



INSTITUTE OF AGRICULTURAL
AND FOOD ECONOMICS
NATIONAL RESEARCH INSTITUTE



Current status and prospects of development of the tax system and insurance scheme of the Polish agriculture

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of development of the tax
system and insurance scheme
of the Polish agriculture**



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**THE POLISH AND THE EU AGRICULTURES 2020+
CHALLENGES, CHANCES, THREATS, PROPOSALS**

Warsaw 2015

The paper was prepared under the research subject **Financial and fiscal factors in the improvement of efficiency, sustainability and competitiveness of the Polish agriculture**, in the task: *Taxes, quasi-taxes, transfers and social and farm insurance, instruments of risk management in ensuring competitiveness, financial stability and social security in agriculture and rural areas.*

The aim of study is to assess the current and postulated solutions of the tax system and insurance scheme in the Polish agriculture by pointing to the consequences of the adopted design for realisation of the basic functions of these instruments.

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Introduction

The nature of agricultural production makes it unpredictable, which, given the lack of special programs restricting the risk accompanying the conducted operations, leads to the decrease therein. Nowadays, more than at any other time in history, the agricultural sector functions in the conditions of high competitiveness, which fosters structural changes faced by agriculture all around the world. Poland has many farms, which do not multiply their capital, and the production capacities and capital intensity of which are too weak to function on the competitive market. Furthermore, farms generate increasingly lower incomes, to a high extent financed from external subsidies. This situation creates some concerns with regard to their future. Doubts also arise regarding whether the production capacities of agricultural farms are sufficient to maintain the industry.

In such a situation, special fiscal and parafiscal solutions are also targeted at agriculture, since application of generally binding regulations to the agricultural sector could cause additional difficulties. However, it should be noted that, in the recent years, the Polish agricultural sector underwent a number of favourable structural changes. In the context of these transformations, it seems to be necessary to review the tax and insurance system in agriculture, so that it would reflect and fit the present conditions of conduct of agricultural activities. Selection of a proper form of taxation of agricultural activities is an important problem, since Polish agricultural holdings, as the only group of economic entities, are exempted from the personal income tax. Such a situation leads to many social tensions, due to the fact that the present solutions infringe the principle of justice and commonness of taxation. In the search for new solutions, it may be useful to take a closer look at those, which already exist, as it will allow for using the already verified structures when building the new taxation system for agriculture. The overview of literature related to the taxation system for agriculture in EU Member States suggests that in seven countries agriculture is subject to special, preferential fiscal tools, which usually do not require income calculations, but are based on simplified accounting. In some countries, these privileges apply only to poor farmers. The assessment of the existing fiscal solutions indicates that there are no specific grounds to decide whether farmers should be taxed under the income tax. On the other hand, numerous reasons suggest that this group should be provided with special treatment (due to, i.a.: income volatility in agriculture, impact of natural and climatic conditions, low rate of return).

From the point of view of farm safety, risk management instruments are an extremely important issue. The growing changes occurring within agriculture of

the European Union – among others, the announced subsidy reduction, the decrease in market interventions and the growing scale of climatic and epidemiological hazards – will in the near future require a well-developed offer of risk management instruments. Therefore, the European Commission plans on introducing supplementary tools to the existing payment system, as well as market management instruments, including comprehensive insurance against natural disasters, mutual investment fund, income stabilisation instruments and further development of subsidised insurance, integrated with other tools.

The whole essence of the issue presented by us can be summarised as the need to introduce changes in the agricultural tax and insurance system in Poland. A question arises, whether the legislation drafts, pertaining to changes in the tax and insurance system, proposed by various entities (also governmental), should be worked on, and what will be the effects of their introduction for the state budget, the sector and the farmers themselves?

The purpose of the report is to assess the binding and the proposed tax and insurance solutions in the Polish agriculture by indicating the consequences of the adopted structures for implementation of the basic functions of these instruments. The paper is limited to evaluation of the macroeconomic function of fiscal and social effectiveness, including the postulate for taxation justice. The authors of this report also intended to assess the simplified forms of accounting used for the purposes of tax and insurance returns in the selected Member States of the European Union. A risk management system evaluation in the Polish agriculture was also conducted, in terms of the possibility to introduce changes favourable for the development and financial stability of farms.

The paper has been divided into five chapters. Chapter One focuses on historical developments of the taxation system for agriculture in Poland. The authors are searching for arguments supporting the need for taxes in agriculture, their role, as well as fiscal, stimulating and redistributing significance. Detailed considerations focus on analysis and critical evaluation of the currently binding fiscal solutions in agriculture.

Chapter Two includes a substantive assessment of the benefits of application of simplified methods of income calculation. The analysis covers simplified agriculture taxation principles in France and Germany, with particular attention paid to the nature, type and effectiveness of the applied simplifications.

Chapter Three focused on evaluation of the current proposals of changes in the income taxation system in agriculture. In order to assess the proposed solutions, particular attention has been paid to the proposal of the Ministry of Finance, the assumptions of which have been analysed in terms of internal and ex-

ternal justice, economic efficiency, competitiveness of agricultural farms and sustainability of the sector.

Chapter Four refers to the assessment of the currently binding insurance system in agriculture. This chapter focuses on the analysis of the optimal insurance system standards in agriculture, as well as the effect of the adopted solutions on development of this sector. The deliberations included in this chapter concern evaluation of the currently binding and the proposed regulations in the light of financial stability of the state, competitiveness of the sector, as well as economic efficiency of farms.

Chapter Five constitutes a study of the discussion about the need for the farms to protect themselves against various kinds of risk (in particular weather risk). Review has been carried out of the binding and the proposed statutory regulations concerning business insurance in agriculture. Special attention has been paid to the assessment of the impact of the existing and the proposed solutions on sustainable development of agriculture, including social, economic, environmental, as well as institutional and political order.

The book presents the legislation existed on 31 December 2015.

1. Agriculture taxation in Poland

1.1. Historical developments of the taxation system for agriculture

Agriculture has been always treated as an important economy sector, constituting a guarantee of self-sufficiency and food security of a given country. It is also the base for the development of the agri-food industry and, in the recent years, the supplier of raw energy materials and energy. Taking into consideration the importance of agriculture for the economy, people have always wondered how to take over the surplus produced in agricultural economies, which has been expressed in the particular fiscal structures.

