

Agricultural Insurance as Risk Management Strategy: An overview of Agricultural Insurance Schemes in Europe and the World

1. Summary

The floods that have affected Bosnia and Herzegovina in May 2014 had a devastating impact. Agricultural sector was the hardest hit. According to the assessments of the international and local experts, the floods have either partially or completely destroyed agricultural holdings in 30 municipalities in Republika Srpska, and in 22 municipalities in the Federation of BiH, whereas the number of destroyed farms amounted to 2,500.¹ Other losses, related to agro-machinery and equipment, can hardly be estimated. This represents a major blow to already modest production capacities of agricultural sector in Bosnia and Herzegovina. It leaves no doubt that the agriculture, as a sector, will experience stagnation, and that agricultural production will, in the long-term period, continue to feel the effects of this natural disaster.

Consequently, agricultural producers in Bosnia and Herzegovina will need to redirect their savings (if any) into recovery or take loans from private banks, their family, friends, and relatives in order to address the damages they suffered. For many of them, May 2014 floods may result in a long and uncertain survival battle, while some of them will, most certainly, be pushed below the poverty line.

The existing capacities and financial potential of the State of Bosnia and Herzegovina, do not allow it to provide any significant aid to help the farmers restore their lost properties and re-launch their production processes. Without additional aid from international community, the agricultural sector will struggle on its path to recovery. All this indicates the need to employ systemic approach to the issue of risk management in agriculture, and to develop responses to similar situations. Actually, similar situations have occurred before. In one of its publications, issued in August 2012² Foreign Policy Initiative of BiH has voiced its concern, indicating the gaps within the existing disaster management system. One of the recommendations presented in the publication was to emphasise the importance of having in place agricultural insurance as one of the mechanisms for mitigation of the devastating effects of natural disasters. This analysis was presented to governmental and the NGO sector representatives, relevant international stakeholders and donor organisations, as well as the media and other parties, which are directly or indirectly concerned with this issue.

Agricultural risk management relies on an optimal combination of technical and financial tools that are used to better control many sources of risk in agriculture. In the period following the recent floods, it has become apparent that agricultural insurance should be

used as one of the possible approaches to prevent the devastating effects of potential disasters in the future.

The purpose of this paper is to present, in a clear way, the concept of agricultural Insurance, to provide an overview of the existing models in different countries, and to indicate the advantages and the disadvantages of each of these models. The analysis indicates that, notwithstanding the great interest of the many countries' government sector to participate in agriculture insurance policy-making, the market penetration is extremely low. We have also discussed the reasons for such state of play.

Finally, at the end of the analysis, we have provided several recommendations targeting primarily the decision-makers in the governmental sector, but not excluding their international partner-organisations. We have tried to indicate the value of cooperation of various stakeholders in the area of risk management, specifically, in agriculture. Although, in the long-term perspective, it would be useful to examine the level of demand in the agricultural sector of BiH for the agricultural insurance services where the state would participate as a partner, this is not the purpose of this paper.

2. Agricultural Risk Management

Agriculture constitutes an important sector in all the countries of the world, regardless to their developmental. There are several reasons to it, namely: developed and efficient agricultural sector provides reliable food supply; furthermore, great number of the poor people, especially in developing countries, earn their living in agricultural sector; proper development of this sector may considerably contribute to poverty reduction. (Cervates-Godoy and Debrew, 2010). Due to its significance, a considerable attention is given to the strategy for development of this sector and its individual sub-sectors. Therefore, the agricultural policies are an inevitable instrument to be used by the countries so as to direct the development of both physical and human resources in agricultural sector.

However, sector of agriculture is also characterised by the specific type of risks, which in absence of loss protection system, may annul positive effects of good agricultural policies.

Agricultural industry is a subject to natural factors which are hard to predict, and therefore make this sector highly hazardous. Often, the provision of agricultural insurance is the only way to, at least partially protect the agricultural produces from potential detrimental effects of increasingly palpable effects of climate change. However, the culture of ensuring agricultural production differs in countries with different levels of development, thus in many poorer countries paying for the insurance premium is considered a luxury unaffordable to many small and poor farmers.

