

Current Issues Regarding the Insurance of Agricultural Corps in Bulgaria

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Abstract: Agriculture insurance is of great importance for farmers not only in Bulgaria but all over the world. Natural forces are unpredictable, and unpredictability is associated with the concept of risk. Risk accompanies a person's entire life and is defined as a future uncertain event leading to adverse effects on property, life or human health. There is a deviation between the expected result and the result of future actions in an indefinite period. Due to the existence of risk in agriculture, it is necessary to protect the farmers' product. In this article the author aims to study the trends in agriculture insurance in Bulgaria. The tasks for achieving the goal will be related to the analysis of the covered risks, the insured objects, the insurance premiums. The scientific methods that will be used are analysis, synthesis, induction, deduction, statistical observation. The scientific hypothesis is that the total amount of insured objects reduce for the studied 4 years due to complex reasons.

Key Words: Insurance, Agricultural crops, Risk

1. INTRODUCTION

Insurance activity arises due to the inability of an individual to cover high value losses arising from the manifestation of various types of risks.

In particular, insurance is identified as an activity of providing insurance coverage for risks under a contract, which consists of raising and spending funds intended for the payment of benefits and other monetary amounts in the occurrence of events or fulfillment of conditions specified in contract or by the law, as well as in directly related activities(Insurance Code,2019).

For the owners of biological assets, insurance would be crucial, mainly due to the fact that these assets are subject to biological transformation (growth, aging, productivity and death), are grown outdoors (or in greenhouses) and are highly dependent on weather conditions.

2. MATERIAL AND METHODS

In order to be able to analyze the covered risks for agricultural crops, it is necessary to clarify the classification of risks.

In general, the risks in insurance mentioned in the Bulgarian literature are called insurance-technical risk, subscription risk, investment risk, administrative-economic, operational, managerial (Iliev, 2009)

The insurance-technical risk represents the negative deviation between the expected and the actual (registered) losses of the insurance company in connection with the coverage of the damages for a specific period (Draganov, 2000, Neykov, 1999)

Signatory risk - the risk of loss in connection with the conclusion of insurance and reinsurance contracts, given the terms agreed on them.

Investment risk - the risk of incurring damages as a result of changes related to market variables, such as inflation, exchange rates, interest rates, securities prices, real estate prices, etc. (market risk); the risk of loss due to weakening of the financial situation or default of the debtor / debtors, including reinsurer / reinsurers (credit risk); the risk of loss as a result of the inability of the company to convert an investment in accordance with the invested funds and in time into liquid assets (liquidity risk).

.Administrative and economic - the actual costs incurred by the company to be higher than expected.

Operational risk - the risk of problems and errors in the systems, human errors or adverse effects on the environment.

Management risk - the risk of losses incurred by incorrectly assessed management decisions and commands.

Other authors believe that all risks in the field of insurance should be included in the insurance-technical risk. This risk is perceived as "the probability of fluctuations above the permissible maximum limit around the average frequency of damage." (Iliev, B., 2009).

According to B. Iliev, it is "expressed through the distribution of the total damage and is characterized by its expected value and dissipation." [Iliev, B. P.45]

The grouping by risks depends on the criteria [Draganov, Hr., J. Bliznakov (2000)]. According to the possibility for the insurer to take responsibility - Insurable risk and non- insurable risk. The insurable risk is characterized by the following features - It should be of an accidental manifestation, It should

be of possible to assess the damage, and there should be a history of the risk.

The non-insurable risks don't have the marks of the insurable risk.

B / According to the degree of influence of the individual on the results of the realization of the risk - subjective and objective risk. Objective risk is present regardless of people's will. It is fully assessable, measurable and covered by insurers. [There are exceptions, such as drought risk.] Subjective risk depends on people's reaction and behavior to the risk itself. Some are cautious in their behavior, others are not. As a result some are willing to take risks and don't insure themselves while others are risk-averse and insure themselves.

C/ According to the number of risks covered by one insurance - universal and individual. Universal risks mean that they can apply to the whole set of insured persons, such as fire, flood, unemployment, etc. Individual risks are specific to a certain range, such as specific health packages.

D / According to the possibility for quantitative measurement of risks - measurable and immeasurable. Measurable are those risks for which the probability of occurrence, the frequency and severity of the possible loss can be determined in advance. Immeasurable risks - the probability of occurrence frequency and severity of losses cannot be determined.

