

## **Development opportunities for the insurance of agricultural crops and livestock in Poland**

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### **Abstract**

The experience of countries of the Community clearly indicate that the existing risk management instruments (including insurance subsidized) are not fully utilized, and what more do not guarantee fully the financial stability of farms. Hence appear the new needs for innovative risk management tools in agriculture. The aim of the study will attempt to assess past experience in the implementation of agricultural insurance in Poland (including subsidized recommended to UE).

For the analysis of the legal status were used the Polish insurance regulations and European Union (EU) legislation in the range of the functioning of risk management tools recommended by the Common Agricultural Policy (CAP). Conducted analyses indicate that the market for crop insurance and livestock is poorly used by Polish farmers. It is estimated that only 12% of farms in Poland insures their crops. In the case of animals the situation is even more unfavourable, as in Poland are insured only 5% of the animals. Moreover, the level of the utilization of subsidies for agricultural insurance is low. In 2014, for crop insurance and livestock is allocated in the budget the amount of approx. 201 million polish zloty (PLN). The level of subsidies utilization amounted to about 80% and it was about 10 p.p. lower than in 2013. In 2015, the amount of subsidies remained similar to the 2014 level and amounted to about 200 million PLN. The analysis shows that many farmers do not decide to buy insurance. Lack of comprehensive system solutions for the protection of risk in agriculture will force the need to introduce the new instruments Risk Management in Poland.

**Keywords:** risk management tools, risk management in agriculture, CAP, crop insurance

## **Възможности за разработване на инструменти за управление на риска (застраховка на земеделски култури) в селското стопанство на Полша**

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### **Резюме**

Опитът на страните от Общността ясно показва, че съществуващите инструменти за управление на риска (включително субсидираните застраховки) не са използвани напълно и още

повече, не гарантират напълно финансовата стабилност на фермите. Следователно се появяват нови потребности от иновативни инструменти за управление на риска в земеделието. Целта на изследването е, да се опита да оцени натрупаният опит от прилагането на селскостопанско застраховане в Полша (включително на субсидирани застраховки препоръчани от ЕС).

За анализ на правния статус са използвани полски застрахователни регламенти и законодателство на Европейския съюз (ЕС) в обхвата на функциониране на инструментите за управление на риска препоръчани от Общата селскостопанска политика (ОСП). Извършените анализи показват, че пазара за застраховки на земеделски култури и добитък е слабо използван от полските фермери. Оценява се, че само 12% от фермите в Полша застраховат техните земеделски култури. В случая с животните ситуацията е още по-неблагоприятна, като в Полша са застраховани само 5% от животните. При това, нивото на използване на субсидии за селскостопански застраховки е ниско. През 2014, за застраховка на земеделски култури и добитък е предвидена в бюджета сумата от приблизително 201 милиона полски злоти (PLN). Нивото на използване на субсидии се равнява на около 80% и то е с 10 процентни пункта по-ниско от това през 2013 г. През 2015 г., сумата на субсидиите остава подобна на нивото от 2014 и възлиза на около 200 милиона полски злоти (PLN). Анализът показва, че много фермери не се решават да купят застраховка. Липса та на всеобхватни системни решения за защита от риска в земеделието ще наложи въвеждането на нови инструменти за управление на риска в Полша.

**Ключови думи:** инструменти за управление на риска, управление на риска в земеделието, ОСП, застраховка на земеделски култури

## INTRODUCTION

Along with the development of the economy and broadly understood developments in an enterprise and its environment, different risks arise. Economic entities and natural persons thus increasingly recognise the need for insurance cover against effects of random events, natural disasters or accidents. Such cover is ensured by different insurance offered by insurance undertakings and companies. Insurance may therefore be defined as a “multi-regulator of national economy development processes distorted by random events, natural disasters and accidents” (Banasiński, 1996, p. 16). Its operation is based on the (direct or indirect) distribution of regulatory costs on predetermined units using this tool. It should also be noted that insurance is a form of compensating for random damage with respect to natural persons and economic units representing various sectors. This distribution is particularly important for insurance policy-making by insurance businesses. State policy, which may

significantly influence the structure of the insurance portfolio or the planning of the economy's demand for assurance, is also important for the development of insurance. A special role of the State in this area is recognised in the agricultural sector to which both compulsory and voluntary insurance is addressed. The State's function in agricultural insurance is not only to regulate and control, but primarily to protect. This applies to the State-subsidised insurance of agricultural crops and livestock where the State is somewhat a safety buffer for both insurance undertakings and farmers.