Between the 10th and 13th century, the income of the Polish state was based on the so-called *ius ducale*, providing that any benefits had the form of levies paid in kind, which only later turned into cash and personal benefits. During that time, several types of taxes could be distinguished, covering various social groups and owned property. In agriculture, the binding tax had the form of a levy from a rustic farm¹.

In the 11th century and at the beginning of the 12th century, rustic farms were obliged to pay levies commonly referred to as *podymne*, later *poradlne* (in Mazovia and Kujawy – *podworne*), as they were paid in proportion to the number of shovel ploughs (pol. *radlo*) used in the farm. The levy was paid in pigs, then in cattle and sheep, and finally – in cereals. A primitive form of a tax voucher, proving payment of due levies, was the so-called *narzac*. Some farms were obliged to pay the so-called *danina*, namely levies paid in the form of barrels of honey. Since the times of the King Casimir the Great, taxes have started to be paid in cash.

In the 14th and 15th centuries, due to the granting of many privileges (i.a. exemption from tax payment), the main taxpayers for the nobility and clergy included peasants from villages belonging to the king, nobility and clergy. They paid the so-called *lanowy* tax (*poradlny*), the amount of which depended on the needs of the state and the type of the taxpayer. It should be noted that, in the 14th and the 17th century, the tax system that existed in Poland was not identical for all states, and therefore did not execute the idea of commonness and taxation justice. The group, which, regardless of legal conditions, was not fiscally privileged, mainly included owners of rustic farms or land estate.

In the middle of the 17th century, the *lanowy* tax, due to the financial crisis of the state, was replaced with the *podymny* tax, which was subsequently replaced with the so-called *pogłówny* tax, per head. These taxes already covered

¹ History of taxes in Poland, www.wikipedia.org (10. 10. 2015).

most social groups. It should be noted that these taxes were property taxes and in no way referred to the taxpayer's income.

The prototype of income (direct) taxes was the so-called *ofiara wieczysta* (referring to income as the tax base), which was introduced in 1789 and covered the nobility and the clergy. On the other hand, in the process of unification of direct taxes, fundamental importance can be attributed to the Act of 16 July 1920 on the National Income Tax. This Act did not cover, among others, agricultural holdings with the total area below 15 ha UAA, which was a result of taking into consideration in its structure the so-called poverty line, entitling to tax exemptions. It should be added that most individual agricultural holdings were exempted from this tax. In the years 1919-1938, the average area of an individual farm, created as part of subdivision, amounted to 9.32 ha². Agricultural holdings were also not subject to the so-called state business tax, which was introduced by the Act of 15 July 1925. Such a situation prevailed until the beginning of 1945, before which material benefits were the basic form of fiscal levies charged from agricultural holdings.

New regulations, governing and unifying the land tax principles across the whole country, were introduced on 13 April 1945, on the basis of the Decree on the Reform of the Local Tax System³. This taxation covered any agricultural land (apart from exclusions), and the incomes generated by the above were handed over to local government units. The amount of the individual encumbrances was determined, first of all, by the area of a farm given in hectares, as well as other factors, to a smaller extent, such as: type of crops, land fertility, land development and the level of war damages. Tax rates had the form of fixed amounts (PLN 50 per 1 ha of arable land, meadows, gardens and orchards, and 5 PLN from other land), and increased along with the growth in the number of hectares of a farm (by 10, 25 and 50%). The binding rates were relatively low and did not execute the function assigned thereto by law, namely reduction of the number of farms with large surface and increasing the state revenues. Furthermore, the structure of this tax still referred to the property of the taxpayer and was not related to the payment capacity of a farm or its profitability. Thus, the Act was not actively applied in transformation of the agrarian structure and of the state, and was thoroughly changed in 1946.

² F. Kapusta, *Geneza i rola gospodarstw rodzinnych w rolnictwie polskim (The origin and role of family farms in Polish agriculture)*, *Ekonomia Economics* 2 (23), Publishing House of the Wrocław University of Economics, Wrocław 2013, p. 154

³ *Decree on the Reform of the Local Tax System*, *Journal of Laws Dz.U.*, 1945, No. 13, item 73.

The subject literature emphasises that the surplus product produced in agricultural holdings may be taken over by the state in various ways⁴: through taxes and other financial encumbrances, or indirectly by decreasing purchase prices of agricultural products. The second way was most often chosen in the times of command-and-quota economy⁵, which resulted in undercutting the production profitability and worsening of the problem of low profitability of farms. This way, the surplus, which could be generated in agriculture, was generated in other sectors of national economy and taken over there, in the form of taxes. Such a situation fostered building of fiscal systems, which to a small extent burdened agricultural holdings and were not related to their profitableness. Therefore, from the year 1946 until 1985, different forms of taxation of agriculture existed in that sector, such as: municipal land tax (1946-1950) and land tax (1950-1984), the size of which depended on the revenue capacity estimated from 1 hectare of arable land.

The basis for taxation in the municipal land tax was the estimated revenue, expressed in quintals of rye, which covered all benefits from a farm from the year before the fiscal year. In the period of 1946-1949, the tax rate for individual farms was diverse – it amounted to 2 to 18% and was growing along with the growth in the revenue capacity. Simultaneously with this tax, the so-called material benefits were collected, therefore, the total burden was high, especially for large farms, which significantly restricted their development. Such a strong tax progression was a result of the legislator's intentions, whose goal was to eliminate medium-sized and large agricultural holdings. According to R.I. Dzimianowicz, in the period of 1947-1949, as compared to previous years, there was a significant increase in the tax rate in agriculture, which was a result of the approximation of estimation standards to the real income. As a result of these actions, the ratio of the amount of land tax to pure agricultural production increased from 4% in 1947 to 10.2% in 1949⁶.

In the case of land tax, introduced by the Act of 1950⁷, the tax basis was the total output of agricultural farms expressed in zlotys, both from plant production, as well as animal production (also from special agricultural production branches). This tax was assessed according to a fixed or flexible tax rate, given

⁴ R. Wierzba, *Finanse przedsiębiorstw rolnych (Finances of agricultural companies)*, PWE, Warsaw 1988, p. 114.

⁵ A. Woś, *Ekonomiczne narzędzia sterowania rolnictwem (Economic tools of agriculture control)*, PWN, Warsaw 1985, p. 139.