E / According to the specifics of the risks - normal risk, catastrophic risk, risk of environmental pollution, risk of repression, military risk. Normal risk - in which the probability of its occurrence is within predictable limits, as well as the range of damage. Catastrophic risk affects a large volume of sites, such as drought and destruction, as a result of hostilities. Insurers usually do not take catastrophic risks.

The object of insurance in connection with environmental risks is the civil liability of the owners of potentially dangerous objects in connection with the need to compensate the losses of third parties caused by technological accidents and anthropogenic catastrophes and claims filed by individuals or legal entities, in accordance with the norms of civil law. In other words, the liability is insured in order to protect the insured in the event of a claim against him, which determines compensation for damages resulting from the loss of property. Both non-pecuniary damages and property losses arising from the violation of the right of ownership, the right of equipment and production activity and the right of use of water spaces are insured. The military risk, as its name

suggests, is the possibility of damage resulting from military action.

F/ According to the direction of deviation of the planned from the actual result, due to the manifestation of the risk - pure and speculative.

G/ According to the risks for which responsibility is taken to pay - covered and uncovered. The covered risks are defined in the insurance contract, and the uncovered ones - the insurer does not take responsibility for them.

H/ According to the source of danger - risk from the action of natural forces; risk posed by human activity. The risks from the action of natural forces are related to earthquakes, floods, hurricanes, fires, torrents, hail, frost and others. The risks of human activity are associated with theft and robbery as well as a result of human errors (negligence, carelessness, ignorance, lack of experience, etc.)

Obviously, the risks are numerous and cannot be completely avoided. In the practice of insurance, many mathematical and statistical models are used in order to predict the manifestation of the degree of threat.

In this article we will focus on the insurable objective and measurable risks and their impact on insurance premiums and insurance benefits.

For the purpose of our study, insurance products in the last 4 years (2017-2020 inclusive) of 6 companies will be analyzed. The sample of companies represents 46% of the licensed Bulgarian insurance companies (FSC, 2021) randomly selected offering agricultural insurance - DZI General Insurance SC, SC BULstrad, Asset Insurance SC, Euroins SC, Armeec SC, Bull Ins SC. The data is from the last quarter of the years.

The criteria by which the companies will be surveyed are the following:

- Covered risks in crop insurance;
- Differences in the insurance population;
- Premium income;
- Insurance benefits - paid for the sector.

Information about the survey will be used from the general conditions of the Agricultural insurances of the surveyed companies, as well as information from the annual reports.

3. EMPIRICAL STUDY

The risks covered in agriculture can be defined as follows:

- Risk 1 - Hail;
- Risk-2 -Storm;
- Risk 3-Reliance;
- Risk 4-Root fire;
- Risk 5-Heavy rain;
- Risk 6-Flood;
- Risk 7-Slush;
- Risk 8-Freezing and withdrawal.

All corporations provide hail insurance coverage. The explanation is that hail is precipitation of ice grains or pieces. 100% of the companies determine basic and additional coverage.

The basic coverage includes risk 1, risk 2 and risk 3. Risk 4 can be combined with the previous three. Risk 6, risk 7 and risk 8 cannot be insured independently. They relate to additional risks and must be combined with the main ones. It is important to reflect the difference between "flood" and "torrential rain". During the flood, the quantitative damages are compensated as a result of: the direct action of the water masses and the carried solid particles, consisting in digging, extraction, clogging and flooding of plants and fruits; prolonged stagnation of water on the soil, damage caused to plants and fruits as a result of measures taken to limit the spread of floods.

Heavy rain is defined as heavy rainfall in large quantities for a short time with a sudden onset and end that can lead to excavation.

It is important which risks are not covered, as this is important information for farmers.

100% of the companies have indicated that they do not cover damaged crops due to earthquakes, landslides, improper implementation of agro-technical measures, damage by rodents and others pests, drought, hot and cold winds, radiation, declining crop quality. Only 17% of the companies state in the general conditions that the damage to the crops as a result of riots, military actions, civil disobedience is not covered by the insurance. In addition, insurers assume risks that are specifically quantifiable. Qualitative risks - partial quality injuries of crops are not covered by the companies. These risks include impaired soil water permeability (secondarily compacted and overwetted soils); the presence of shallow groundwater; areas subject to swamping (drained swamps, corrected riverbeds, etc.), as well as those with disturbed drainage system. Seed germination is also difficult to predict, especially if the insured person presents a certificate of quality of the planting material. On the

part of insurers, these risks are difficult to quantify and is justified, but on the part of farmers - they can lead to huge losses.