The aim of this study is to assess the experience to date in implementing the subsidised insurance of agricultural crops and livestock in Poland in terms of opportunities for its further development (popularisation).

The legal status was analysed based on the applicable Polish insurance provisions and EU legislation on the operation of risk management tools recommended by the CAP. A statistical analysis was developed based on FADN (Farm Accountancy Data Network) insurance data and MARD

(Ministry of Agriculture and Rural Development) data compiled based on budget acts. All the data covered 2009-2014. Research covered a sample of about 12 thousand farms being a FADN farm sample. The data collected were assessed based on selected agricultural insurance business ratios, i.e. the damage incidence ratio and the financial loss ratio<sup>1</sup>. The data collected were presented in tables and figures.

### **Characteristics of the business insurance scheme in Polish agriculture**

Providing cover against risk effects allows for uninterrupted agricultural activity which is important in view of ongoing agricultural developments. There is currently an increase in risk due to, among others: reduced market intervention and an announced reduction in subsidies, the opening of EU markets leading to their destabilisation, increased risks of animal disease (avian influenza, BSE) and plant disease (varroasis) epidemics as a result of trade liberalisation or more severe extreme weather events resulting from climate change.

The gravity of the problem may be indicated by risk consequences reflected in e.g. large agricultural production losses or farmers' investment reluctance due to their fear of increasing risk. The problem is aggravated by the fact that there are no risk management instruments, which would be appropriate to the scale of risks, in Poland, but also in many EU Member States. Therefore, numerous EU Member States are currently looking for opportunities and ways to solve the problem.

Having reviewed Polish legislation on risk management instruments, it may be concluded that there is a severe shortage in new agriculture-oriented solutions, which could effectively mitigate risk effects in the sector, including index

insurance, mutual funds or income stabilisation funds recommended as part of a safety net by the European Commission. Having reviewed the insurance scheme in Polish agriculture, however, it may be concluded that insurance is the most common form of risk mitigation in the sector.

Under the applicable law, three types of insurance are compulsory for farmers:

- insurance of farm buildings against fire and other random events, such as hurricane, flood, flooding, hail, snowfall, torrential rain, etc. [Act on Compulsory Insurance..., 2003, Article 4(3)];

- third party insurance (the so-called TPI of farmers) in respect of running a farm. This insurance provides cover for not only a party liable for damage, but also an injured party. It is worth noting that such insurance is compulsory not only for a farm owner, but also for a farm tenant and user [Act on Compulsory Insurance..., 2003, Article 4(2)];

- State-subsidised insurance of agricultural crops and livestock. This instrument covers the insurance of at least 50% of the farm's UAA against the risk of damage caused by hurricane, flood, torrential rain, hail, lightning, landslide, avalanche, drought, adverse effects of wintering, spring frosts and emergency slaughter [Act on insurance of agricultural crops..., 2005, Article 3(2)]. Other risk groups fall beyond the scope of compulsory insurance and may be insured on a commercial basis as part of the voluntary insurance of crops and livestock.

Besides compulsory insurance, the Polish insurance scheme includes voluntary, non-compulsory insurance which is taken out not because of law, but based on a voluntary contract between a farmer and an insurance undertaking. Voluntary agricultural insurance includes: the insurance of movable property, breeding and pond rearing, a forest stand and permanent crops as well as the insurance of crops and livestock not covered by compulsory insurance.

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<sup>1</sup> The accident (damage) incidence ratio is the ratio of the number of claim settlements to the number of concluded policies. However, the financial loss ratio is the ratio of the total amount of settled claims to the total amount of paid premiums.

## Polish experience in implementing the State-subsidised insurance of agricultural crops and livestock

The insurance of crops and livestock has a long tradition in Poland. Nevertheless, the experience to date in its implementation indicates the need for certain changes in the scheme to popularise such insurance. This is confirmed by research conducted by many researchers, who deal with the issue, pointing out various factors limiting its purchase, including: the price of a policy (Hęćka, and Łyskawa, 2013), a subjective (low-level) assessment of risks and the amount of possible losses by farmers (Janowicz-Lomott and Łyskawa, 2016), claim settlement problems (Pawłowska-Tyszko, 2011).