⁶ R.I. Dzimianowicz, *Efektywność opodatkowania rolnictwa (Efficiency of agriculture taxation)*, Publishing House of the Białystok University, Warsaw 2007, p. 283.

⁷ *Act on Land Tax, Journal of Laws Dz.U. No. 27, item 50.*

that the flexible rate, with its upper limit amounting to 25%, applied to individual agricultural holdings, while state farms were covered by the fixed rate in the amount of 10%. Reliefs on children were also applied. Like in the previous period, this tax was progressive and burdened mainly large farms, which virtually restricted their development possibilities⁸. The land tax in force in 1950-1956 implemented the intentions of the previous period, aimed at transforming the agricultural structure in Poland, and led to economic decline of large, highly productive agricultural farms.

In the subsequent years (1957-1971), this tax was altered many times, as a result of strong criticism of collective forms of management and the need to increase agricultural production. The main directions of changes included, among others, mitigation of progression (reduction in the highest land tax rates), introduction of instruments stimulating growth in agricultural production (reliefs and exemptions addressed to farms with lower quality soil) and agricultural investments (investment reliefs).

The largest changes occurred in 1972 and related to the tax basis, which, after the alterations, was the estimated income of a farm and the area of arable land expressed in hectares and comparative fiscal hectares. Tax rates for the tax basis calculated according to income were expressed as a percentage, while for the tax basis calculated according to the surface area – as an amount. Such a solution favoured small agricultural holdings, which paid the tax calculated according to the lowest tax rate and did not pay one of the two parts of this tax, the so-called specific part. Introduction of new solutions was supposed to alleviate the differences occurring in income taxation for agricultural holdings, especially between large and small farms. The new tax structure clearly strengthened the disproportions between the amount of the paid tax and the amount of actual income, which, in consequence, resulted in a systematic reduction in the ratio of land tax to pure production.

The previous considerations indicate that the discussed taxes did not execute their basic functions. It was emphasised by E. Chyrża, who noticed that the agricultural tax in force before 1985, due to relatively low assessment and defective structure, did not realise the tasks of this instrument, especially its stimulating and regulatory function⁹. It was also emphasised by R. Wierzba, who noticed the

⁸ A. Hanusz, *Polityka podatkowa w zakresie różnicowania obciążeń dochodów rolniczych w Polsce (Tax policy with regard to differentiation of burdens on agricultural income in Poland)*, University of Maria Curie-Skłodowska, Lublin 1996, p. 90.

⁹ E. Chyrża, *Regulacyjne i stymulacyjne rozwiązania w konstrukcji podatku rolnego (Regulatory and stimulating solutions in the structure of agricultural tax)*, Annales

lack of stimulating impact of these taxes and indicated that, in order for the taxes to serve as a stimuli, a situation, in which purchase prices of agricultural products are high and, at the same time, the taxes are high would be significantly more beneficial¹⁰. The analyses conducted thereby proved that low prices of agricultural products lead to low profitability of agricultural production, which generates a number of problems, such as:

- limited possibilities of taking over part of financial accumulation from farming,
- lack of possibility of taking over the land rent I and II through the agricultural tax¹¹.

Such a situation limited the possibilities of applying agricultural income tax and resulted in both negative (subsidising of agriculture by passing the tax to other social groups and lack of participation of this sector in social economic costs), as well as positive external effects (lack of taxes was a compensation for providing benefits to the society in the form of lower market prices).

As a result of the accumulating problems, in the years 1983-1984, a new concept of agricultural tax appeared, which involved assigning an economic function to this instrument, which was reflected in a clear – as compared to the previous period – growth in the burdens related thereto. The legislator intended to encourage agricultural producers to use the land to the maximum capacity, stimulate farm modernisation processes, foster growth in agricultural production, reduce disproportions in income of the farming population, as well as standardise tax burdens of all agricultural sectors¹². This tax replaced the numerous burdens functioning in the past, which were diverse in terms of structure and to a small extent executed the functions assigned thereto in theory.

The agricultural tax was introduced by the Act of 1985¹³ and consisted of two separate burdens: agricultural land tax and agricultural income tax on special production types, given that the single taxation principle was in force. The struc-

Universitatis Mariae Curie-Skłodowska, Sectio H, Oeconomia 26, vol. XXVI, 8, Lublin 1992, p. 141.

¹⁰ R. Wierzba, *Finanse...* op. cit., p. 115.

¹¹ *Ibidem* op. cit., p. 115.

¹² D. Jasińska, *Podatek rolny i inne obciążenia rolnictwa indywidualnego w latach 1985-1986 (Agricultural tax and other burdens on individual farming in 1985-1986)*, Institute of Finance, Warsaw 1989, p. 5; J.St. Zegar (academic supervision), *System podatku rolnego (Zarys koncepcji) (Agricultural Tax System (Outline of the concept))*, IAFE, Warsaw 1988, p. 3, R. Wierzba, *Finanse...* op. cit., p. 121.

¹³ *Act on Agricultural Tax, Journal of Laws Dz.U. of 1984, No. 52, item 268. Act of 15 November 1984*

ture of agricultural land tax was linear, meaning that each hectare of land located in a given tax region had the same tax burden. The basis for land taxation was the number of reference hectares agreed on the basis of the surface area, types, classes of arable lands, as well as location in one of the four tax regions. The statutory agricultural tax rate, in the amount of 2.5 quintals of rye per 1 comparative fiscal hectare (introduced in 1990) was reached gradually, from the rate of 1.5 quintals of rye in 1995, through 2 quintals of rye in 1986. The adopted taxation method resulted in relative reduction in the tax burden of commercial farms with high production of goods, as well as increase in the tax burden of small agricultural holdings. Such a solution was intended by the legislator, and was supposed to promote both production growth per 1 hectare, as well as improvement in the area structure¹⁴. The second part of the agricultural tax was income tax from special production types. The basis for this tax was the income, calculated on the basis of approximate standards from a given crop area or livestock units. Applying the estimation method to determination of the amount of income was aimed at developing economic incentives, encouraging agricultural producers to reduce production costs and increase production volume from an area unit. Farms could also choose the method of income assessment, between the estimation method and the accounting method, in which the actual income was calculated on the basis of accounting records. In 1992, income from special production types was excluded from the Act on Agricultural Tax and included in the Act on Income Tax.

