

## **DIRECT PAYMENTS VERSUS SUBSIDIZED CROP INSURANCE IN AGRICULTURE**

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### **Abstract**

*The article presents types of subsidized crop insurance in agriculture. The purpose of the study was to discuss changes in the area of insured crops in 2009-2015 and to show the link between the introduction of the crop insurance law and the actual level of insurance contracts concluded by farmers. The study attempted to answer the question whether, the principle of compulsory insurance connected with the receipt of direct payments increased the interest of farmers in state-subsidized insurance. The article used data from Statistical Yearbooks of Central Statistical Office, reports of insurance companies submitted to the Ministry of Agriculture and Rural Development and FADN (Farm Accountancy Data Network). The analysis covered detailed FADN agricultural accounting data for 2009-2015.*

**Keywords:** agriculture, risk, insurance, farmers, direct payment, European Union, Poland.

**JEL codes:** B10, Q18, G22.

### **Introduction**

Agriculture is a branch of the national economy that is very strongly linked with environmental conditions. Dependence of the production on environmental factors or the set of natural phenomena causes a strong connection with the natural environment and natural disasters. Therefore, risk management in agricultural activity

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is particularly important in decision making on farms. In agriculture, protection against risk is provided through insurance policies offered by insurance agencies and companies. Insurance can thus be defined as a tool for transferring the risk to the insurer. Some authors (Banasiński, 1996) ascribe to them the function of a regulator of economic development processes disturbed by random events, natural disasters, and misadventures. Insurance policies work by (directly or indirectly) distributing regulation cost among predefined entities taking advantage of that tool. It should be noted, however, that insurance is a way of compensating for random damage in regard to natural persons and business entities representing various sectors. What also is of no small importance to the development of insurance is the state policy, which can significantly affect the insurance portfolio structure or planning of demand for insurance from business entities. The particular role of the state in this area is seen in the agricultural sector, to which both mandatory and voluntary insurance is addressed. In the field of agricultural insurance, the state acts as a guarantor, but this function is secondary to the regulatory function and insurance system initiation. Such a situation occurs in the area of state-subsidised crop and livestock insurance, where the state is a kind of security buffer/guarantor for both insurance agencies and the farmers.

The premise for raising the issue of connections between direct payment and subsidised insurance was the introduction of provisions obliging farmers to insure half of the crop area to the Act on crop and livestock insurance. Hence, the aim of the article is to assess the connections between the change to the area of crops insured by farmers (the compellability aspect) and the area of land covered by the direct payment system. In this context, a hypothesis was formulated that the Act on crop and livestock insurance resulted in the increase in farmers' interest in crop insurance. The study uses data from Statistical Yearbooks published by GUS, reports from insurance agencies submitted to the Ministry of Agriculture and Rural Development, Agency for Restructuring and Modernisation of Agriculture, and FADN agricultural accounts system. The collected material covered the period of 1990-2015. FADN data for 2009-2015, which was presented in the form of tables and Figures, was subjected to a more detailed statistical analysis.

### **Insurance risk in the economic theory**

The approach to risk changed as the economic thought developed. As early as in the classical economics, Smith and Ricardo pointed to the importance of risk in economic activity. Smith emphasised that where capital is used, the profit rate changes depending on whether revenue is more or less certain. Profit rate, however, does not grow proportionally to the risk in order to fully compensate for it (Zabielik, 2003).

In the early 18<sup>th</sup> century, the Bernoulli brothers claimed that every person should choose and make decisions according to the utility principle. Yet, it should be remembered that individuals do not have identical information or they evaluate differently those they have (Kaczmarek, 2005). Jacob Bernoulli was one of the earliest researchers to study the relation between probability and information quality.

He assumed that in similar conditions, the occurrence or non-occurrence of a specific phenomenon will follow the same rules as in the past (Kaczmarek, 2005).