This paper is a short overview of the existing agricultural insurance models in various countries with different traditions and cultures of insurance provision, different developmental opportunities,

1 *Bosnia and Herzegovina Recovery Needs Assessment (Floods 14 - 19 May 2014)*, Delegation of EU in BiH, reliefweb.int.

2 Vanjskopolitička inicijativa BH "Sistem zaštite i sigurnosti od prirodnih i drugih nepogoda u Bosni i Hercegovini"/ Foreign Policy Initiative BiH, "System for protection and management in state of elementary and other disasters", available at: <http://www.vpi.ba/novost/9617/sarajevo-august-2012.-sistem-zastite-od-elementarnih-nepogoda>.

and options available for the farmers to participate in insurance programmes. The purpose of the paper is to emphasise the importance of insurance in agricultural production, but also to highlight the particular significance of the role that the governmental bodies and public sector play in designing successful agricultural insurance models.

3. What is Agricultural Insurance?

Bearing in mind that the agricultural sector is characterised by the high level of systemic risk, which cannot be effortlessly removed, agricultural insurance is the only instrument which, to some extent, may prevent large losses of revenue in the agricultural sector. Essentially, agricultural insurance is the strategy of transferring a risk of loss from the farmer to the insurance provider, while the cost of risk transfer is paid in the form of insurance premium.

All types of activities in the agricultural sector may be covered by insurance; however, agricultural insurance provision is largely dominated by crop insurance, which accounts for almost 90% of the total premiums collected worldwide. With regard to geographical dispersion of premiums, the bulk of the premium policies is issued in the United States and Canada, whereas Europe is ranked 2nd with 17%. It is followed by Asia, which participated with close to 15% in 2007. (*World Bank, 2008*).

One particular trend is worth mentioning - according to 2008 data of the World Bank, global premium policies issued for this type of insurance have grown rapidly—from US\$8 billion in 2005 to an estimated US\$18.5 billion in 2008. This is a direct indicator of the increasing vulnerability of the agricultural sector, probably due to global climate changes, and other shocks in the international market of agricultural products.

Since the agricultural sector is not a typical one, insurance of the activities within this sector consequently includes practices which are not so typical for the insurance sector. In practice, this refers to increasing involvement of governments and their institutions in designing the systems of support to agricultural insurance models. The most common forms of public sector involvement in agricultural insurance markets are partial or full subsidies of insurance premiums. Although the insurance sector is essentially a private one, the participation of the public sector in the dispersion of risks in agriculture is often explained by the fact that even when the market economy is functional in other sectors, the market in agriculture tends to be non-functional, due to the above reasons, which pertain to the sector's vulnerability and the general problem of the lack of capital in this sector (Stiglitz, 1987). In addition, the problem of agricultural activities' monitoring that often leads to opportunistic behaviour of the farmers and the difficulties with re-insuring of the agricultural insurance additionally discourage the presence of commercial insurance companies.

The presence of systemic risk, that is, risk that simultaneously affects a large number of economic production units, gives the government an argument to intervene by indirectly taking over part of the risk of loss. In addition, taking into consideration the high level of risk and possible occurrence of calamities, such as hail, sleet, drought, floods etc., which may affect the agricultural yield, the commercial insurance providers have no interest in insuring agricultural producers from the effects of natural disasters. Even if there are some commercial insurance companies interested to provide the insurance in cases of the abovementioned natural disasters, the premiums are usually too high for the individual farmers, especially in the poorer

countries. Therefore, it is obvious that, due to lack of commercial interest, there is a portion of the market that remains uncovered. In such situations, it is to be expected that the governments will partially subsidize insurance premium, trying to protect the level of revenues generated from the agricultural production and sustain the productivity of the economy at a certain level.

