

Insurance as an Instrument of Agricultural Risk Management in the Republic of Srpska (Bosnia and Herzegovina)

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Abstract

Agricultural production in the Republic of Srpska is faced with numerous risks. However, little attention has been paid in the past, to the surveys of the agricultural risk management and insurance. After the general overview of basic risk types and risk management instruments in agriculture, the second part of the paper presents results on significance and acceptance of insurance services in the Republic of Srpska covering a five-year period (2010-2014). Based on the survey results, the authors conclude that although 88% of insurance companies do offer insurance products to farmers and 15% of farmers use the insurance products to manage their risks, this market segment is insignificant compared to the overall insurance market. In conclusion, the authors try to indicate the ways of stronger cohesion between farmers, insurance companies and government which would contribute to the establishment of integrated and sustainable risk management system in the agriculture of the Republic of Srpska.

Key words: agriculture, risks, insurance, farmers, the Republic of Srpska

Introduction

The agricultural sector is characterized by a strong exposure to risk that is likely to increase. Risks in agriculture usually include: production or yield risk (occurs because agriculture is affected by many uncontrollable events that are often related to weather); price or market risk (reflects risks associated with changes in the price of output or of inputs that may occur after the commitment to production has begun); institutional risk (results from changes in policies and regulations that affect agriculture); human or personal risks (relate to death, illness or injury of the farm operator and/or its labor force); financial risks (include rising cost of capital, exchange rate risk, insufficient liquidity and loss of equity) and asset risks (associated with theft, fire and other loss or damage of equipment, buildings and other agricultural assets used for production) (USDA, 1999; European Commission, 2001).

Price risk is likely to rise because of agricultural trade liberalization while production risk is expected to increase due to rising quality requirements for some products and stricter rules with regards to the use of inputs and medicines for animals (Meuwissen, Huirne and Hardaker, 1999). In agriculture, not only individual farmers are exposed to risks but also other participants in the chain of supply.

Risk management in agricultural production is based on the optimal combination of technical and financial instruments (Mahul and Stutley, 2010). According to Mahul and Stutley (2010), the most significant technical risk management instruments include: orientation to products with low risk exposure, irrigation and drainage systems, crop rotation, preventive measures of animal health protection and chemical protection of plants (usage of pesticides and herbicides), while insurance represents an important financial instrument in agricultural risk management.

Based on that, the risk management tools available to farmers include different strategies such as (European Commission, 2001): on-farm strategies concerning farm management that include: selecting products with low risk exposure (e.g. products benefiting from public intervention), choosing products with short production cycles, maintaining sufficient liquidity or diversifying production programs; risk-sharing strategies including insurance, marketing and production contracts, vertical integration, hedging on futures markets, participation in mutual funds; diversification through increasing the share of income from sources outside agriculture and emergency or disaster aids, which are paid in order to help citizens, including farmers, to cope with losses from non-insured natural catastrophes.

The adopted risk management strategy will differ according to the relationship between the various risks faced, the costs of the various instruments, farmer's income and wealth (his capacity to bear risk) as well as his risk perception (Meuwissen, 2000). When the markets for the risk management tools are incomplete or missing, a public intervention can be justified (European Commission, 2001). Public sector has a critical role in terms of mitigation of agricultural producers risk exposure, as well as the compensation of incurred losses caused by risks (perils) common to agriculture. The public sector measures referring to the risk management in agriculture may include: the establishment of a legal framework for risk reduction; providing the information and education regarding the risks and risk management instruments in agriculture; subsidizing insurance premiums and financial support in covering the losses caused by the risks.

Agricultural sector in the Republic Srpska is also facing the production, price, institutional and financial risks. The significance of insurance as a risk management tool in agriculture is evident considering the exposure of the Republic Srpska's agriculture to the: frequent adverse weather conditions (drought, hail, flood); climate changes (as a key challenge for the sector in the future according to World Bank (2010) forecasts¹; price liberalization of input and output and opening the domestic market to more competitive markets; changes in policies and regulations affecting the agriculture; increase in capital costs and insufficient liquidity of agricultural producers.

Recognizing the importance of insurance as an instrument of the risk management in agriculture, the aim of this paper has been to identify: (1) if there is any insurance market and/or demand for the agricultural insurance products in the Republic of Srpska; (2) to which extent the insurance is actually being used as a risk management tool in the Republic of Srpska; (3) what are the problems in distribution and usage of agricultural insurance products; and (4) how the insurance could become an active risk management tool in the Republic of Srpska's agriculture?