A much more accurate analysis of risk was carried out by Knight. In his *Risk, Uncertainty and Profit*, published in 1921, he stated that unique events, which are impossible to appraise, i.e. uncertain, occur in the economic practice and simultaneously dominate it (Knight, 1921). Furthermore, we encounter repeatable events, which can be appraised, whose probability of occurrence, i.e. risk, can be determined. Also Lange (1967), when referring to risk, clearly stated that where we are not able to apply probability theory, we face uncertainty, but where such application is possible, we deal with risk. Knight made a distinction between insurable risk (e.g. fire) and uninsurable risk, which results from the dynamic changes to the market (Landreth and Colander, 2005). Knight also emphasised that formulation of conclusions from observation of past occurrences is exceptionally risky. Entrepreneurs often forecast some future events based on the analysis of past occurrences and either do not pay attention or fail to identify significant improvement or deterioration in the specific phenomena. Each event is unique, there are no two identical occurrences, and thus it is impossible to estimate the actual probability for an event we are interested in (Kaczmarek, 2005). In Knight's opinion, the disadvantage of classical economics was the assumption that each participant of the system has complete knowledge. Where the future is unknown, the result is determined by the rules of the probability theory. Similarly, Keynes stated in his economic theory that economic processes undergo continuous change and, therefore, the fact that an event occurred in the past will not mean that it will occur in the future (Kaczmarek, 2005).

The concept of risk and understanding the idea behind it is fundamental to both the theory and practice of insurance (Ronka-Chmielowiec, 2002). It was noticed as early as in 1826-1863 by von Thünen (a representative of spatial economics), who emphasised that the risk related to business activity can be calculated and insured against, but there are such economic initiatives that will not be insured by any insurance company (Thünen, 1910). Similar standing was adopted by Willet, who believed that a human cannot change the course of events but can predict it and protect oneself against its undesirable consequences (Willet, 1951). This position was elaborated on by Knight when he stated that only risk is insurable and can be measured using the probability theory, which results from its characteristics (this refers to unfavourable quantitative events that actually occur). All other uncertain events are uninsurable due to the absence of the characteristics of risk.

When they referred to insurance, Friedman and Savage (1948) indicated that insurance means preference for some minor loss over a minor chance of a major loss. The issue of profit, namely the reduction of loss, is an incentive to take risk, while individual profit is payment for undertaking the risk. On the other hand, Arrow (1979) stressed that the essence of insurance is the transfer of risk, present in many forms in the economic system with some restrictions. Insurance is limited in scope because many types of risk are classified as uninsurable. Secondly, insurance is limited in the sum (insurance is limited to the sum of actual losses), and thirdly, it can resort

to imposing obligations on the insured (the necessity to undergo medical examination). Means of risk reduction in Minc's classification also include insurance of premises and insurance against events (Minc, 1997). Furthermore, the author points to the fact that insurance fees belong to the costs of an enterprise and lead to price growth, but absence of insurance might result in a loss vastly exceeding the amount of a premium (fee). From the perspective of the agricultural sector, reflection on the above issues leads to the conclusion that only a portion of operations in this area entails pure risk resulting from the volatility of weather or possible occurrences of epizootic diseases. Such events are in principle insurable. In the agricultural sector, however, there are areas that are difficult to insure, e.g. volatility of product and agricultural raw material prices or changing legal and political conditions. From the perspective of insurance agencies, such risk would be difficult to take.

The absence of the option to insure against certain economic events and the existence of systemic risk has consequences in the form of necessity of state regulation, e.g. subsidies, whose purpose is to protect strategic areas of activity or sectors. To summarise the risk aspect, it should be emphasised that risk is an inherent phenomenon in decision making. Though, Sulewski (2015) indicated that risk can be perceived both negatively (threat) and positively (opportunity), but in the context of business operations, particularly agriculture, we usually see it as a threat, e.g. weather. Therefore, there is a need to refer to the possibility of reducing risk in agricultural activity through insurance.

