

INSURING CATASTROPHIC RISKS IN AGRICULTURE

ASIGURAREA RISCURILOR CATASTROFALE IN AGRICULTURA

EMILIA CLIPICI¹

¹ *University of Pitești, Pitești, Romania*

Abstract: *Agricultural risks (in terms of crops: storm, hail, torrential rain, fire, landslides, drought, water ponding on lands, winter frost, environmental incidents, and for animals: natural disasters, accidents, diseases and health problems) are partially insured by the Romanian insurance market. Drought, water ponding on lands, winter frost, diseases and health problems, as well environmental incidents are events that are not undertaken by insurance companies and that could be covered through mutual funds. This article presents the hedging practice through mutual funds and identifies hedging solutions for risks that are not undertaken by agriculture insurers.*

Key words: *Agricultural risks, catastrophic risks, mutual funds*

INTRODUCTION

The European countries with shares of agriculture in the GDP higher than 10% are viewed as the most rudimentary, but also the most vulnerable given that agriculture is not a sector which generates value added, and the economy's dependence on this market generates vulnerabilities, taking into account that the results of most agricultural segments depend on the weather.

Agricultural risks (in terms of crops: storm, hail, torrential rain, fire, landslides, drought, water ponding on lands, winter frost, environmental incidents, and for animals: natural disasters, accidents, diseases and health problems) are partially insured by the Romanian insurance market. Drought, water ponding on lands, winter frost, diseases and health problems, as well environmental incidents are events that are not undertaken by insurance companies and that could be covered through mutual funds.

MATERIALS AND METHODS

Activity sampling. The highlighted area of research includes the following counties: Romania, Germany, Estonia, Finland, Cyprus, England, Italy, Hungary, Slovenia, Spain.

The research method was the comparison of agricultural insurance systems in the mentioned countries, with a thorough analysis on Romania (countless problems by the Romanian agricultural insurance market), describing the current regulations in this field.

The main objectives for this study are:

- Identify practices of the agricultural insurance market in other countries
- A study of the weaknesses of agricultural insurance market in Romania
- Description solutions (mutual funds in agriculture)

RESEARCH RESULTS

Both in Romania, as well as in Europe, agriculture has an important contribution to the Gross Domestic Product (GDP). In recent years, the contribution of agriculture was an average percentage of 5.3% with 6.5% peaks in 2011 and lowest levels of 5% in 2012 and in 2014 (4,4%).

Table 1

Share of agriculture of GDP, in Romania

Million RON (current prices)

	2007	2008	2009	2010	2011	2012	2013
Agriculture, forestry, fishing and fish farming	23992,2	34126,3	32297,8	29874,2	36341,6	28638,1	35192,8
Gross internal product (GDP)	416006,8	514700	501139,4	523693,3	557348,2	586749,9	628581,3
% of GDP	5,8	6,6	6,4	5,7	6,5	4,9	5,5

Sources: National Institute of Statistics, www.insse.ro

In Romania, agriculture faces countless problems generated by:

1. Worsened risks specific to the land exploitation activity and livestock activities,
2. The current economic and financial context, the alignment to the standards required by the Common Agricultural Policy (complying with the requirements of the agricultural acquis communautaire by harmonizing the practices in this field, making structures compatible with the European ones and achieving performance on the European agricultural markets), through the inclusion into an extremely dynamic competitive market; weather and weather change
3. Fragmentation of land ownership in the absence of specialized agricultural assistance and the accurate information concerning the importance of insurance
4. Lack of efficient support from the state and banks
5. The existence of a high number of inefficient farmers
6. The significant decrease of agricultural incomes as a result of high administrative and transaction costs
7. Rural population ageing
8. The limits of the classical agricultural risk insurance:
 - a. The information asymmetry between clients, on the one hand, and insurers and insurance brokers, on the other hand (there is a real risk of guiding uninformed farmers towards sub-optimal insurance products, which do not meet their special needs in the best way, due to the lack of information)
 - b. Adverse selection (a situation in which there is a higher likelihood of concluding insurance contracts with persons with higher risks. For example, if the farmers in areas at low flooding risk and those in areas at high flooding risk can purchase crop insurances at the same price (based on an average for both groups), the premium will have a higher value for farmers in areas at high flooding risk – where damages are expected to exceed the average – than for farmers in the other category. The insurer will end up by paying damages higher than the average (and therefore with more damages) than anticipated when determining the product price, which will affect the reserves or the level of the premiums charged. However, if it takes into account the likelihood of floods in the respective areas, as a rating factor in the calculation process of calculating the premium rate, insurers can offer lower insurance premiums for farmers in the low flooding risk areas).
 - c. moral hazard (the risk that, after concluding an insurance contract, the policy holder's behaviour changes, in such way as the risky event is more likely to occur and may result in more damage than the insurance company had expected based on the calculation made and may lead to the increase in the premiums for all policy holders, if it is not address appropriately). For example, the owner of a crop or of a farm may neglect to treat

infections and epizooties after concluding an insurance which passes the damage risk to the insurer, or may cause a voluntary or accidental fire and argue that the crop or the farm had been set on fire.