For the studied 4-year period there is no change in the scope of the assumed risks.

Regarding the insurance population, some differences are reported between the individual companies. 17% of insurers include ornamental plants - trees, shrubs and gardens, grown outdoors as tangible fixed assets. Also, newly created perennials such as fruits, strawberries, raspberries, blackberries, blackcurrants, roses, lavender and hops are insured by only 1 company. 50% distinguish medicinal plants in a separate risk group. These include lemon balm, chamomile, St. John's wort herb, lavender, yarrow, sage and more.

Two companies include essential oils and hops in the group of medicinal plants. This is due to the peculiarities of sowing and caring for plants. Greenhouse plants are also valued at a lower risk by insurers. Their advantages are as follows:

- With appropriate equipment it is possible to regulate factors such as sunlight, temperature, humidity and carbon dioxide content with sufficient precision;
- It is possible to regulate the conditions under which the root system of plants develops, such as soil moisture, oxygen content, temperature, inorganic

Table 1: Relative share of agricultural premiums in total premiums

| Insurance company/Year | 2017 | 2018 | 2019 | 2020 |
|------------------------|------|------|------|--------|
| DZI General insurance | 1.4% | 0.9% | 0.8% | 0.68% |
| Euroins | 1.9% | 1.6% | 1.4% | 0.82% |
| Bul ins | 0% | 0.0% | 0.1% | 0.003% |
| Armeec | 0.8% | 0.7% | 0.6% | 0.65% |
| Bulstrad | 0.6% | 0.6% | 0.5% | 0.25% |
| Asset Insurance | 0.1% | 0.1% | 0.0% | 0.001% |

Source: Financial Supervision Commission, <https://www.fsc.bg/bg/>

content and pH of the medium. By using suitable soil substrates or hydroponic technologies, growing conditions that best meet their needs can be achieved.

- It is possible to achieve optimal plant protection, as the space for growing plants is limited and special equipment is used. In addition, in greenhouse conditions, plant diseases develop

much less frequently than under ordinary outdoor conditions.

Only one company includes cereals oilseeds and industrial crops in the same risk group. The reasons for this are, according to our own research, that the plants in this group suffer from similar diseases.

Vegetables are also in a separate group due to their biological characteristics.

With regard to the premium income from insurance certain conclusions can be drawn. For 2020 compared to 2017, accepted as a base, there is a decrease in the indicator between 8% and 60% for different companies. A single company only reported a very sharp decline. Obviously, 2020 is an exception with a very low volume of agricultural insurance for this company. For 2020 compared to 2018 the decrease is from 47% to 4%. The smallest decrease is in ZK Armeec, the largest in Asset Insurance. In 2020. compared to 2019 in 17% of the companies there is no change, the change is only BGN 5,000 for Armeec in favor of the last year.

In summary, premium income is declining with each passing year.

The relative share of the received contributions in the total premium amount is presented in the table1.

The data in the table show that the share of this type of premiums in the total share of all premiums decreases for all companies. For DZI the decrease is by 0.72% (for 2020, compared to 2017), for Euroins - 1.08%, for Bull Ins there is almost no change, it is extremely small and varies from BGN 5876 to BGN 17587. Armeec reports a decrease of 0.15%, Bulstrad of 0.35% Asset Insurance declares almost the same values as the decrease is 0.099% It is important to add that after reviewing the reports of the companies there is a decrease in and in absolute numbers of this indicator.

Compared to other sectors, (where a relative share of the selected companies is reported in total premiums of about 71% contributions for vehicles, fire and other natural disasters - about 12%, 6.1% loans, guarantees, various financial losses and legal insurance, Accidents and disease - 4.8%), a relative share of 1% and below 1% is extremely low.