Materials and Methods

In order to identify the existence of any insurance market in the Republic of Srpska, to which extent insurance products have been used by farmers, what the problems are in providing insurance services to them and which measures are needed in order to induce insurance as an active risk management tool, authors have organized the survey on both the insurance companies and farmers.

¹ These forecasts, covering the period 2014-2060, predict that the temperature will in average increase for 3°C while the precipitation will decrease by 50 to 100 mm or for 10% in Bosnia and Herzegovina.

The survey has been conducted through two different types of questionnaires, specifically designed for insurance companies and farmers. The questionnaire designed for insurance sector included questions intended to determine if they actually offer the insurance products to farmers, what kind of insurance products they sell and how this market segment has affected (if it has) their financial position in a five-year period (2010-2014). On the other hand, the questionnaire for farmers included the questions that enabled the authors to determine: types of farmers included in the survey; whether they have used the agricultural insurance over the last five years; which biological assets have been insured and against which risks; whether they have suffered damages in the last three years and what has caused them; how these events have affected their yields and income; whether the insurance companies have covered their losses; what are the reasons why farmers do not use insurance to a larger extent and what, in their opinion, could be done to reduce their risk exposures.

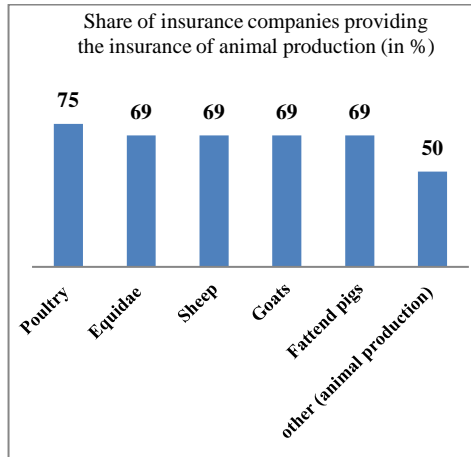
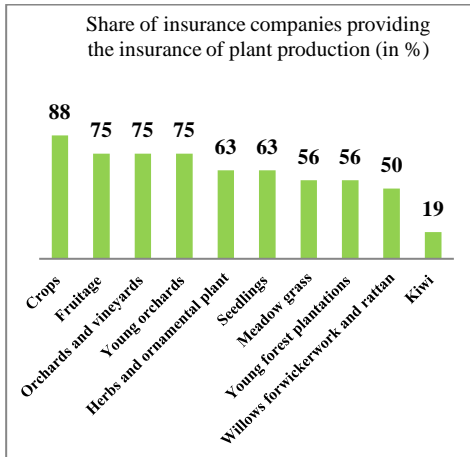
The first survey covered the whole insurance sector in the Republic of Srpska (16 companies), while the second survey included 152 farmers, randomly selected, from all 6 regions of the Republic of Srpska² (Banja Luka, Prijedor, Doboј, Bijeljina, East Sarajevo and Trebinje). Besides the data collected from surveys and conducted among insurance companies and farmers (primary sources), the authors have used secondary sources, i.e. the data published by the Insurance Agency and the Ministry of Agriculture, Forestry and Water Management of the Republic of Srpska referring to the budgetary expenditures for insurance subsidies.

Results and Discussion

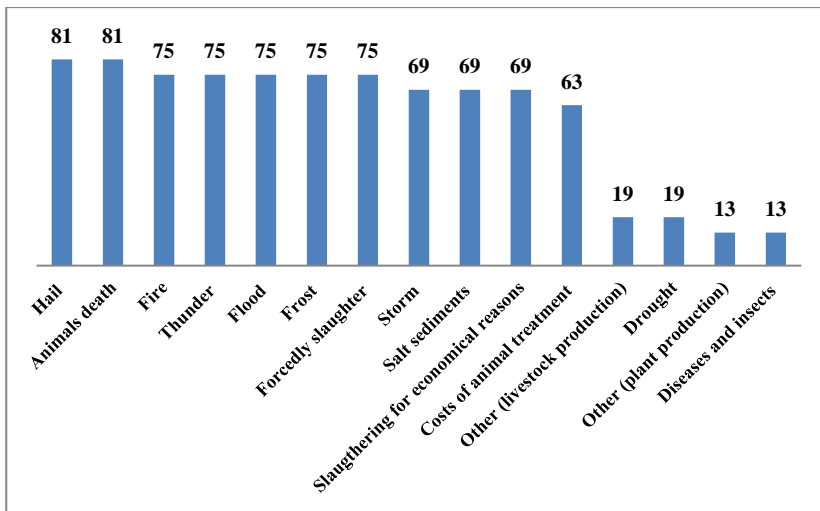
The questionnaires collected from the insurance companies showed that 88% of insurance companies officially offer agricultural insurance products. However, only one company had special division/offices responsible for providing services to farmers. Insurance companies offer the insurance of different types of biological assets by taking into account specific risks/perils which could cause damages and losses in expected yields (Graph 1 and 2).