To sum up the above considerations, it should be noted that agricultural holdings underwent a number of changes with regard to taxation of their activities, starting from material benefits (before 1945), through property (land) taxes (in 1945-1946), and then various income structures (estimated) (in 1947-1972), as well as income and property structures (since 1972 until now). However, it is significant for further analysis that none of these structures takes account of the actual agricultural income of a farm or the actual revenue. One of the main reasons for accepting such solutions was the lack of accounting records in agricultural holdings, which would allow for calculating tax on the basis of real data. This is the case even today. Furthermore, agricultural taxes burdened agricultural holdings to a small degree. Considering the weight of tax burdens, the subject literature distinguishes several periods in the evolution of the taxation system for

¹⁴ E. Chyrża, *Regulacyjne i stymulacyjne rozwiązania...* op. cit. p. 142.

agriculture¹⁵, which can be divided into: periods of relatively low tax burdens (1945-1949; 1957-1962; 1963-1983, 1984-1989); the period of excessive taxes for the group of large farms (1950-1956), as well as the period of high taxes on special agriculture production types (1984-1989). The limited possibilities of realisation of economic and social purposes by means of the concerned tax structures also create doubts. The literature review indicates that taxes were used mainly to change the area structure of farms and transform the structure of Polish agriculture, while at the same time executing fiscal and redistribution goals to a small extent.

The above considerations suggest that the lack of fiscal solutions based on income of individual agricultural farms in Poland is conditioned historically, as a derivative of the role of agriculture in the economy, the policy of the state towards this sector, as well as implementation of the basic functions of the state by means of taxes.

1.2. Review of the binding regulations regarding income tax in agriculture – the agricultural tax and the tax on special types of agricultural production

1.2.1. Agricultural tax

Agricultural tax is the most important tax burden of Polish agricultural farms, which survived the structural transformation and has functioned in a practically unchanged form since 1985 until the present day. Its structure, despite numerous amendments of the act, has been modified only to a small extent, which will be discussed in more detail in this part of the study. Any changes in the agricultural tax were aimed at more complete usage of this instrument in the implementation of its basic functions, as well as at optimisation of tax burdens.

The agricultural tax was introduced by the Act of 15 November 1994¹⁶. The structure of this tax was based on the natural criterion, namely the farm area, or

¹⁵ R. Dziemianowicz, *Efektywność systemu...*, p. 277, E. Grzelak, *Polityka agrarna PRL (Agrarian policy of the People's Republic of Poland)*, PWN, Warsaw 1980, p. 265, W. J. Ciechomski, *Interwencjonizm państwowy w rolnictwie i obrocie rolnym (State interventionism in agriculture and trade of agricultural goods)*, University of Economics in Poznań, Poznań 1997, p. 106. .

¹⁶ *Act of 15 November 1994 on Agricultural Tax* (Journal of Laws Dz.U. of 1993, No. 94, item 431, as amended).

rather its conventional unit – comparative fiscal hectare. According to M. Podstawka¹⁷, it reflects the utility value of agricultural land.

Significant changes in the structure of this tax have been adopted in 2003 and related to the subject of taxation. Until 2003, the land of the farm constituted the subject of taxation¹⁸, while land classified as agricultural, but not constituting a farm, as defined by the Act, were covered by property tax. Provisions of the Act of 2003 introduced the requirement of taxing all arable land under agricultural tax, regardless of the surface area, profitability and location. This provision was favourable for large farm owners not meeting the criterion of the area standard, who had been previously obliged to pay high property taxes. The taxation was based on the amount of comparative fiscal hectares, which was supposed to reflect potential possibilities of generating income from a farm, which is determined by such structural elements as surface area, type and class of land, as well as tax region. Such assumption was criticised by R. Mastalski, who believed that it was impossible to determine on the basis of these factors to what extent the estimated income reflected the actual farm income¹⁹. On the other hand, M. Podstawka added that the comparative fiscal hectare, despite the fact that it enables determination of utility value of agricultural land, is hardly precise, contains only one profit-making equipment element of a farm, and is not very accurate in characterising income possibilities of a farm²⁰. Therefore, the agricultural tax is classified by some economists as tax related directly to real estate²¹. They believe that it is reflected in the manner of its calculation, namely adopting the area of arable land as the basis for its collection and using mainly quota rates, in the amount of 2.5 quintals of rye per 1 comparative fiscal hectare of the area of agricultural farms, and in the case of land not constituting a farm –

¹⁷ M. Podstawka, *Ocena ekonomicznych zasad wymiaru podatku rolnego w Polsce (Assessment of economic principles of the assessment of agricultural tax in Poland)*, *Więś i Rolnictwo (Countryside and Agriculture)* no. 2/1994, Warsaw 1994, p. 43.

¹⁸ An agricultural holding was an area of arable land, land under ponds and under buildings related to management of a farm, with the total area exceeding 1 ha or with a surface of the arable land exceeding 1 comparative fiscal hectare, owned by or being in possession of natural and legal persons, as well as organisational units without legal personality.

¹⁹ R. Mastalski, *Prawo podatkowe II – część szczegółowa (Tax Law II – detailed part)*, C.H. Beck Publishing House, Warsaw 1996, p. 237.

²⁰ M. Podstawka, *Podatek rolny jako instrument interwencjonizmu rolniczego (Agricultural tax as an instrument of agricultural interventionism)*, *Więś i Rolnictwo (Countryside and Agriculture)*, no. 1/1994, Warsaw 1994, p. 36.

²¹ P. Felis, *Funkcja fiskalna i społeczna w powierzchniowym systemie opodatkowania nieruchomości na przykładzie gmin w Polsce (Fiscal and social function in the surface property tax system on the example of gminas in Poland)*, *Gospodarka Narodowa (National Economy)* no. 3 (277), Warsaw 2015, p. 134.

the equivalent of 5 quintals of rye per 1 physical ha, calculated according to average purchase price of rye for the first three quarters preceding the given fiscal year.