d. The distorted incentive – when insurers know the government will automatically cover most agricultural damages, the incentive for correctness is reduced. Insurers can strike incorrect deals, or illegal deals with farmers in having exaggerated or false claims;

e. The limited range of risks can be covered by insurance companies (they are not taken over in the insurance drought, water ponding on lands, winter frost, diseases and health problems, as well environmental incidents). Insurance companies ceased taking such risks over in the insurance since 2002, when Law no. 381 on granting damages in case of natural disasters in agriculture was adopted and became applicable, allowing the government to compensate such catastrophic risks, and which operated for 4-5 years.

Table 2

Ensuring catastrophic risks in agriculture – European experiences

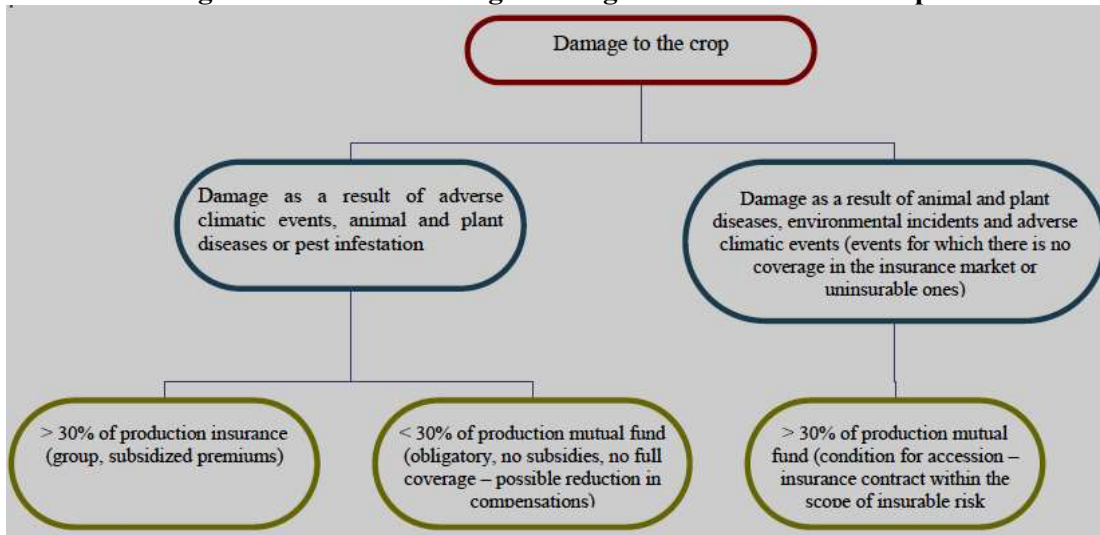
In <i>Germany</i> , there is no mandatory insurance against natural risks in agriculture. However, the percentage of the insurance against hail is high. At the same time, few farmers are willing to conclude a multi-risk insurance (frost, drought, etc.). For extreme damages, farmers still count on the government's intervention. Catastrophic risks are not insured!
Approximately two years ago, in <i>Estonia</i> there were intense discussions with the Ministry of Agriculture concerning the EU requirements in relation to the compensation of insurance premiums for agriculture. The scheme was established locally, but farmers showed no interest to use it. Since then, the insurance industry does not have an active role in protecting crops. Catastrophic risks are not insured!
The <i>Finnish</i> government compensates losses from catastrophic risks in agriculture through the laws on State aid. This will change in the near future (starting with 2016), because the national aid for agriculture will disappear. It is difficult to estimate of insurance policies will be available from 2016. Catastrophic risks are not insured!
In <i>Cyprus</i> , farmer production losses (only the production, not the infrastructure or the trees/plants), as a result of natural risks (e.g.: hail, frost, floods, etc.) are covered by the National Agricultural Insurance Organization (a semi-governmental entity). Due to serious financial constraints, the Ministry of Agriculture does not intend to implement a plan of actions according to the EU Regulation. Catastrophic risks are not insured!
In <i>Great Britain</i> , risks covered vary from one insurance to another. The tendency is not to cover damages for open-air crops, caused by flooding the agricultural land.
Each year, the Ministry of Agriculture in <i>Italy</i> studies an annual insurance plan which defines agricultural productions, calendars and procedures farmers should comply with in order to receive public contributions - in compliance with the European and national standards – in order to cover part of the costs for the insurance of economic loss caused by bad weather, epizooties and plant diseases. Italian agricultural producers used mutual fund since 2002 but they didn't apply the possibilities given to them by the Regulation 73/2009. Actually mutual funds operate as a private funds. In Italy there are 66 such producer groups affiliated in one organization (L'Associazione Nazionale dei Condifesa – Asnacodi). The main task of these associations is to provide tools to manage productivity risk (mainly associated with climate conditions) and in this case two solutions are being used (Figure 1): subsidized insurance and mutual fund. The mutual fund concept, however, is more widely used in practice than it results from the Regulation 73/2009. They pay compensation when: damage to the crop related to adverse climatic events, plant and animal diseases when the value of the damage has reached the level below 30% of the average of annual production of a given farmer in the preceding three-year period or a three-year average based on the preceding five-year period, excluding the highest and lowest entry; damage to crops were associated to adverse climatic events which cannot be covered by insurance or which exceed the size acceptable by the insurance market.
In <i>Hungary</i> a new system was implemented for the decrease of agricultural damages in 2012. This "agricultural premiums" system improves the farmer's self-protection significantly. The premium subsidy is related to the EU funding. The insurers' role increases every year, due to the fact that the climate causes increasing damages in Hungary. The new system expands the range of damages covered, including major damage sources, such as storms, drought, floods, hail and frost.
Natural disasters in the <i>Slovenian</i> agriculture are covered by insurance policies. The insurance covers hail,