Most of insurance companies insure: crops, fruitage, orchards and vineyards, poultry, sheep, goats, Equidae sp. and fattened pigs. On the other hand, most of them provide insurance of biological assets against hail and animal death, fire, thunder, flood, frost, forced slaughtering, storm, salt sediments and slaughtering for economic reasons.

² A division of the Republic of Srpska by regions according to the Spatial Plan effective by 2025.



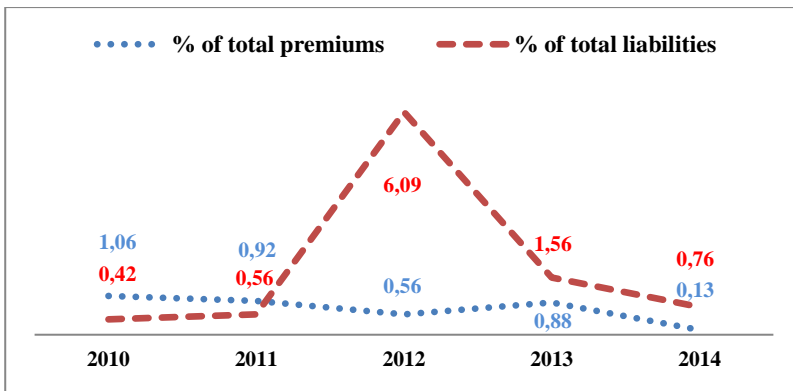
Graph 1. Share of insurance companies providing the insurance of biological assets during the period 2010-2014
Учешиће осигуравајућих друштава у осигурању биолошких добара током периода 2010-2014



Graph 2. Share of insurance companies covering certain risks/perils during the period 2010-2014
Учешиће осигуравајућих друштава који покривају одређене ризике/опасности током периода 2010-2014

Considering the total number of insurance policies sold to farmers, from 2010 to 2014, this number ranged between 152 and 188 (or between 0.02% and 0.15% of a total number of insurance policies sold).

Total insurance premiums collected from farmers approximately amounted to 421000 Euro p.a. or 0.71% of total insurance premium. Total amount of indemnities paid to the farmers amounted to 257500 Euro p.a. in average or 1.88% of total indemnities paid. All the above mentioned facts prove that agricultural market takes an insignificant part of total insurance market in the Republic of Srpska. It is quite interesting to see the relationship between insurance premiums and indemnities paid in relative terms during the five-year period (Graph 3). It clearly shows that the indemnities paid were mainly higher and fluctuated more during the period in comparison to the premiums collected, indicating the risky nature of farmers as insurance clients.



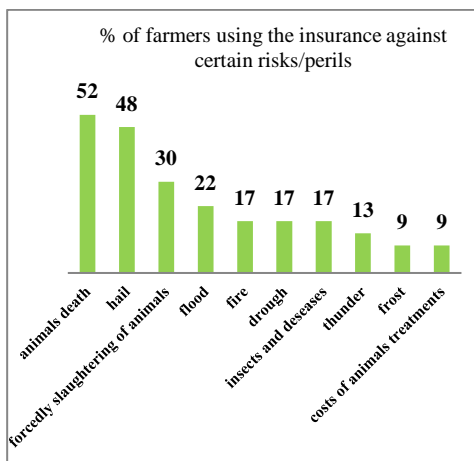
Graph. 3. Relation between insurance premiums collected and indemnities paid during the period 2010-2014
Однос између прикупљених премија осигурања и наплаћених обештећења током периода 2010-2014

One part of questionnaire, created for insurance companies, included questions such as: why, in their opinion, farmers do not use insurance services to a larger extent, or what is necessary to do in order to intensify the demand for the insurance services in agriculture. The majority of insurance companies responded that, in their opinion, main obstacles to a wider usage of insurance services by agricultural producers is the lack of information and education of farmers about these issues, the high insurance premiums and inadequate government support through regulatory framework and support to farmers in form of insurance premium subsidies. In order to overcome these obstacles and increase the interest of farmers in using insurance services, according to them, it is necessary to raise awareness of the importance of insurance, educate farmers/users and intensify insurance subsidies measure.