Furthermore, adopting profitability of rye prices from the last 3 quarters preceding the fiscal year as the basis for calculating is a solution that currently does not allow for linking profitability of a farm directly with the tax amount. Currently, rye should be regarded as a historical measure, since it constitutes ca. 13% in the structure of cereal crops²² and its share decreases each year, which confirms that it is not a measurable determinant of profitability of agricultural holdings, and therefore does not allow for adjusting the amount of tax to the financial capacity of the taxpayer. Such structure indicates the lack of connection between this tax and the actual income of a farm, as well as the fact that it is based on quantitative criteria, rather than criteria relating to value. However, it should be noted that the legislator, adopting the price of rye as the tax calculation basis, assumed that such a structure (more noticeable for weak farms, characterised by low productivity and generating income) will contribute to the change of the area structure of farms, which was a desired solution at the time. From the point of view of the tax system, adopting rye prices as the basis for tax calculations was unfavourable, since it did not guarantee stable budgetary income. Currently, this solution requires a fundamental transformation, especially since the price of rye for the agricultural tax may be decreased each year by the Councils of Gminas.

This situation creates a number of subsequent problems, such as: the amount of support granted to agricultural farms in the form of reduction in the top rates of taxes, reliefs and tax exemptions, etc. Application of these instruments causes substantial loss of income under agricultural tax, which can be seen in Table 1.

In 2008-2009, reduction in revenues from agricultural tax, resulting from reduction in the top rates of this tax, amounted to ca. PLN 430-500 million. In 2010-2011, this support was significantly reduced, to the level of PLN 40 million in 2010, and less than PLN 80 million in 2011. In the subsequent years, the losses of gminas related thereto amounted from ca. PLN 460 million in 2014 to more than PLN 650 million in 2012-2013. Such a situation is reflected in instability of inflows under agricultural tax to the budgets of gminas, which in consequence may limit the funds for development of infrastructure and the local community.

It is also worth emphasising that the amount of aid granted to agriculture in the form of tax rates lower than the maximum amount amounted to ca. 63% of total aid granted in 2010, and in 2012-2014 – ca. 96%. In 2013, the highest loss-

²² *Statistical yearbook 2012*, GUS.

es of revenue under the applied reductions was recorded in rural gminas (ca. PLN 451 million, which amounted to ca. 70% of total lost revenue on account of agricultural tax) and urban-rural gminas (ca. PLN 192 million). Municipal gminas lost ca. 7.9 million due to reduction in agricultural tax rates, which amounted only to 1.2% of total lost revenue on account of agricultural tax.

Table 1

The amount of aid granted to farms in the form of reliefs and exemptions, reduction in the top rates of tax, remission, division into instalments and postponement in the years 2008-2014

Specification/Year	2008	2009	2010	2011	2012	2013	2014
Amount of granted aid (in %)	44.1	37.7	6.4	8.9	42.4	40.3	29.3
Value of aid granted (in PLN thousand)	531 109	458 340	62 526	93 524	714 578	670 072	483 660
Reductions in the top tax rates (in PLN thousand)	496 421	432 216	39 377	77 540	689 780	651 631	465 561

Source: Prepared by J. Pawłowska-Tyszko on the basis of annual reports on implementation of the budgets of gminas in 2008-2014.

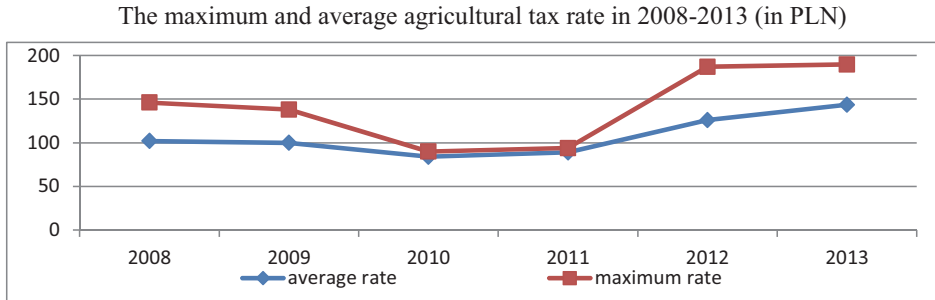
Such high diversity of the amount of the granted aid results, among others, from major fluctuations in rye prices, which are directly reflected in the amount of agricultural tax rate. Significant differences in rate amounts could be observed between 2010 and 2013, when the rate, in the nominal perspective, increased over two times (from the level of ca. PLN 85 in 2010 to ca. PLN 185 in 2012 and ca. PLN 190 in 2013). Stabilisation of agricultural tax rate takes place with the use of reductions in rye prices. However, gminas stabilise the rate of this tax only to a small extent. The analysis of the data of the Ministry of Finance²³ suggests that, with relatively low average price of rye fixed by the Central Statistical Office (GUS), reductions in gminas are also small. For instance, in 2010, gminas reduced the rate only by 2.7%, while in 2012, when the purchase price of rye dramatically increased as compared to the previous year, gminas reduced the rate on average by 26.4%.

About 40% of the Polish gminas benefited from the privilege of lowering tax rates in 2011, and in 2013 approximately 77% of gminas. On the one hand, such a situation smoothes out the average rate, while on the other hand, it also reduc-

²³ *Preferencje podatkowe w Polsce (Tax preferences in Poland)* no. 5, Ministry of Finance, Warsaw 2014.

es budgetary income. This was evident particularly in the years 2008, 2009, 2012 and 2013, when the average rate amounted to about 70% of the maximum rate (Figure 1).

Figure 1



Source: J. Pawłowska-Tyszko on the basis of data of the Minister of Finance for 2012-2013.

The changes, which came into force on 1 October 2013 and have been binding since 2014, might have positive impact on reduction in fluctuations of the amount of inflows from agricultural tax²⁴, and apply to the principles of determining the amount of agricultural tax. Until the end of 2013, the equivalent of 2.5 quintals of rye was calculated according to the average of 3 quarters preceding the fiscal year. Currently, pursuant to the new provisions, the average from 11 quarters preceding the fiscal year is used for calculations. The introduced change will reduce large fluctuations in the tax rate level, although it will not remove the low correlation between rye prices and profitability of agriculture²⁵. It was explained by R. Dowgier, who believes that the defect of the present system is making profitability of a farm dependent upon productivity of one product²⁶. However, fluctuations in purchase prices of rye over the last several years (particularly between 2010 and the subsequent years) show that the new legal regulation may considerably and noticeably reduce the agricultural tax rate.