### **Insurance in agriculture in the selected EU countries**

In recent years, the European Commission has been emphasising the growing importance of effective risk management in agriculture and striving for implementing uniform solutions in this regard in European Union Member States. Under the current Regulation of the European Parliament and of the Council (Article 36 of Regulation 1305/2013), Member States are allowed to co-finance insurance premiums paid by farmers in relation to crop, animal and plant insurance. Financial aid from the state budget may not exceed 65% of the premium due to crop, animal and plant insurance against economic losses resulting from adverse climatic events (frost, hail, ice, rain, and drought), animal or plant diseases, or pest infestation. Aside from this, the Member States are also allowed to provide budget aid to mutual funds or income stabilisation tools in the form of a financial contribution ensuring compensation for farmers for a severe drop in income. Aid is provided in a situation of drop in income where losses due to adverse climatic events, animal or plant diseases exceed 30% of the average annual production in the preceding three-year period (or the average for three years in the preceding five-year period excluding the maximum and the minimum value) (Article 36 of Regulation 1305/2013). Countries that have implemented that system include Belgium, France, Croatia, Hungary, Italy, Latvia, Lithuania, Malta, the Netherlands, and Portugal (*Risk management schemes in EU agriculture*, 2017).

In Spain, the agricultural insurance system is very well developed, it has functioned since 1978. The public-private insurance system provides options for pro-

tection against adverse climatic events and pests or animal diseases. Insurance protection covers crops, livestock, and forests. The specific nature of the system is based on the fact that insurance agencies are members of the association named *Agroseguro* (<http://agroseguro.es/agroseguro/quienes-somos/introduccion-y-objetivos/introduction-and-objectives>, 3.11.2017). In 2017, there were 22 insurance agencies that belonged to that organisation. The Spanish agricultural insurance system is based on the participation of public and private institutions, and voluntary participation of farmers. The system is supervised by ENESA, i.e. the State Agricultural Insurance Entity, which prepares the agricultural insurance plan, including the amount of subsidies to insurance premiums. Important characteristics of the system include co-financing of insurance premiums from the state budget or regional governments' budgets. *Agroseguro* managed the subsidy on behalf of the producer, the producer pays only a portion of their premium not inclusive of the subsidy, and *Agroseguro* then applies for the remaining amount necessary to cover the total insurance cost to the state (ENESA) and autonomous regions. The average amount of subsidies to insurance premiums from the government and regional governments is 50%, in the case of crop insurance – 60% (Wojciechowska-Lipka, 2013). ENESA and *Agroseguro* jointly define the premium tariffs, carry out research and analyses related to losses in agricultural production (Lipińska, 2016).

In Germany, the following types of insurance are present: crop insurance against hail, and animal insurance, and forest insurance with 50% premium subsidies. The insurance against hail covers 60% of the total crop area in the country. In Germany, there are also no state subsidies, so farmers cover 100% of the crop insurance cost (Mahul and Stutley, 2010). Crop insurance is provided by mutual insurance societies, private insurance agencies, and public companies. On the German market, there are 14 insurance agencies that offer insurance against hail, and a single agency that offers insurance against many risks. Insurance against hail involves 8% insurance excess. In the case of livestock, over 50% of farmers involved in animal rearing hold an insurance policy against losses due to animal diseases. Such losses and the cost of disposal are covered by a *Tierseuchenkasse*, which is a public-private fund. The operations of *Tierseuchenkasse* is financed from premiums from livestock owners and from subsidies funded by federal states. The fund is financed by the farmers at 50% (the amount payable depends on the animal species) and at 50% by the state (Wojciechowska-Lipka, 2013). Apart from this, Germany offers state aid in case of natural disasters, e.g. flood or drought.

In France, crop insurance has a long history. In 1964, the National Guaranty Fund for Agricultural Disasters (FNGCA) was established with the purpose of paying compensations in case of natural disasters. Half of the fund is financed from state subsidies, and half by farmers. In 2005, private insurance started to develop. The state also introduced 35% subsidies to crop insurance premiums (Wojciechowska-Lipka, 2013). In 2010, the FNGCA was disbanded, and the National Fund for Agricultural Risk Management (FNGRA) was established. In 2010-2015, crop insurance covered mainly field crops, and to a lesser extent, grapevine and vegetables. Despite the insurance system reforms, the percentage of insured crop area was