Until 1990, most agricultural insurance was statutory (including the insurance of crops and livestock), thus making it necessary to pay a fixed pecuniary obligation in the form of a premium arbitrarily fixed by State authorities without the need for concluding an insurance contract – the so-called *ex lege* insurance. Agricultural crops (cereals, fodder plants intended for animal feed, potatoes, sugar beets as well as meadows and pastures) were subject to the insurance obligation which covered, among others, the risk of hail, flood, fire and precipitation. Compulsory insurance was extended to livestock and covered the death of cows, bulls, horses aged 2+ and pigs of over 25 kg in weight. Until 1990, the insurance obligation applied to farms with an area of over 0.5 ha. In 1990, the introduction of the Act on insurance business brought significant, not only for agriculture, changes in the Polish insurance scheme. The Act created a favourable environment for the development of free competition and enabled the privatisation of existing insurance companies. Its provisions formed a basis for opting out of statutory agricultural insurance which was replaced with voluntary insurance (since 1990 until now), including with subsidised insurance since 2005. In 2008, subsidised insurance became compulsory, but only 50% of cultivated crops were

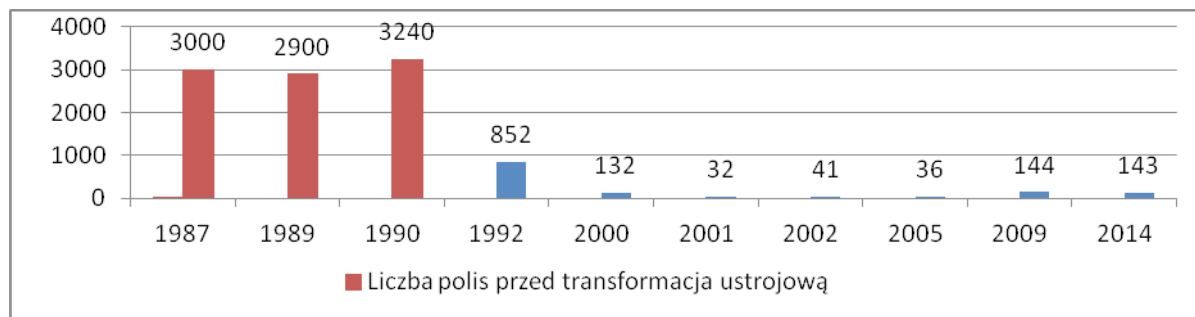
subject to the insurance obligation. Moreover, no clear rules for enforcing the obligation have been developed to date and thus not all farms discharge it. Under an amendment to the Act, the area of the farm covered by the insurance obligation was increased to 1 ha.

Once the obligation to insure crops and animals was lifted in the early 90s, interest in taking out such insurance policies on farms decreased as shown in Figure 1.

