additionally covered the risks of death or forced slaughtering in the pre-defined cases, as well as the risks of diseases caused by malnutrition, ingestion of foreign bodies, loss of foals and calves at birth or loss of livestock breeding ability.

In addition to the mentioned types of insurance, there could be recently found even an **insurance of the drought risk** for certain crops, as well as the **crop insurance against excess rainfall**. Although those types of insurance in agriculture are still at the very beginning, it could be generally said that at Serbian market the supply of insurance companies in the field of agricultural insurance has been constantly improved and that this type of insurance is the one with progressively more attention (Manić 2012).

Although the agricultural insurance is essentially a commercial activity, it is quite common that governments around the world take an active role in this field. Since 2006 the Serbian government has participated in subsidizing the insurance of animals, crops and fruits (in 2006 and 2007 by 30% and since 2007 by 40%). By the Regulation of insurance subsidizing for animals, crops, fruits, nurseries and young permanent plantation, the registered farmers are entitled to get reimbursement for insurance in the amount of 40% of the insurance premium tax-free if they insured mentioned agricultural purposes prescribed by the Regulation. But, even those incentives have not led to the increased interest of the farmers for insurance of their production and assets, as well as for reduction of risk.

In addition to the state subsidies, some local governments subsidize additional 10% of the insurance premium. Some estimates say that every dry year causes in Serbia the damage of about 500 million € due to the reduced yields.

3.2. Insurance of Agriculture in the Municipalities of Belgrade City

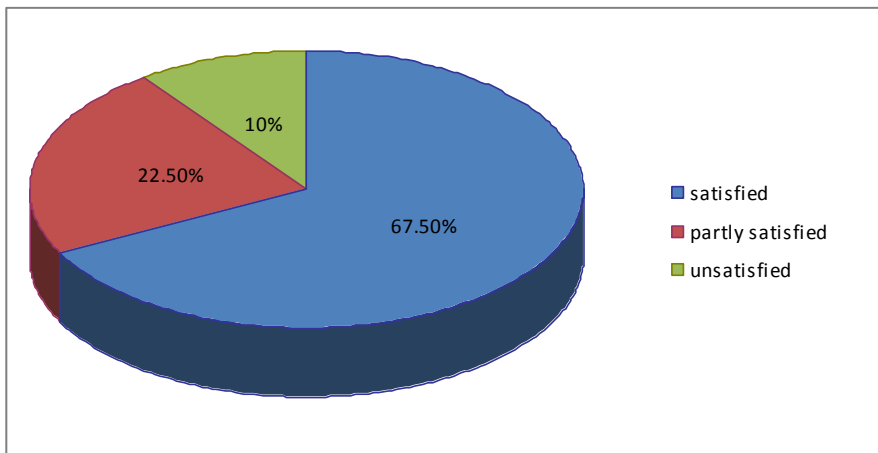
Using the case study method, there have been collected data by the survey and interview from 100 family farms belonging to the 7 municipalities of the Belgrade city (Zemun, Novi Beograd, Palilula, Grocka, Obrenovac, Sopot i Surčin) out of total number of 17 ones. According to the last agricultural census (2012) on the territory of the Belgrade City there are 33,104 family farms and the Belgrade area is the fourth area in Serbia by the number of farms. Accordingly, the analyzed sample represents 0.3% of the total family farms number on the territory of the Belgrade City. The survey collected data on capacities, structure and volume of production on the surveyed farms, the type of crop and fruit insurance, motivation for farm insurance, information and reasons why households choose or not to ensure their production or fixed assets. Data have been collected by the interview consists of 18 questions classified into three segments: data on the farm and the farm owner, data of the recent activities concerning agricultural insurance and finally the opinions about agricultural insurance.

The following parameters have been analyzed: presence of the crop and fruit insurance at the family farms, the types of risk from which the farmers usually insure their crops and fruits, the success of getting fee for damages caused by the insured events, the reasons why insurance is not present in the larger extent in Serbian agriculture and what are the possibilities for greater use of insurance as the safest form of minimization the potential risks in agriculture.

The survey has shown that in the decision-making process the interviewed farmers mostly rely on their own experience.

The farmers who are beneficiaries of insurance declared themselves about their experience so far regarding insurance, and those farmers who are not beneficiaries

of the insurance specified what is the reason for such situation. The survey showed that most insurance beneficiaries are satisfied with the service provided (Graph 1).



Source: Šević 2013.

Graph 1 Attitudes of farmers on terms of insurance

Research in the municipalities of Belgrade showed that the largest number of respondents who are not beneficiaries of crop insurance (31.7%) responded that the lack of funds is the main reason for not using insurance for agricultural purposes. An improvement of economic situation would create the possibility of a higher level of agricultural insurance utilization.

Research has also demonstrated that the amount of incentives approved by the state for reimbursement of the insurance costs does not significantly increase the number of insured family farms. The vast majority of respondents (76%) are familiar with the Regulation of the Ministry concerning the state regresses amounting to 40% of the insurance premium. However, for the owners of the surveyed farms this fact is not a decisive factor when make decision for insurance usage.