still low – in 2013, only 30.6% of the crop area was insured (in 2010 – 27%, mainly cereals) (Enjolras and Santeramo, 2016). Therefore, in order to increase the popularity of insurance policies, the French government, in cooperation with farmers' trade unions and insurers, decided to change the system from 2013. Instead of developing more complex insurance products, the decision was made to establish a new system whose purpose was to ensure a larger number of insured farmers. In times of natural disasters, the policy provided for compensation up to production cost, so the farmer could start operation anew, i.e. start a new production cycle. In practice, the damages were calculated based on a hectare of specific production and the location of a farm. As of now, the scope of crop insurance introduced in France in January 2016, involves compensation due to damage resulting from frost, hail, flood, and droughts. In order to obtain the compensation, the loss must exceed 30% of historical annual average production (average for three preceding years). This pertains mainly to four sectors: viticulture, field crops, grasslands, and fruit production. The structure of the new insurance policy consists of three levels (Enjolras and Santeramo, 2016):

- The first level corresponds to insurance only against production losses. Production cost is determined by Agricultural Chambers and experts every year. Pursuant to the EU regulation, this first level is subsidised at 65%.
- The second level provides protection against decreased efficiency of a farm. State subsidies are limited to 45%.
- The third level offers additional guarantees in case of price changes and deterioration of product quality. There is no subsidy at this level.

According to calculations by French insurers, the crop insurance premium amounts to about EUR 10 per hectare after deducing the subsidy (Enjolras and Santeramo, 2016). As shown by Enjolras and Santeramo (2016), in the first year of operation, the new insurance policy did not result in the growth in number of farmers concluding insurance contracts. However, the floods and hailstorms in the summer of 2016 that occurred throughout the country financially affected thousands of farmers, who had to face consequences of not being insured.

### **Crop insurance rules under Polish legal regulations**

On 7 July 2005, the Act on subsidies to crop and livestock insurance was passed (*Act on crop and livestock insurance, 2005*), which was amended on numerous occasions and took its final shape on 23 March 2017. The legislator aimed at promoting crop and livestock insurance, which was limited after 1990, and at reducing the amount of emergency aid from the state budget for producers who have sustained losses. The Act on crop and livestock insurance introduced a number of rules that are important from the farmers' perspective, e.g. the possibility to conclude mandatory crop insurance contracts, subsidies to premiums due to insurance against consequences of random events in agriculture, and the option to use a targeted subsidy related to the compensation for loss due to drought, flood, hail, and other random events listed in the Act. Under the Act of 7 March 2007 on crop and livestock insurance, the state budget subsidises premiums paid by farmers due to

insurance against the following random events: in plant production (i.e. crops – cereals, maize, oilseed rape, common agrimony, hops, tobacco, field vegetables, fruit trees and bushes, strawberries, potatoes, sugar beets, or legumes) – against hurricane, flood, hail, thunderbolt, drought, adverse effect of winter and spring frost, and in animal production (i.e. cattle, horses, sheep, goats, poultry, or pigs) – against hurricane, flood, downpour, hail, thunderbolt, landslide, avalanche, emergency slaughter. Insurance premiums are subsidised from the state budget. For crops, they may amount (Act of 23 March 2017) up to 65% of the premium where a farmer concludes an agreement and the insurer sets the rate not higher than 9% of the sums insured. As regards users of class V and VI UAA, the above rate may be somewhat higher, at 12 and 15% of the sums insured. For livestock, on the other hand, the rate may not exceed 0.5% of the sums insured. Insurance agencies are liable for damage to the main crop where it amounted to at least 30% and resulted from such events as hurricane, thunderbolt, drought or adverse effects of winter. The Act includes yet another basic provision referring to the mandatory nature of insurance. Namely, agricultural producers are obliged to insure at least 50% of crop area for which direct area payment was paid. There is a need to emphasise that the obligation to conclude an insurance contract does not cover all the UAA but only the so-called cropped area, whose total area in Poland slightly exceeds 10 million hectares. The agricultural producer who has failed to satisfy this obligation has to pay a fine of 2 euro per 1 ha. Only the absence of an insurance policy results in the reduction in the state aid due to natural disasters by 50%.