Notwithstanding the governments' participation in co-financing the premiums, the majority of the producers in underdeveloped countries opt not to insure their products, primarily due to lack of insurance culture, and understanding of the benefits that the insurance may bring. They perceive the premiums as a cost that is justified only in rare situations. Furthermore, it is important to mention that a successful insurance scheme requires the governments to develop agricultural risk assessment infrastructure such as a database with information on weather and natural disasters so that the farmers and the insurance providers have the tools to assess the level of risk exposure to given natural disasters. The involvement of the government in agricultural production insurance support systems requires a legal framework, and quality agricultural monitoring mechanisms to regulate issues in this area and to minimize the possibility of opportunistic behaviour.

4. Agricultural Insurance Schemes in the World: An overview

The models for the delivery of agricultural insurance in the past can be classified in three basic schemes, namely:

1. *State controlled systems (fully intervened systems)*: characterized by a high level of Government support and monopolised provision of insurance; it entails a large budget burden, but provides a good market penetration.
2. *Public-private partnership*: It proved to be the most successful insurance scheme because it includes more rational fiscal expenditures, and enables a gradual increase of market penetration.
3. *Pure market systems (commercial approach)*: characterised by the lack of fiscal costs, but relatively low market penetration; dominated by commercial criteria.

In 2008, the World Bank conducted a comprehensive survey of the agricultural insurance market in 65 states which offer some form of agricultural insurance. Bosnia and Herzegovina was not covered by this survey because it has not yet developed any systematic approach to insurance in the agricultural sector. These are some of the findings:

- 104 countries—offered some form of agricultural insurance;
- More than 90% of global premiums come from developed countries where commercial insurances play a significant role, whereas insurances in less-developed countries are mainly obtained through cooperatives and agricultural associations;
- Approx. 80% of the programmes function on a voluntary basis, while there is a growing trend of compulsory insurance when obtaining agricultural loans;
- More than 2/3 of the surveyed sample countries offer subsidized insurance premiums as a form of governmental support; governmental support is stronger in the developed countries compared to support offered in less developed ones; there appears to be a direct correlation between the level of public sector support

and the penetration of agricultural insurance, which means that the penetration is higher in highly developed countries like USA and Canada.

- In addition to subsidized premiums, the governments also opt for other forms of the support, such as investments in R&D - product research and development (in 41% of the surveyed countries), development of agricultural insurance legislation and framework (in 51% of the surveyed countries), agricultural reinsurance (in 32% of the surveyed countries), and administration and operational cost subsidies (in 16% of the surveyed countries).

In 2006, the European Commission produced a detailed study on agricultural insurance in Europe. With regard to agriculture risk management, the study differentiates between the measures that can be taken by farmers through diversification of their production, and different risk-sharing measures (so-called *Risk-sharing* strategies). In the EU member states, there are several approaches to reducing the risk of losses, namely: through national support programs, support through association of farmers on a regional basis, and classical agricultural insurance. An overview of the basic schemes is given in Table 1. The table shows that only two EU member states, namely Greece and Cyprus, have compulsory insurance that is largely supported by the public sector through subsidizing the premiums. The public-private partnership scheme in Spain is considered, by far, the most successful because it optimally disperses the risk between the private, (insurance companies), the public, and the real sector (the farmers).

Table 1.
Agricultural Insurance Schemes in elected EU Member States

Country	One-risk insurance	Multiple insurance
Austria	PS	PS
Belgium	P	
Bulgaria	P	P
Cyprus	GC	GC
Czech Republic	PS	PS
Finland	P	P
Germany	P	
Greece	G	GC/GS/G
Hungary	P	P
Italy	PS	PS
Romania	PS	PS
Slovenia	PS	P
Spain	PS	PS
Sweden	P	P

Legend:
P: Private non-subsidized;
PS: Private, partially subsidized;
G: Public non-subsidized;
GS: Public, partially subsidized;
GC: Public, compulsory subsidized

Source: European Commission (2006), *Agricultural Insurance Schemes*.

The European Commission report on Agricultural Insurance Schemes also highlights the difference among the Member States in regards to level of their respective governments' participation in subsidizing of the premiums. For example, Italy subsidizes 67% of the premium, Spain approx. 49%, Austria approx. 46%, and Cyprus nearly 50%. There is a trend which has been observed worldwide, in the developing countries since the 1990s - shifting from the publicly subsidised insurance schemes to market-based schemes of agricultural insurance.