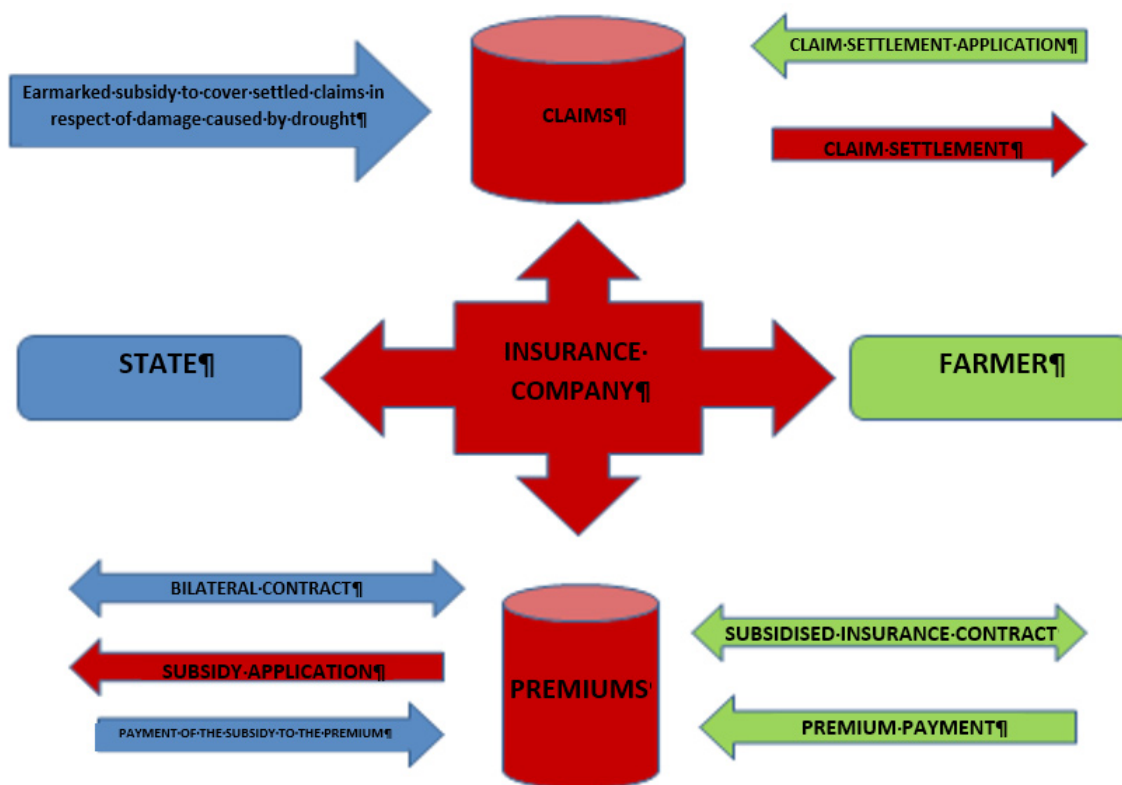
About 3 million insurance policies were sold until 1990; the number dropped drastically after 1990 from 852 thousand in 1992 to the lowest level in the analysed period, i.e. 32 thousand in 2001. As a result, farms lacked adequate insurance cover which significantly increased the risk of agricultural activity, particularly due to intensifying adverse weather changes (flood of 1997, droughts of 1992 and 2006, annual rainstorms with hail). Therefore, the situation forced policymakers to use *ad hoc* aid and became an impetus for introducing State-subsidised insurance. Reasons for introducing State-subsidised insurance include:

- a significant increase in costs of voluntary insurance cover after 1990,
- high intensity of adverse weather conditions,
- an increase in State expenditures to help farmers in case of disaster events, the so-called *ad hoc* aid, and an attempt to rationalise State budget expenditures allocated for *ad hoc* aid,
- popularisation of voluntary insurance cover,
- inclusion of subsidised insurance in risk management tools recommended by the European Commission.

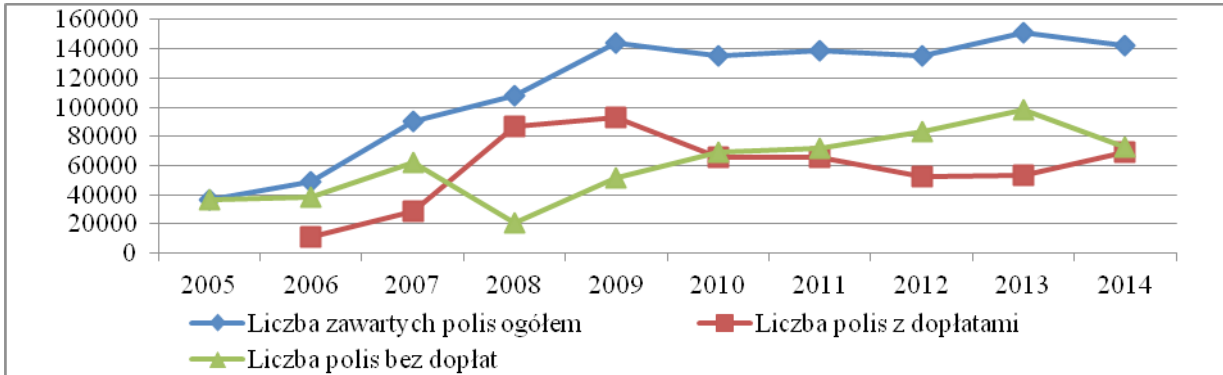
Subsidised insurance was introduced to Polish agriculture in 7 July 2005 by virtue of the Act on insurance of agricultural crops and livestock [Act on insurance... 2005]. In accordance with the Act, subsidies to premiums in respect of insurance contracts are financed from the State budget funds set forth in Section 32 (Agriculture) of the Budget Act. Furthermore, the State provided for



**Figure 1.** Total number of crop and livestock insurance policies in Poland in 1987-2014 ('000)  
 Source: own study based on Statistical Yearbooks of the Central Statistical Office, Warsaw 1986-2009 and data from reports of insurance undertakings submitted to the MARD, Warsaw 2009-2014



**Figure 2.** Schematic flow of subsidies to subsidised crop and livestock insurance premiums  
 Source: own study based on the Act on insurance of agricultural crops and livestock (2005).