### **Scope of insurance in agriculture in Poland**

In 1990, the crop insurance obligation was abolished, which led to a large drop in the number of insurance contract concluded from about 3 million in 1990 to about 75,000 in 1997, to 32,000-36,000 in the years immediately preceding the implementation of the Act of 2005 (Fig. 1). The new act was supposed to provide an impulse to purchase insurance policies, but their number remained at a similar level, and amounted to about 140,000-150,000 insurance policies bought by farmers every year from 2009 to 2015. It is worth stressing that many farmers decided to purchase such a policy without subsidies from the state budget.

In 2011, subsidies to crop and livestock insurance amounted to about PLN 125 million, in 2012-2014 – about PLN 160 million, and in 2017 they grew to over PLN 900 million. Such a large increase in crop insurance subsidies from the state budget was a consequence of such factors as an insufficient amount in the earlier years, which resulted in farmers being prevented from concluding insurance contracts. It should be added, however, that factors that could contribute to the growth in the use of funds allocated to subsidies, and thus the increase in subsidies, included amendments to the Act on subsidies to crop and livestock insurance (e.g. increase in insurance premium subsidies, increase in maximum amounts qualifying a farmer for a subsidy, or reduction in the insurance excess). Before 2010, subsidies were on average used at 64% (in 2005 – at about 18%, and after 2010 – about 89%).

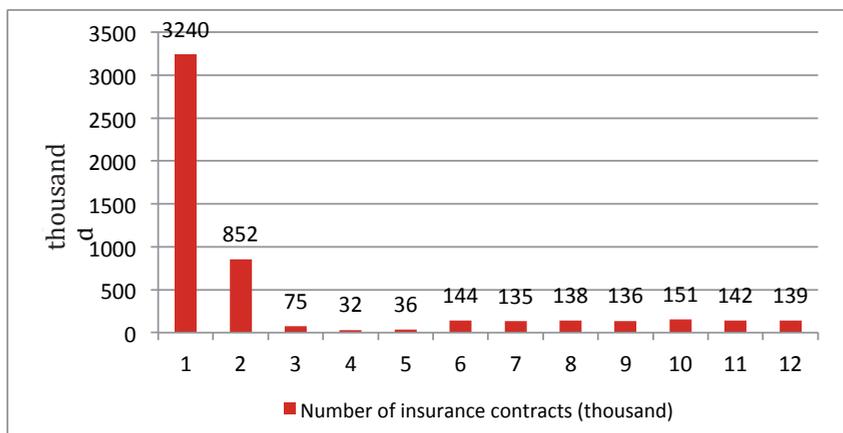


Fig. 1. Number of crop insurance policies purchased in 1990-2015 number of insurance contracts (thousands).

Source: own elaboration based on: GUS (1986-2009), and data from reports by submitted to the Ministry of Agriculture and Rural Development by insurance agencies (2009-2015).

Until 2008, the Act on subsidies to crop and livestock insurance did not oblige farmers to purchase insurance policies. The insurance obligation introduced in 2008 provided for insuring 50% of crops for which direct area payment was paid. The insured crop area, however, was different from what the legislator had aimed to achieve, but the obligation indubitably contributed to the increase in the percentage of insured crops, as shown in Figure 2. As early as in 2008, after the insurance obligation had been introduced, one could observe an increase in insured crop area by over six times compared to 2006, and about three times compared to 2007. In 2015, the insured crop area amounted to about 3 million ha of UAA, and, which should be emphasised, a slow drop in insured area has been observed since 2013, which may mean that a large portion of crops remains uninsured despite the obligation.

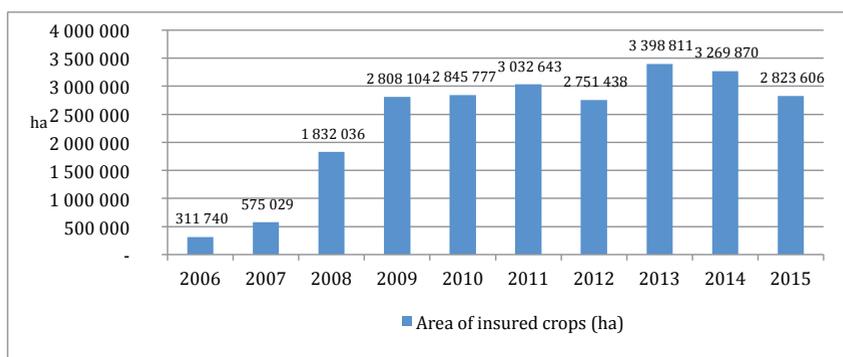


Fig. 2. Insured crop area in 2006-2015 (ha) Insured crop area (ha).