fire, thunder, spring frost, storms, floods

Risks in the *Spanish* agriculture are covered by Agroseguro, the Spanish Pool for agricultural insurance which manages the agricultural insurance system and includes domestic and foreign insurers (under the co-insurance system). Certain catastrophic risks are covered (for example flood, fire, hail, or storm), in addition to others.

Source: F. Almajanu, FIAR 2014, www.fiar.ro and si Marietta Janowicz-Lomot, The new instruments of risk management in agriculture in the European Union, pag 6, disponibil la http://ac.els-cdn.com/S2212567114000331/1-s2.0-S2212567114000331-main.pdf?_tid=fcdd4024-d956-11e4-99d1-0000aacb35e&acdnat=1427993016_2f2be79aadba4889a1c22a4eafb497f0

Fig. 1. Insurance Coverage Among Italian Producer Groups



Source: Marietta Janowicz-Lomot, The new instruments of risk management in agriculture in the European Union, pag 6, disponibil la http://ac.els-cdn.com/S2212567114000331/1-s2.0-S2212567114000331-main.pdf?_tid=fcdd4024-d956-11e4-99d1-0000aacb35e&acdnat=1427993016_2f2be79aadba4889a1c22a4eafb497f0

In the course of 2013, Romanian farmers recorded losses of more than 240 million RON due to extreme weather. This is also one of the reasons why farmers’ protection became one of the central topics discussed by the authorities with insurance companies and the other players involved.

Mutual funds and financial markets, especially insurances, have the means required to take over these risks, through their specific methods. In Romania approaches have also been made for the organization and functioning of catastrophic risks that are not insured by companies.

The mutual fund is defined as being a system accredited by the Member Country in compliance with the domestic laws which allow affiliated farmers to conclude an insurance based on which compensations are paid for economic losses caused by the occurrence of certain events regulated through Regulation no. 1305/2013 (art. 36 and 38). The public support for the mutual fund is focused on the payments of the damages to farmers for the damages caused in agriculture following events uninsured by insurance companies.