The numerous issues raised in this study regarding agricultural tax have to include the issue of participation of the rural environment and agriculture in the public finance system. The data presented on Figure 2 suggest that, in the exam-

²⁴ Act of 10 May 2013 amending the Act on Agricultural Tax (*Journal of Laws Dz.U. of 2013, item 660*)

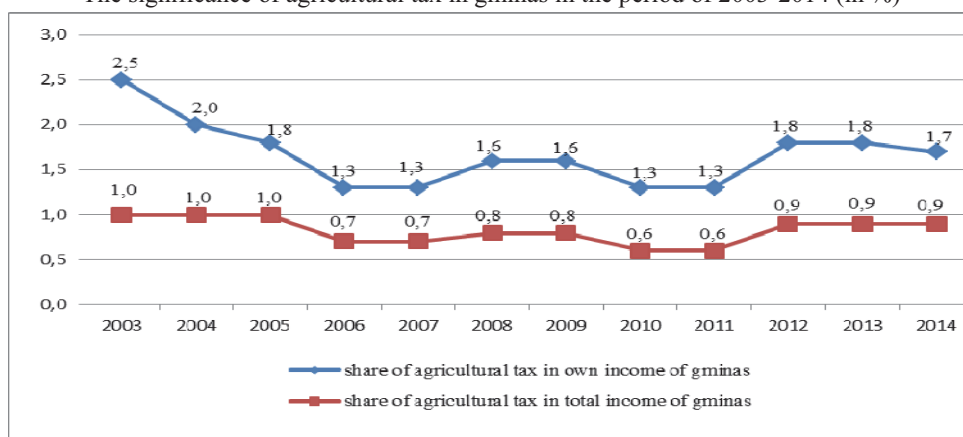
²⁵ L. Goraj, J. Naneman, M. Zagórski, *Uwarunkowania i konsekwencje opodatkowania rolnictwa w Polsce (Determinants and consequences of agriculture taxation in Poland)*, Forum Inicjatyw Rozwojowych (Forum of Development Initiatives), Warsaw 2014, p. 13.

²⁶ R. Dowgier et al., *Reforma podatków majątkowych (Property tax reform)*, ABC Publishing House, Warsaw 2004, p. 146.

ined period, the significance of agricultural tax in the financial contribution system of local administration has decreased. Even though from 2008 to 2009, as well as in the period of 2012-2014, an improvement in the analysed relations can be observed, they still remained at a level different than the level in 2003-2004. Decrease in the importance of this tax may be one of the symptoms of restricting financial independence of gminas. Deterioration of the income potential of gminas, resulting from the process of decreasing fiscal efficiency of local income sources, may be a serious threat to performance of socio-economic tasks and goals in the local economy system. Furthermore, the present form of agricultural tax fails to perform not only its role of collecting public revenue, but above all, also the redistribution function. The research conducted by our team clearly indicates that relatively the greatest agricultural tax burden occurs in the case of small and medium farms, and their share in income is reduced along with the growth in the surface area (Figure 2). It is confirmed also by the research carried out by other researchers dealing with this issue²⁷. Such a situation results in the fact that the agricultural tax, instead of alleviating social inequalities, privileges the largest, more effective farms, which obtain additional financial benefits on account of non-taxation of additional income.

Figure 2

The significance of agricultural tax in gminas in the period of 2003-2014 (in %)



Source: prepared by Joanna Pawłowska-Tyszko on the basis of Reports on implementation of budgets of local government units in the period of 2003-2014.

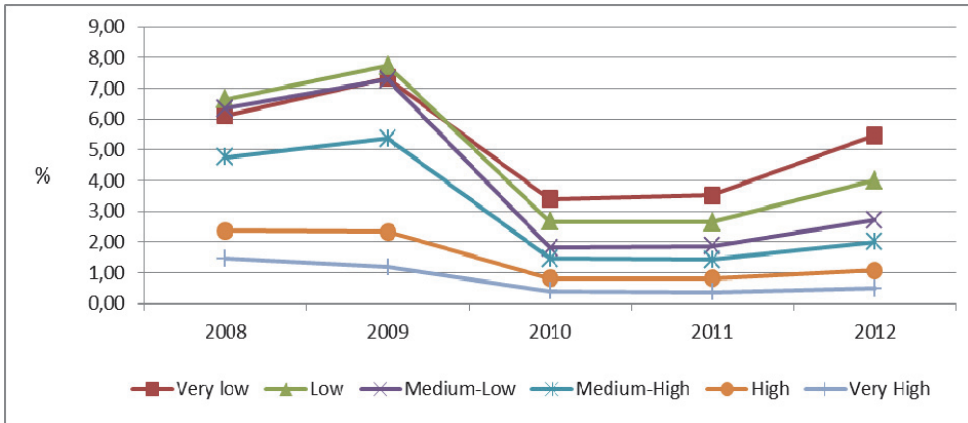
²⁷ R. Przygodzka, *Fiskalne instrumenty wspierania rozwoju rolnictwa – przyczyny stosowania, mechanizmy i skutki (Fiscal instruments supporting development of agriculture – reasons of application, mechanisms and effects)*, Publishing House of the Białystok University, Białystok 2006, p. 234.

The characteristic feature of agricultural tax is its strong connection with local government units, by supplying their budgets. In the years 2008-2014, this tax accounted for, on average, ca. 2% of income of all gminas. Ca. 64% of inflows of its global amount was received by rural gminas, 33% by urban-rural gminas, and only 3% by municipal gminas. The data indicates that the agricultural tax is not a significant component of budgetary income of gminas. In spite of the fact that a considerable part of agricultural tax was provided to rural gminas, its share in the income of these gminas was small and, in the examined period, amounted from 5.6 to 7.5%. The small share of this tax in the income indicates its minute importance in investment decisions of gminas. Furthermore, high variability of inflows on this account, unusual in any other tax, may deepen this problem. Currently, there are no statutory solutions, which would eliminate these problems.