Source: own elaboration based on data from the Ministry of Agriculture and Rural Development.

Although the percentage of insured crop area increased in the period when the Act was binding, the goals of the legislator are far from being achieved (Uzasadnienie do projektu ustawy..., 2015), as in 2015, the insured crop area should have amounted to 3.8 million hectares, and in 2020 the insured area should reach 4.5 million hectares. The downward trend of 2013-2015 is worrying. It can be a consequence of insufficient incentives to conclude insurance contracts or farmers' failure to notice their obligation to purchase insurance policy or disregard for it. The issue may result from the limited capacity to enforce this obligation. This does not only refer to the amount of the penalty that can potentially be imposed due to the absence of the required insurance policy (2 euro/ha). What is vital here is the increase in producers' awareness of the need for insurance, which reduces adverse impact of increasingly common natural disasters on agriculture, and the farmer's understanding that the absence of an insurance policy leads to a reduction in state aid in case of a natural disaster by 50%.

In 2005-2015, recovery from natural disasters cost the state budget about PLN 920 million a year on average. This aid increased from PLN 315 million in 2005, to PLN 1.0–1.4 billion in 2009-2015. The findings based on FADN data have shown that only 2,600 farms benefitted from the disaster recovery aid in 2009-2015, which accounted for 3.2% of private farms in the FADN base. This data demonstrates that only a few farms seek such aid.

The scale of the problem related to the small prevalence of crop insurance despite the statutory obligation was illustrated with FADN data for 2009-2015. The analysis shows that only 20-22% of farms included in the FADN database and receiving direct payments insure their crops (Fig. 3).

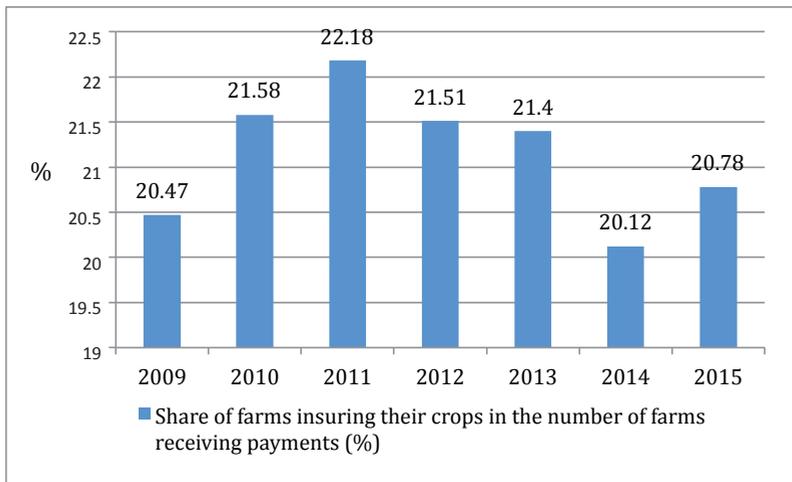


Fig. 3. Percentage of farms insuring their crops in farms receiving direct payments in 2009-2015 (%). Source: own calculation based on FADN data.

Such a situation requires a more in-depth analysis of the phenomenon and determination of the kind of farmers who are most willing to insure their farm (this can refer both to area of a farm, its location or production type). In order to carry out a more detailed analysis, farms were divided into the following classes: small (very small, small, medium small), medium (medium small and medium large), and large (medium large, large and very large).