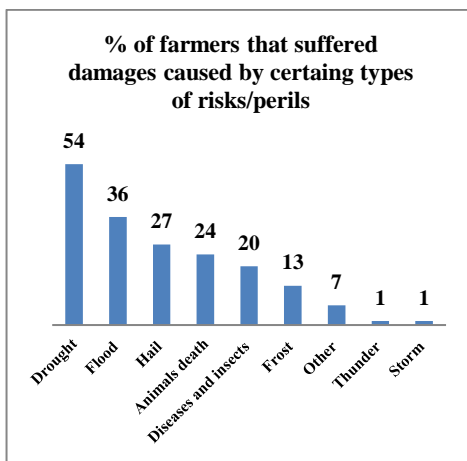
Since 2010, Ministry of Agriculture has introduced the measure of subsidizing the insurance premiums for vegetable production, orchards and vineyards and livestock production.

In relation to total agricultural budget, the proportion of budgetary expenditure for subsidizing the insurance premiums amounted to only 0.12% in 2010; 0.14% in 2011 and 0.36% in 2012. In 2011, only 30 farmers used the possibility of co-financing 50% of insurance premiums from agricultural budget. Therefore, small share of budgetary expenditures for subsidizing the insurance premiums in total agricultural budget of the Republic of Srpska resulted from a lack of farmers' interest in agricultural insurance. But, the primary reason for not using insurance as a risk management tool lies in low income in agriculture. Due to low and insufficient income, farmers are not able to pay for high insurance premiums. On the other hand, insurance companies, taking into account the high exposure of the agricultural sector to risks, are reluctant to offer this type of insurance products (Mrdalj, 2014).

The questionnaires collected from farmers showed that 15% of the interviewed farmers have used the agricultural insurance in the last 5 years. Assets being insured included mostly animals, harvest, crops, orchards and vineyards, while perils, covered by insurance, usually included: animal death, forced slaughtering, hail, flood, fire and drought (Graph 4 shows against which risks they have used the insurance).



Graph. 4. The share of farmers that used the insurance against certain risks/perils
Учешиће пољопривредника који су користили осурање од ризика или опасности



Graph. 5. The share of farmers who suffered losses caused by most common perils
Учешиће пољопривредника који су претрпели штете од најчешћих опасности

In average, 86.18% of examinees suffered damages over the last 3 years that caused the losses of approximately 46.69% of expected yields. Graph 5 shows most common perils (risks) that have caused damages to the farmers over the last three years.

The reasons why farmers do not use insurance to a larger extent, according to their answers, are: distrust towards insurance companies (59%); insurance premiums are too high (45%); lack of information about the conditions of insurance and premium rates (34%); they rely more on the Government's aid (31%) and they are not able to estimate risks – probability of losses and their impact (22%) resulting in low risk awareness meaning that the risk of low probability and high impact (damages) are not worth insuring. In examinees' opinion most useful solutions for their risk exposures would be: more intensive insurance with lower insurance costs (34%); investments in irrigation and drainage infrastructure (26%) and anti-hail protection (18%); insurance subsidies (24%) and providing education and information (11%).

Conclusion

As it is case around the world, agricultural sector in the Republic Srpska is also facing numerous agricultural risks. Considering the exposure of the Republic Srpska's agriculture to the risks of frequent adverse weather conditions and climate changes; price liberalization and opening of the domestic market; changes in policies and regulations affecting the agriculture; increase in capital costs and insufficient liquidity of agricultural producers, it is obvious that the insurance should be taken into serious consideration as an active risk management tool in agriculture.

Based on the survey results, the authors conclude that although insurance companies (88% of them) do offer insurance products to farmers and some of farmers (15% of them) use the insurance products to manage their risks, this market segment is insignificant compared to the overall insurance market (the number of insurance policies sold to farmers ranged between 0.02% to 0.15% of total number of insurance policies sold during the five-year period).

The supply and the demand for agricultural insurance products in the Republic of Srpska face the following obstacles: (1) information asymmetry – meaning that the buyer of insurance and the insurance company may not have the same information with regards to the probability of losses occurring; (2) systemic character of agricultural risks – indicating that many agricultural risks are dependent and therefore result in many people making a claim at the same time with the effect that the premiums paid into a pool are not sufficient to cover the loss incurred, which may threaten the solvency of the insurance pool;

(3) small number of farmers as insurance users – meaning that the law of large numbers cannot be used to provide an accurate prediction of average future losses and the calculation of the premium; (4) insurance is an additional burden to limited budgets of farmers – farmers in the Republic of Srpska have a problem to provide enough working capital for their production and if insurance premiums are too high (which is the case), they are not able to afford it; and (5) low awareness of risk exposure and significance of risk management – farmers are not well informed and educated regarding the risk assessment and the usage of risk management strategies in agriculture.