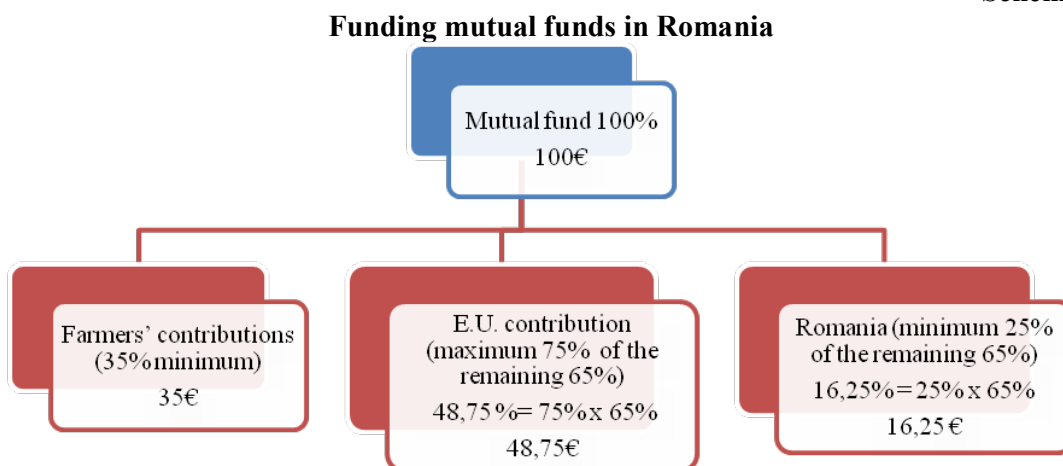
Risks covered by mutual funds: unfavourable climate phenomena: frost, drought, floods, animal diseases: diseases specified in the list set by the World Organization for Animal Health, or in the Annex to the Council’s Decision (EC) 470/2009; quarantine organisms harmful for plants, pests included on the lists in the annexes of Government Decision no. 563/2007; environmental incidents: the specific appearance of pollution, the

contamination or degradation of the environmental quality related to a specific event and a limited geographic expansion.

Mutual funds will also be created with the participation of public authorities focusing on:

- I. Financial compensations paid to farmers for economic losses caused by events provided in PNDR (the payment of damages to farmers for agricultural losses incurred following events not insured by insurance companies)
- II. Reimbursing administrative expenses corresponding to the creation of mutual funds, digressively allocated on a period of maximum three years;
- III. Interests of commercial loans contracted by the mutual funds, with the purpose of paying financial compensations to farmers in crisis.

Scheme 1



Source: National Rural Development Programme, Mutual Funds, available to: <http://www.madr.ro/docs/fep/2013/ghid/prezentare-fonduri-mutuale.pdf>

The financial resources of the Mutual Funds are:

- Farmers' contributions;
- Loans (if necessary) for a 1-5 year period;
- The amount obtained from the assignment of the legal right of the compensated operator to correct damages caused to third parties

The mutual fund eligibility conditions under Regulation no. 1305/2013 are:

- fund accredited by the competent authority in compliance with the national laws;
- a transparent policy on payments made into the fund and amounts withdrawn from it;
- clear rules on the assignment of responsibilities related to potential debts incurred;
- initial equity made exclusively from contributions of farmers included in the fund; no financial contribution will be made from public funds to the initial subscribed capital;

The conditions related to the compensation eligibility under Reg. no. 1305/2013 are:

- Official recognition by the national competent authority of the occurrence of the phenomenon which generates the right to the compensation payment;
- The beneficiary of the compensation should be a member of the mutual fund and an active farmer;
- The production loss should be at least 30% of the farmer's annual average production in the previous three-year period or in an average three-year period based on the previous five-year period, excluding minimum and maximum values;

- In the case of compensations granted for animal and plant diseases and pest infestation, the farmer must have adopted preventive measures and/or measures for the reduction of the effects of the event provided by the laws in force.
- Avoiding over-compensation as a result of the combination of this measure with other public support tools or with private insurance systems.

MUTUAL FUNDS ORGANIZATION AND FUNCTIONING IN ROMANIA

Legal basis is G.E.O. no. 64/2013 approved as amended and supplemented through Law no. 2/2014

Definition of mutual fund: open non-governmental organization, apolitical, non-profit, under the form of legal entity, which is established, organized and operates in compliance with the provisions of Government Decision no. 26/2000 concerning the associates and foundations, approved as amended and supplemented through Law no. 246/2005, as subsequently as amended and supplemented.

MADR accreditation conditions:

- ♣ technical expertise capacity;
- ♣ financial management capacity;
- ♣ members exploiting more than 20% of the agricultural surface of Romania, or its equivalent in UVM (livestock unit)/ha of the livestock owned;
- ♣ a program for the presentation of the activity for a 3-year period from the date of the submission of the accreditation.

CONCLUSIONS

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.

The Council Regulation (EC) No. 1305/2013 did established a new tool of implementation of insurance coverage supported (financed) by public and EU funds, including the mutual fund. Such a solution seems to be a very important instrument for agricultural risk management supporting insurance solutions and strengthening the bargaining power of farmers. Merge into one crop insurance scheme and the concept of mutual fund can give farmers a more comprehensive protection - also in the event traditionally impossible to insure.

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