Table 1

*Percentage of farms insuring their crops among farms receiving direct payments by area classes in 2009-2015 (%)*

UAA	2009	2010	2011	2012	2013	2014	2015
Very small ( $\leq 5$ ha)	5.52	5.95	5.56	5.53	3.77	2.94	1.55
Small ( $5 < \leq 10$ ha)	8.63	9.16	9.28	7.01	6.92	6.86	6.56
Medium small ( $10 < \leq 20$ ha)	12.99	14.60	13.59	13.14	14.13	12.16	12.88
Medium large ( $20 < \leq 30$ ha)	20.20	21.39	20.47	19.12	17.40	17.92	18.04
Large ( $30 < \leq 50$ ha)	25.66	26.12	27.94	27.80	27.86	25.94	26.38
Very large ( $> 50$ ha)	37.13	38.51	42.07	38.72	39.96	37.89	38.05
TOTAL	20.47	21.58	22.18	21.51	21.40	20.12	20.78

Explanations 100% = the number of farms in the particular area class.

Source: own elaboration based on the FADN data for 2009-2015.

The farms that most often satisfy the statutory insurance obligation include large and very large farms. In the 30-50 ha group, in 2009-2015, from 25% to 28% insured their crops, while among farms over 50 ha, 37% to 42% did so (Table 1). The situation is the worst among the very small and small farms with up to 10 ha of UAA, where only 2% to 9% of farms receiving direct payments concluded insurance contracts. Moreover, it is worth stressing that the percentage of such farms is dropping year by year. Among very small farms, nearly 6% were insured in 2009, but in 2015, this proportion decreased to 1.6% (Table 1). In terms of spatial diversity, FADN data shows that in 2015, the highest number of crop insurance contracts were concluded in Kujawsko-Pomorskie Voivodeship (50.1%) and Opolskie Voivodeship (34.5%). The interest in such agreements was the lowest in Podlaskie (5.1%), Łódzkie (5.9%) and Mazowieckie (6%) Voivodeship. This results from the fact that among the farms with a smaller percentage of insured crops, the dominant production type is animal production, which significantly reduces the need for such policies.

Table 2

*Incentives for farmers to purchase state-subsidised crop insurance*

Specification	By family farm income		By UAA		% of responses among the entire farmer group
	Lower income (below PLN 156,500)	Higher income (above PLN 156,500)	Smaller area (below 91.6 ha)	Larger area (above 91.6 ha)	
Insurance premiums are at a reasonable level	9.1%	6.8%	11.4%	4.5%	15.9%
I don't want to risk because there are many threats, particularly those related to weather	34.1%	45.5%	36.4%	43.2%	79.5%
My financial situation is difficult, and I am afraid of extra losses	9.1%	9.1%	9.1%	6.8%	15.9%
This was required by a bank and/ or the Agricultural Property Agency	2.3%	2.3%	2.3%	2.3%	4.5%
I want to use direct payments safely	13.6%	13.6%	9.1%	20.5%	29.5%
There are too few risk management instruments	2.3%	2.3%	0.0%	4.5%	4.5%
Other (what?)	0.0%	2.3%	0.0%	2.3%	2.3%

Source: own elaboration based on a questionnaire prepared by Agricultural Finance Department of the Institute of Agricultural and Food Economics and carried out among FADN farms in 2017.

In 2017, an in-depth survey was conducted on a group of 120 farms evenly distributed throughout Poland and included in the FADN database. The survey addressed incentives for farmers to conclude insurance contracts. The survey was conducted based on a questionnaire for an interview carried out by experienced consultants from Agricultural Advice Centres. The respondents were divided into groups in two ways: by family farm income, and by UAA of their farms. These groups were also divided into two subgroups: farms with higher and lower income, and farms with smaller and larger area. The respondents were allowed to pick more than one answer.

As shown by the analysis, the most important factor indicated by the respondents as the reason for concluding an insurance contract was the more and more frequent occurrence of natural disasters (such an answer was given by 79.5% of the respondents). Strong awareness in this regard was shown by owners of farms with higher income, above PLN 156,500 (Table 2).

The second most popular factor among the respondents was safe use of direct payments in accordance with the statutory provisions. The farmers were aware that the failure to conclude an insurance contract in practice does not restrict the right to direct payment but only limits the option to take advantage of public aid due to natural disasters.