In the Republic of Srpska, the future market (for reducing price risks) is missing while the insurance market is obviously incomplete indicating that public intervention can be justified and needed. As suggested by both sides – insurance companies and farmers - the Government of the Republic of Srpska should assume a more active role through: (1) reducing systemic risks – through the investments in irrigation and drainage infrastructure and anti-hail protection, education of farmers and providing legal support for farmers in their legal affairs with insurance companies; (2) providing subsidies for insurance premiums; (3) establishment of long-term databases for weather conditions; and (4) providing adequate legal framework encouraging risk management in agriculture and reducing farmers' risk exposure.

Finally, one should definitely keep in mind that none of the agricultural insurance models have been created overnight. It takes a lot of effort and will, ups and downs, learning on mistakes, to build a sustainable insurance model that would be acceptable and useful to all the actors by taking into account all the specificities of an economic environment.

References

- European Commission (2001). *Risk Management Tools for EU Agriculture - with a special focus on agriculture*. Retrieved in August 2016, from: http://ec.europa.eu/agriculture/publi/insurance/text_en.pdf
- Mahul, O. and Stutley, J.C. (2010). *Government Support to Agricultural Insurance, Challenges and Options for Developing Countries*. Washington D.C.: The World Bank.
- Meuwissen, M.P.M. (2000). *Insurance as a risk management tool for European Agriculture* (PhD Thesis). Wageningen University. Retrieved in August 2016, from: <http://edepot.wur.nl/138715>
- Meuwissen, M.P.M., Huirne B.M. and Hardaker J.B. (1999). *Income Insurance in European Agriculture. European Economy No 2*. Luxembourg: Office for Official Publications of the European Communities.

- Mrdalj, V. (2014). *Possibilities for development of agricultural sector of the Republic of Srpska in accordance with principles of EU Common Agricultural Policy*. Faculty of Agriculture, University of Banja Luka.
- OECD. (2011). *Risk Management in Agriculture: What Role for Governments?* Retrieved in August 2016, from: <https://www.oecd.org/agriculture/agricultural-policies/49003833.pdf>
- Skees, J.R. and Barnett, B.J. (1999). *Conceptual and Practical Considerations for Sharing Catastrophic/Systemic Risks. Review of Agricultural Economics*. Retrieved in August 2016, from: https://www.empiwifo.uni-freiburg.de/lehre-teaching-1/summer-term-09/materials-seminar-in-risk-management/systemicrisks_skees.pdf
- USDA, Economic Research Service. (1999). *Managing Risk in Farming: Concepts, Research, and Analysis*. Washington, D.C.: USDA. Retrieved from: <http://www.ers.usda.gov/media/1761672/aer774.pdf>.
- World Bank (2010). *Studija o politici poljoprivrednog sektora u Bosni i Hercegovini, Studija o politikama trgovine i integracije*. World Bank, Jedinica za smanjivanje siromaštva i ekonomsko upravljanje, Region Evrope i srednje Azije.

Осигурање као инструмент управљања ризицима у пољопривреди Републике Српске (Босне и Херцеговине)

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Сажетак

Пољопривредна производња у Републици Српској се суочава са многим ризицима. Међутим, до сада се мало пажње обраћало истраживањима о управљању ризицима и осигурању у пољопривреди. У првом дијелу овог рада, аутори дају преглед врста ризика и инструмената за управљање ризицима у пољопривреди, као и основних карактеристика и улоге коју има осигурање, као специфичан финансијски инструмент за смањење изложености пољопривредника ризицима. На основу прикупљених података од осигуравајућих друштава и пољопривредних газдинстава путем упитника, у другом дијелу рада су представљени резултати о значају и прихваћености услуга осигурања у Републици Српској, у петогодишњем периоду (2010 – 2014). У закључку, аутори указују на начине који би могли довести до веће кохезије између пољопривредних газдинстава, осигуравајућих друштава и државе, а која би могла допринијети успостављању цјеловитог и одрживог система управљања ризицима у пољопривреди Републике Српске.

Кључне ријечи: пољопривреда, ризици, осигурање, пољопривредници, Република Српска

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