The issue of large fluctuations of rye prices and the accompanying changes in the top tax rates intensifies the problem of the lack of relationship between the amount of the paid agricultural tax and the profitability of farms. The FADN data suggest that the ratio of agricultural tax to the family farm income was small and, in the analysed years, amounted to on average 5%. Meanwhile, for the agricultural tax to realise its basic functions, it should constitute approximately 8-10% of farmers' income, since only then its proper weight is achieved. Another problem (mentioned above) is the lack of relationship between the amount of agricultural tax and the economic size of farms. It turns out that the burdens for small farms are much higher than for average-sized and large farms, which proves the regressive character of this tax. For instance, in 2012 relatively the largest burdens were encountered in the case of farms with the weakest economic strength (ca. 6%), while the smallest burdens – in very large farms (ca. 0.5%) (Figure 3). Furthermore, the burdens for agricultural farms are not permanent and change with time. In 2009, the ratio of agricultural tax to family farm income was two times higher than in 2010 and 2011, whereas incomes of farms in 2010 and 2011 were two times higher than in 2009. This lack of correlation between agricultural tax and income indicates the need to introduce fundamental changes in the taxation system for agriculture.

Figure 3

The ratio of agricultural tax to family farm income, according to the economic size classes of farms in 2008-2012 (%)



Source: prepared by Joanna Pawłowska-Tyszko on the basis of FADN data for 2008-2012.

In the present taxation system for agriculture, the operating mechanisms of investment reliefs are also a cause of concerns. They do not perform their due role, owing to the fact that the amounts disbursed on investment activities are much higher than the currently paid agricultural tax. This means that an average farmer undertaking investments has presently no possibility of deducting 25% of investment expenses within the statutory 15 years. The lack of possibility of applying this provision in practice results in the fact that this relief does not fulfil its due function, and hence this provision requires changes.

A multi-criteria assessment of the present agricultural tax structure is, however, ambiguous (Table 2). The numerous structural elements having negative impact on implementation of specific goals also include solutions that foster increase in competitiveness of farms, by giving them the possibility of increasing their income, or foster its sustainable development. However, it should be emphasised that the present solutions are unfavourable for improvement of the state of public finance, limit structural transformations and undertaking investment – innovative activities, and therefore limit development of farms and making of rational economic decisions, thus slowing down the economic growth.

Table 2

Multi-criteria assessment of agricultural tax

Criterion	Assessment*	Comments
Macro level		
Generating income to the central budget	Negative	Fiscal effectiveness of agricultural tax is relatively low. The problem is made more severe by instability of tax rates, use of reliefs, reductions and exemptions.
Generating administrative and operational costs	Positive	An undeniable advantage of the present agricultural tax structure is its simplicity of calculation, and therefore lack of impact of its elements on increasing the costs of assessment and collection. Thus, the structure does not limit the possibilities of income growth.
Sectoral level		
Structural transformations	Negative	A small number of reliefs in the system and lack of possibility to use them (investment relief). Lack of correlation between the applied tax reliefs, exemptions and reductions and the structural transformations.
Increase in the share of agriculture in the GDP	Negative	Lack of applied agricultural tax reliefs limits undertaking innovative activities, increase in investments and increase in production efficiency.
Development of competitive advantage of the agricultural sector	Positive	Some farming activities achieve tax benefits constituting a form of tax expenditures.
Micro level		
Tax convenience	Positive	<ul style="list-style-type: none"> • Simple and convenient manner of tax calculation and collection • Lack of possibility to avoid paying the tax in the case of unfavourable macroeconomic situation, decrease in profitability of a farm. • Lack of registering and reporting obligations.
Rationality of economic decisions	Negative	Lack of possibility to make rational decisions due to the lack of obligation of keeping records of purchases. Lack of possibility of tax management.
Economic-financial effectiveness	Negative	Lack of correlation between the decisions made and the economic output of a farm, as a result of the lack of records of economic events. The tax paid regardless of the achieved financial output (even when the farmer suffers loss).
Environmental effectiveness	Negative	Lack of reliefs, exemptions, environmental inclusions. Low amount of tax may induce intensification and growth in production efficiency.
Distortion of economic relations (at the micro level)	Positive	The agricultural tax does not lead to changes in behaviours of entities, re-allocation of resources, or adverse impact on the income effect.
Linking with the social and health insurance system	Negative	No linkages with the KRUS system. It is not possible to deduct social insurance premiums from income/tax.

Explanation: *assessment scale: positive, neutral, negative, difficult to determine.

Sources: prepared by Joanna Pawłowska-Tyszko.

The presented overview (Table 2) indicates that the agricultural tax in Poland is a historical tax, which has not so far (apart from minor changes) undergone a thorough reform. Therefore, many representatives of science, practitioners and entrepreneurs indicate the need for this reform. Among others, K. Wójtowicz points out that the structure of this type of taxes does not meet the contemporary requirements of the market economy²⁸. P. Felis adds that the outdated and non-flexible formula of calculation of property taxes, such as the agricultural tax, makes it impossible to implement fiscal and non-fiscal objectives²⁹. M. Forfa also notices that the agricultural tax hinders movement of workers to other economy sectors, delays the process of expanding agricultural farms, hinders the equalisation of economic and natural farming conditions, as well as is not connected to the economic output of a farm³⁰. According to L. Goraj and the co-authors, such a strong distinctness of fiscal principles may be (and usually is) treated as a privilege³¹. It was also noticed by M. Grabowski³², who emphasised that excluding income from agricultural activities, due to the fact that they are not subject to other income taxation, does not constitute an element of a tax standard, and thus such a solution should be treated as a privilege. The common criticism of agricultural tax and the lack of implementation of basic functions with its help should be the basis for development of other fiscal solutions in agriculture, corresponding to the contemporary circumstances.

1.2.2. Income tax on special types of agricultural production

Income tax on special types of agricultural production constitutes a specific form in the income tax system in Poland. The sources of this form of taxation should be found by analysing the origin of tax burdens of income of natural persons. Taxation of the results of economic activity of natural persons, specifica-

²⁸ K. Wójtowicz, *Analiza potencjalnych skutków reformy systemu opodatkowania nieruchomości w Polsce (Analysis of potential effects of the reform of the property tax system in Poland)* [in:] *Finanse publiczne (Public finance)* (academic supervision by A. Pomorska), University of Maria Curie-Skłodowska, Lublin 2006, p. 260.

²⁹ P. Felis, *Konsekwencje reformy systemu podatków od nieruchomości w Polsce (Consequences of the reform of the property tax system in Poland)* [in:] *Konsekwencje zmiany obciążeń podatkowych w Polsce (Consequences of changes in the tax burdens in Poland)* (academic supervision by J. Głuchowski, K. Piotrowska-Marczak, J. Fila, Dyfin, Warsaw 2013, p. 150.