## Conclusions

Because of more and more frequent occurrence of adverse climatic events and natural disasters agricultural operations are increasingly difficult and risky. Despite these hazards, many farmers still decide not to insure their crops. The hypothesis that the Act on crop and livestock insurance has increased the farmers' interest in crop insurance, which was stated in this article, has not been confirmed. As shown by the data from the Ministry of Agriculture and Rural Development, in 2015, the insured crop area amounted to mere 2.8 million hectares. What is the cause of the present situation?

There is a need to reflect on whether insurance agencies offer policies that farmers expect. The analysis has shown that the limited number of subsidised insurance contracts might result from insufficient state budget funds allocated to this aim. In 2016, the budget ran out of funds for agricultural insurance subsidies in November, and the amount allocated to this aim exceeded PLN 200 million. In such a situation, farmers who wanted to insure their crops at the end of the year, could not benefit from subsidised insurance. Unfortunately, in 2016 and 2015, crops sustained severe damages, primarily due to winter and drought, which also resulted in insurance agencies increasing premiums and contributed to a drop in the number of new insurance contracts.

As shown by a more in-depth survey conducted by the Institute of Agricultural and Food Economics in 2017, the most important incentive for farmers to purchase insurance policies was reduction of risk due to adverse climatic events (80%), while 30% of the respondents indicated "safe use" of direct payments. The statutory obligation was, therefore, an important but not the most important incentive for farmers to conclude an insurance contract. The survey confirmed that the insured crop area increased after 2007, but this growth was significantly lower than the legislator had intended.

This situation clearly shows that the reasons for the failure to satisfy the statutory obligation should be sought at a deeper level, e.g. low and inadequately enforced fines for the failure to purchase an insurance policy or the parallel system involving high compensations in the event of natural disasters. Supposedly, a reduction in the state aid by 50% in case of a failure to insure is not a sufficient stimulus to conclude a relevant agreement.

This area, however, requires a more in-depth analysis that would clearly demonstrate what kind of farms fail to meet the statutory obligation. This problem can be solved e.g. by correlating direct payments with the purchase of insurance policies. It should be borne in mind, however, that a large portion of farms in Poland are subsistence farms, hence it would be desirable to introduce lower limits (e.g. economic size of a farm, income level) which would exempt farmers from the obligation to purchase such a policy and would not restrict their access to direct payments or aid in case of a natural disaster.

The analysis of agricultural insurance systems in the selected EU countries shows major differences between individual countries in this regard. For instance,

in Germany, there is only private crop insurance system, while in Spain and France, there are systems involving state subsidies. The effort to increase the insured crop area, however, is not made exclusively in Poland but also in other European Union Member States, e.g. in France. There, despite many years of experience in this regard and subsidies to insurance premium, the insured crop area has been unsatisfactorily low for a long time. Furthermore, reforms of the insurance systems of the selected EU countries are adapted by farmers very slowly, just like in Poland.

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## PŁATNOŚCI BEZPOŚREDNIE A DOTOWANE UBEZPIECZENIA UPRAW W ROLNICTWIE

### Abstrakt

*W artykule przedstawiono rodzaje dotowanych ubezpieczeń upraw w rolnictwie. Celem opracowania było omówienie zmian powierzchni ubezpieczonych upraw w latach 2009-2015, a także pokazanie związku pomiędzy wprowadzeniem Ustawy o ubezpieczeniu upraw a faktycznym poziomem zawieranych umów ubezpieczenia przez rolników. W artykule starano się odpowiedzieć na pytanie, czy zasada przymusowości ubezpieczeń związana z otrzymywaniem płatności bezpośrednich zwiększyła zainteresowanie rolników ubezpieczeniami dotowanymi z budżetu państwa. Podstawą analizy były dane pochodzące z Roczników Statystycznych GUS, sprawozdań zakładów ubezpieczeniowych składanych do MRiRW, ARiMR oraz systemu rachunkowości rolnej FADN za okres 2009-2015.*

**Słowa kluczowe:** rolnictwo, ryzyko, ubezpieczenia, rolnicy, płatności bezpośrednie, Unia Europejska, Polska.

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