**Figure 3.** Number of concluded crop and livestock insurance policies in 2005-2014

Source: own study based on 2005-2016 data from the Polish Supervision Authority and the MARD.

**Table 1.** Comparison of crop and livestock damage incidence and insurance loss ratios in 2009-2014

Source: own study based on FADN data, 2009-2014.

Specification	Research period					
	2009	2010	2011	2012	2013	2014
Crop accident (damage) incidence ratio (number of claims)	11.7	6.81	18.32	30.77	4.1	10.39
Crop loss ratio (%)	151.71	43.83	140.17	235.54	24.77	45.95
Livestock accident (damage) incidence ratio (number of claims)	5.79	3.93	5.30	4.92	2.46	2.88
Livestock insurance loss ratio (%)	25.30	19.96	18.84	22.41	9.21	32.30

an earmarked subsidy in the Act to cover some claims in respect of damage caused by drought. These expenditures are also covered from State budget funds under Section 83 (Provisions). The funds allocated for this purpose may be mobilised after concluding a subsidy contract by the insurance undertaking with the minister responsible for agriculture. Once companies, which may conclude State subsidised insurance contracts, are selected, the farmer submits an application for an insurance contract to a selected insurance undertaking. The number of subsidised insurance contracts concluded by farmers with companies is limited by the amount of subsidies granted to a

specific insurance undertaking. Once the contracts between the farmer and the insurance company are concluded, the farmer pays some part of his/her premium and the minister responsible for agriculture pays the subsidy. Subsidies are therefore a part of insurance premiums due to insurance undertakings in respect of concluded insurance contracts. The insurance undertaking receives subsidies once a quarter based on an application it submitted. Insurance undertakings, which concluded subsidy contracts and/or compulsory crop insurance contracts and which entered into a co-insurance agreement, are also entitled to the earmarked subsidy to cover some claims of farm-

**Table 2.** Balance of flows of crop and livestock insurance premiums and claims in 2009-2014

Source: own study based on 2009-2014 data from Annual Reports of the Polish Financial Supervision Authority and the Budget Act.

Research years Specification	2009	2010	2011	2012	2013	2014
Gross written premium in PLN '000 (paid by the farmer)	94 213	113 207	165 207	181 791	163 734	164 110
State subsidies to premiums	131 139	96 679	126 141	162 412	164 407	161 363
Collected premiums in total	225 352	209 886	291 348	344 203	328 141	325 473
Claims	77 410	65 113	202 192	472 663	83 736	115 477
Subsidies to claims in respect of drought	150 000	100 000	100 000	68 641	80 000	99 500
Claims in total	227 410	165 113	302 192	541 304	163 736	214 977
Balance of premiums and claims in total	- 2 058	44 773	- 10 844	- 197 101	164 405	110 496

ers settled in respect of losses caused by drought. The subsidy constitutes 60% of the difference between the total amount of claims settled in respect of drought and the amount representing 90% of premiums paid in case of damage caused by drought. If the amount planned for this purpose is not used, it may be transferred to a financial envelope for subsidies to crop and livestock insurance premiums in a given year. Figure 2 presents a schematic flow of subsidies to subsidised crop and livestock insurance premiums.

The legislator intended to popularise subsidised policies, hence the Act was amended on several occasions to tailor it to needs of all stakeholders (farmers, insurance undertakings and the State). The most important changes in this area include:

- extension of the material scope of and an increase in the sum of insurance and the amount of the subsidy (amendment to the Act of 27 April 2006 and 7 March 2007).
- since 1 July 2008, the compulsory insurance of crops against the risk of drought, hail, flood, adverse effects of wintering and spring frosts for at least 50% of the farm's UAA which

received direct payments to agricultural land within the meaning of provisions on agricultural land payments and the separate sugar payment. The compulsory insurance of agricultural crops stems from EU requirements.

- since 1 January 2010, the limitation of State aid in case of a disaster to half the rate of aid if at least half of crops lack insurance cover. This limitation was introduced in all 27 EU Member States [Regulation (EC)..., 2006].
- launching of work on draft blanket insurance for farmers (including the insurance of crops and livestock) – July 2016.