The reasons for this can be defined as follows:

- Farmers take out insurance only if necessary (eg when applying for bank financing) and only for the main risks. This is especially true when they receive assistance from the State Agriculture Fund. According to the requirements of this fund, the aim is to encourage small and medium-sized enterprises

farmers, producers of fruits, vegetables, tobacco, essential oils, cereals and oilseeds for voluntary insurance of agricultural products against adverse climatic events, which can be equated to natural disaster, and other adverse climatic events, through partial reimbursement of expenses and conclusion of an insurance policy.(ukazania)

For this purpose, farmers must comply with certain conditions: small and medium-sized enterprises have to be registered in the Register of Farmers; have to meet the definition of small and medium-sized enterprises; have no due liabilities to the State Fund for Agriculture; not to be in bankruptcy and liquidation proceedings; not to have due public obligations to the state budget.

- The reasons why farmers avoid this type of insurance are partly rooted in the low insurance culture. On the other hand, there are many unresolved issues. Even if there is a desire to insure against drought risk, such a product is not provided. In addition, some European countries offer insurance against drop in crop yields below certain levels. In Bulgaria, however, it is missing.

- In many cases, farmers have production in agricultural blocks with different territorial status. In this case, it is considered in advance whether there is a need for hail insurance, as it is expected that it will not have an impact on all blocks at once.

- There is no compulsory insurance at least for the most common risk that is realized - hail. If there is such a mandatory product, at least for the crops of barley, wheat, corn, a financial fund will be accumulated and will be used for all risks that are realized.

- Insurance is concluded at minimum insurance premiums. Owners could express a wish for a higher risk premium in the insurance policy.

- Specific information comes to the fore from the Agricultural Information Site - namely, that the state supports to a much greater extent the wine sector in the form of costs incurred for insurance premiums. The farmers' request is for the state to cover about 60% of the amount of crop insurance, ie. in this way the incomes of the farmers are protected. In the event of emerging crises with a short-term / seasonal or long-term effect on the market, it is particularly important to have instruments in place to stabilize farmers' activities and to restore the balance between supply and demand in the sector.

Regarding the paid insurance indemnities, they are illustrated by the following data:

Table 2: Insurance benefits

| Insurance company/Year | 2017 | 2018 | 2019 | 2020 |
|------------------------|--------|--------|--------|---------|
| DZI General insurance | 20.4 % | 6.4% | 7.8% | 0.30% |
| Euroins | 2.5% | 16.5 % | 27.4 % | 2.25% |
| Bulins | 0% | 0% | 0% | 0% |
| Armeec | 6.7% | 7.4% | 7% | 0.41% |
| Bulstrad | 10.7 % | 9.4% | 8.7% | 0.29% |
| Asset Insurance | 0.0% | 0.0% | 0.1% | 0.002 % |

Source: Financial Supervision Commission, <https://www.fsc.bg/bg/>

As can be seen from the table, the paid compensations for 2020 decrease many times compared to 2017, 50% of companies report significant reductions in the indicator. For DZI the decrease is by 20.1%.

The reasons for the reductions are rooted both in the reduced total volume of concluded insurances and in insurance only of the main risks.

Bulstrad also reported a decrease of 10.41%, and Armeec of 6.29%. In the other 50% of the companies the change is minimal and also in the direction of reduction. As with insurance premiums, the decrease is also in absolute numbers.

4. RESULT AND DISCUSSION

As a result of the study, the following conclusions could be drawn:

➤ Companies must clearly and unambiguously state all important conditions concerning the assumed insurance risks;

➤ It is quite natural that no catastrophic risks are taken, as this would upset the financial balance of the insurance market;

➤ The lack of insurance protection against quality risks creates uncertainty for farmers and can lead to agricultural cooperatives going bankrupt. It would be appropriate to develop certain

mathematical and statistical models to predict this type of uncertainty.

➤ The instruments with which the state implements its policy in the field of agriculture could be reconsidered.

5. CONCLUSION

The property, incl. agriculture is a key sector for a country's society. Agricultural activity is particularly risky. The production process in agriculture can be interrupted or partially disrupted by natural forces and other accidental events.

Risk management in agriculture is particularly important and could not be carried out without specialized insurance products. Both the owners, the insurers and the state are involved in the whole process. The empirical analysis shows that both as a relative share and as an absolute amount, insurance premiums have been declining in recent years. It is reasonable to reduce the benefits paid.

The scientific hypothesis confirms that there are certain problems in the sector that need to be solved. The lower insurance culture, the lack of effective support from the state and in some cases the high prices of insurance are factors for this negative result. It is advisable for both the state and farmers to rethink policy in this direction.

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