Analysis of the attitudes of the farm holders denies the claim that lack of information is a major cause of non-utilization of agricultural insurance, as well as that the farm size is a limiting factor as well. Taking in account the state of machinery, the ability of the labor force and the will to improve production, it could be come to the conclusion that the potential for development of agricultural insurance certainly exists, particularly in the region of the Belgrade City region.

Long experience of the agricultural insurance users can be characterized as the positive one, as it can be seen from the fact that those farmers have used insurance for several years as a form of economic protection and that they trust the insurance

companies. As a partial cause of dissatisfaction with insurance companies, the farmers stated the reason of inadequate assessment of damage, but they think at the same time it is not unsolvable problem, nor of such intensity to be the reason for the suspension of insurance utilization.

Previous analysis leads to the conclusion that development of agricultural insurance in Serbia needs a new platform on the basis of which farmers should be adequately stimulated towards securing their own production and assets. It is necessary to create the long-term solutions that would include stable portfolio (with the diversification of risk), an appropriate system of subsidies (at an acceptable level for all stakeholders), the products tailored to the needs of the insured farmers (with the required levels of coverage), as well as the programs which should increase awareness of the risks in agriculture and improve the availability of this type of insurance.

Insurance companies should offer to the market a suitable product in terms of comprehensiveness (coverage of more risks), with clear and as simple as possible definition of the insurance conditions and taxes, as well as easier access to the potential insurance users, which will be of unequivocal benefit for everyone (including farmers, the public sector and the insurance industry). Following the example of developed world markets, the second part of the activities should be undertaken by the state through appropriate system of subsidies, the models of public-private partnerships and the adoption of appropriate laws and regulations in this area. Common commitment should be present in the raising of awareness through intensive training of potential clients on existence of the risk in agriculture, as well as on importance of insurance in the protection and promotion of agricultural production. In time to come, just establishment of quality cooperation between the insurance industry and the public sector to improve the situation that is currently present in the Republic of Serbia will be crucial for the utilization of development opportunities that do exist in this very important area.

Besides the preservation of the living standards of the insured farmers, the insurance performs its function even by investing insurance funds through the financial organizations. By payment of compensation to the insured farmers when it happens the damage which is insured event, it has been enabled the stable production and improvement of living standards of farmers' households. By investment of the free financial funds cumulated by insurance into the economy flows (through financial institutions), it has been enabled an increase of the entire society standard of living. In stable economic conditions, insurance creates conditions for the improvement of living standards, not only of the individuals (insured farmers), but also of the whole society.

In the future, it should be considered the possibility of introducing legal obligation for insurance of agricultural production, with the participation of the following

subjects: the insurance companies and state (by different forms of subsidies and by financing the infrastructural investment projects that reduce risk for farmers), the manufacturing industry (by participation in insurance premiums in order to ensure safe and continuous provision of raw material), the banks (which could use the insurance policy as collaterals), the veterinary and extension services, and finally the local communal governments.

4. Conclusions

Every modern and profitable agricultural production is inconceivable without the insurance of crops, fruits and animals. Insurance costs are relatively small compared to the value of production that can be lost as well as the increasing risks posed by climate changes. In one day, water, fire, disease, or other plague can wipe out a months-long, sometimes years-long efforts of farmers. Despite this fact, insurance in agriculture is not represented in Serbian agriculture at the level it should be, and many farmers remember it only when it's too late.

It is believed that the insurance covers only 70% of the legal entities in agricultural production and a negligible number of the family farms. Due to rapid changes in ownership structure, renewing the insurance of the areas under crops depends on the new owner to this form of assets' protection. They often try to eliminate unnecessary costs, dropping insurance, without taking into account the fact that the biggest expense appears when the invested money has been lost. Alignment with European standards of work and business in agriculture will increasingly highlight the importance of insurance in this high-risk activities such as agriculture. On the other hand, it is on the insurance companies to offer to the producers as much adequate as possible insurance conditions for agricultural production and property. It has to be noted that it is very important competition in the insurance market, because with appearance of new insurance companies in our country (some of which have already tested and great experience on a global level), the supply of services will be improved and become more accessible to users.

One of the most important aspects of raising the level of insured agricultural land and thus reduce the impact and negative consequences for farmers but also for the whole economy of the country, is introduction of compulsory insurance in agriculture. Such a possibility should be analyzed and there should be weighted the *pro* and *contra* attitudes for introduction of compulsory insurance in Serbian agriculture. It should be considered the realistic possibility of introducing compulsory insurance obligation for agricultural production and assets.

As opposed to the crop production where there are ensured the products or annual yields, in livestock production they are ensured the whole animals but not their products. Beside the basic risk in animal insurance, animal death or emergency

slaughter due to illness or accident, there is a possibility of concluding the insurance of many additional risks (loss of breeding ability, loss of a calf or foal, castration or ovariectomy, as well as additional insurance of animals in exhibitions and fairs, in intermediate plants or slaughterhouses depots, etc.). It is not necessary to explain the importance of compulsory insurance in livestock production, due to the increasing risks of disease and natural factors.

Given the fact that the bad weather events are becoming more frequent and more dangerous for crops, animals and machinery, in addition to the subsidies supplied by the state, the insurance will represent the most important form of the agricultural production protection and prevention from the risks, both the primary and supplementary ones.

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