These activities contributed significantly to the popularisation of such insurance as confirmed by data presented in Figure 3. It should be noted that more and more such policies are taken out every year. It is worth noting that many farmers choose to take out such insurance without State subsidies. In 2010-2013, the number of unsubsidised policies exceeded the number of taken out subsidised policies as shown in Figure 3.

The reason for this may be the fact that the insurance of crops and livestock covers primarily risk factors with the lowest insurance costs or that insurance undertakings may have no appropriate offer (this applies particularly to the risk of drought). This is also confirmed by the experience of insurers who, in the form of subsidised insurance the scope of which is set out by statute, offer only policies covering selected risk factors. This means that real tariff rates are often higher than allowed by statute (5-6% of the sum of insurance) and thus the farmer may insure only certain risk factors as part of insurance covered by statute. A certain problem thus arises, making insurance taken out on a fully commercial basis the only alternative to selected types of risk. Despite statutory amendments in the area of subsidised insurance, its potential for stabilising the income situation of farmers remains untapped. The problem may be aggravated by using ad hoc aid for dealing with effects of natural disasters. This task is financed from the special-purpose reserve of the State Treasury. In 2009-2014, about PLN 1.2-1.4 billion was allocated for this purpose [Budget Act, 2009-2014], i.e. 6 times the subsidy allocated for premiums and claims in respect of the insurance of crops and livestock. Research based on FADN data revealed that only 487 farms, i.e. less than 1% of individual FADN database entities, benefited from ad hoc aid in 2009-2014. Nevertheless, the use of ad hoc aid may limit demand for insurance policies, primarily in small farms (1-20 ha of UAA) which, as shown by FADN data, are the largest beneficiaries of such aid.

Having analysed (both subsidised and unsubsidised) crop and livestock insurance loss ratios, it may be concluded that the ratios varied in the analysed period as shown in Table 1.

The highest ratio was recorded in 2009, 2011 and 2012 with respect to crop insurance. The loss ratio in this period ranged between 140% in 2011 and 235% in 2009. This means that insurance may be unprofitable for insurance undertakings in times of intensifying adverse weather changes as confirmed by data included in Table 2. In 2009, 2011

and 2012, the amount of settled claims exceeded the value of collected premiums. In 2009, claims exceeded premiums by only 0.8%, in 2011 – by 3.8%, while in 2012 – by 57.3%. Taking the perspective of the entire research period (2009-2014), however, the balance of premiums and claims is positive, i.e. PLN 109 671 thousand, which means that the value of collected premiums exceeded the total amount of settled claims by about 7%. It should be noted, however, that the unprofitability of insurance undertakings in years of intensifying adverse weather events may discourage insurance undertakings from concluding such contracts (this applies particularly to crop insurance policies) and thus slow down their popularisation process.

Having analysed the damage incidence ratio, it may be concluded that it was relatively high, in particular with respect to crop insurance, i.e. from 11 to over 30 claims per 100 concluded contracts. This means that, in extreme cases, about 30% of farmers suffered damage in case of adverse events which disturbed the normal course of economic activity. Against this background, the ratio with respect to livestock insurance was much more favourable and ranged between about 2.5 and about 6 events per 100 concluded contracts. If we assume that the number of concluded crop and livestock insurance policies has remained almost unchanged since 2009 (about 140-150 thousand policies), the foregoing may indicate an increase in weather risk in the analysed period and hence the need for popularising such insurance or offering other alternative tools providing cover against its effects.

## **CONCLUSIONS**

The research revealed the need for popularising subsidised insurance, particularly crop insurance. Analyses indicate that many farms in Poland lack insurance cover. In the analysed period, about 140-150 thousand policies were taken out.

In accordance with the analyses, the fact that ad hoc aid, which is mobilised in case of emergencies, operates in parallel with the insurance offer,



and the mismatch between the offer and needs of farmers, particularly with respect to maximum tariff rates, hinder the popularisation of insurance among farmers. Taking the perspective of insurance undertakings, demand-limiting factors should include the short-term unprofitability of insurance and its high loss ratio.

Crop and livestock insurance may be developed if: currently offered products are tailored to needs of farmers and the changing environment, farmers become more aware of the legitimacy of and the need for taking such activities, tariff rates and the amount of premiums are tailored to subsidies so as to ensure that farmers are provided with cover against different types of risk, ad hoc aid is limited.

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