The levels of insurance market penetration also vary. For example, Denmark has the greatest penetration level in Europe amounting to 85% of insured arable land, while Bulgaria, where insurance is compulsory to obtain agricultural subsidies, has market penetration level of approximately 52%. Considerably low level of market penetration is recorded in the region, especially in Croatia and Serbia, and neither of those countries has reliable data on number of the farmers who are agricultural insurance beneficiaries. Some estimates indicate that insurance penetration in Croatia may be somewhat around 4%³, while in Serbia the respective percentage may range between 5 and 10%.⁴ 80% of Croatia farmers deem that insurance as not cost-effective.⁵ In both countries, average coverage of agricultural farms with insurance is considerably lower than the average coverage in other European countries. However, neither the European Union has a uniform approach to agricultural risk management; each country regulates and maintains their individual insurance policies, which directly corresponds to the importance attributed to the agricultural sector. Taking into consideration the situation in the region, we can assume that situation in Bosnia and Herzegovina is the same when it comes to agricultural insurance. Currently, there is no official data that could be used to estimate to what extent is agricultural sector covered by insurance.

Table 2 presents main characteristics of the three most common schemes of agricultural insurance, with examples from the countries where those are implemented. It is apparent that in the segment of private-public partnership, involvement of governmental institutions in creating models and schemes of insurance ranges from exerting more control through policy-making to simply participating in subsidizing the premiums. However, the experiences have proved that premium subsidies alone cannot result in significant market penetration through this insurance model. The most successful models proved to be those where the government is actively involved in policy-making, and strengthening of institutional infrastructure in agriculture through development of clear and transparent risk assessment methodologies and strengthening of extension services in agriculture.

3 <http://www.svijetosiguranja.eu/hr/clanak/2013/10/hrvatska-dobivakartu-poljoprivrednih-rizika,361,11826.html>
4 <http://www.sveoosiguranju.rs/?page=394>
5 <http://www.agroklub.com/poljoprivredne-vijesti/osiguranje-usjeva-dio-je-programa-ruralnog-razvoja/11637/>

Table 2. Institutional framework of agricultural insurance

Scheme type	Characteristics	Examples
Insurance by the Public sector	The government as the insurance provider and holds monopoly on the market	a. Canada: Ten regional insurance companies that are supported by the Federal Government b. Cyprus: one governmental insurance company within Ministry of Agriculture
Commercial insurance without participation of the government	Private commercial based insurance	a) Australia: 15 private companies dominant at the market b) Argentina: 29 private companies that cover agricultural insurance market;
Private-public partnerships	1. National insurance company makes partnership with leading commercial insurance company	a) Agroseguero fund in Spain; b) Tarsim Pool (Turkey);
	2. Open market with commercial companies with Government holds certain control level by participation in premiums and policy design;	a) Portugal: SIPAC insurance scheme with participation of 15 private companies; b) The USA: participation of 15 private companies
	3. Open market with commercial companies but lower level of control, role of the government is chiefly in subsidizing the premiums	Brazil, France, Italy, Mexico, Russian Federation

Source: World Bank (2010), *Government Support to Agricultural Insurance: Challenges and Options for Developing Countries*.

5. In place of the conclusion:

Agricultural production insurance should be an integral part of the comprehensive agricultural development strategy. The risks vary from country to country, from larger to smaller farms, and it is impossible to have a general approach, which would provide identical or at least similar results in all environments. This, rather technical issue, must therefore be reviewed within the fiscal policies of the individual countries and the importance of their respective agricultural sectors. It is safe to say that successfully insured agricultural production can reduce the unpredictability of the sector and modernize the approach to pursuing agricultural activities.

Some basic recommendations:

- *Bosnia and Herzegovina must invest efforts to develop insurance culture; it is necessary to raise awareness on the importance of the insurance of thee production, which may additionally professionalise the agricultural sector;*

Sources:

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World Bank (2010); "Government Support to Agricultural Insurance: Challenges and Options for Developing Countries".

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