³⁰ M. Forfa, *Podatek rolny a rozwój gospodarstw rolnych (Agricultural tax and development of agricultural holdings)*, *Zeszyty Naukowe (Academic Journals)* of Warsaw University of Life Sciences no. 89, Warsaw 2011.

³¹ L. Goraj, J. Naneman, M. Zagórski, *Uwarunkowania i konsekwencje...*, p. 15.

³² M. Grabowski, *Preferencje podatkowe w Polsce (Tax preferences in Poland)*, Ministry of Finance, Warsaw 2010, p. 14.

tion of the amount and scope of taxation, has been a significant challenge (actually already since the ancient times) for treasury systems³³. Although the first attempts at introducing income taxes in Poland were outlined at the end of the 16th century by Andrzej Frycz Modrzewski, specification of these postulates took place no sooner than in 1920, when both the income tax, as well as the property tax were introduced (as already mentioned). It is worth noting that the contemporary income tax covered also agricultural holdings (the basis for determination of income was the farm size, as well as the location of the farm, correlated with the natural conditions, determining profitability of the farm). As stated by G. Szczodrowski³⁴, the tax system existing in Poland in the command-and-quota economy (until 1989) included four different subsystems, addressed to: socialised economy, non-agricultural non-socialised economy, agricultural non-socialised economy.

The burdens affecting companies obtaining small revenues and tax income could constitute a certain prototype for the income tax on special production types. These entities, as taxpayers, as pointed out by Szczodrowski, were obliged to jointly pay sales tax and income tax. The basis for estimation of the amount of turnover and income constituted the so-called "external signs" (e.g. number of employees, location of the establishment, or type of operations)³⁵.

Personal income tax (PIT), introduced in 1992, underwent substantial evolution, covering not only the rates and thresholds, but also the subjective scope (including the essential definition of the taxpayer), as well as the material scope³⁶. Although the agricultural tax was introduced in 1982, only the tax reform in the early 1990s created the possibility to include under the income tax only a certain specialised area of agricultural activities, slightly related to land as a production factor (such as *in vitro* greenhouse cultivations). Changes were justified by the need for creating a global (unitary) system, i.e. taxing income without distinguishing its category between the sources of origin. Table 3 presents a general diagram of calculations of due personal income tax. Income from spe-

³³ Certain forms resembling headage tax were used even in the ancient times, e.g. in Greece or Rome. However, as analysed by J. Kulicki, personal income tax, in the form similar to the contemporary one, appeared in the late 18th century in England. The circumstances of introducing levies, at least similar in terms of structure to the current PIT (e.g. in France or in the United States), usually involve the necessity for financing of war expenses from the central budget of the state. J. Kulicki, *Rozwój podatku dochodowego w Polsce (Development of income tax in Poland)*, Analyses of the Office for Parliament Studies, no. 6 (50), 5 April 2011, p. 1-20.

³⁴ G. Szczodrowski, *Polski system podatkowy (Polish tax system)*, Polish Scientific Publishers PWN, Warsaw 2007, p. 59.

³⁵ *Ibidem*, p. 62.

³⁶ J. Ickiewicz, *Obciążenia fiskalne...*, op. cit., p. 92.

cial types of agricultural production may constitute one of the sources of tax revenue. A. Milewska³⁷ particularises that "(...) with regard to selecting the estimated income standards as an option of determining the taxable income, the tax is calculated according to a progressive tax scale and is not connected to the actual income obtained from this activity".

Table 3

Diagram of determining personal income tax

Indication	Tax category
(1)	Income sources: (a) official employment relationship, co-operative employment relationship, work contract, (b) non-agricultural business operations, (c) operations performed in person, (d) the remaining sources (including <u>special types of agricultural production</u>)
(2)	Costs of income generation
(3) = (1)–(2)	Income before deductions
(4)	Deductibles from income on account of: (a) insurance premiums, (b) donations, pensions, (c) rehabilitative expenses, (d) investment expenses
(5) = (3)–(4)	Income taxable according to a progressive tax scale
(6) = (5) x tax rate	Input tax
(7)	Tax reductions on account of: (a) purchased rights to housing and repair relief, (b) relief on children
(8) = (6)–(7)	Statutory amount of tax reduction
(9) = (6)–(7)–(8)	Output tax

Source: J. Kulawik, P-Y. Lelong, J. Pawłowska-Tyszko (ed.), M. Soliwoda, *Systemy podatkowe w krajach Unii Europejskiej (Tax Systems in the EU Member States)*, IAFE-NRI, Warsaw 2013, p. 74 (adaptation of the scheme: J. Ickiewicz, *Obciążenia fiskalne przedsiębiorstw (Fiscal burdens of enterprises)*, PWE Warsaw, 2010, p. 95).

Polish taxation law³⁸ uses a definition of "agricultural activities" formulated specifically for fiscal purposes³⁹. According to Article 2 (2) of the Act on Personal Income Tax, these "refer to activities consisting in the production of un-

³⁷ A. Milewska, *Podatek dochodowy z działów specjalnych w świetle obowiązujących przepisów prawnych (Income tax from special production sections in the light of the binding legal regulations)*, Zeszyty Naukowe (Academic Journals) of the Warsaw University of Life Sciences. *Ekonomika i Organizacja Gospodarki Żywnościowej (Economics and Organisation of Food Economy)*, 2011, no. 94, p. 111.

³⁸ *Act of 26 July 1991 on Personal Income Tax (Journal of Laws Dz.U. of 1991, no. 80, item 350, as amended)*, hereinafter: PIT Act.

³⁹ The Polish legislation does not have a uniform definition of "agricultural activity", which would definitely be useful (e.g. from the point of view of insurance law and, in general, legislation concerning shaping of the agricultural structure).

processed (natural) plant or animal products based on own crops, breeding or rearing, also including seed gain, nursery plants, breeding and reproductive material, outdoor, greenhouse and grown under plastic market gardening, cultivation of ornamental plants, mushrooms and fruit growing, breeding and the production of animals, birds and working insects breeding material, industrial and farmed animal production, breeding of fish, as well as the activities, in which the minimum periods of keeping the purchased animals and plants, during their biological growth...". Special types include, above all, specialist, usually highly intensive, forms of generating revenue. Article 2 (3) narrowed the scope of the definition to "crops grown in greenhouses and in heated plastic tunnels, the cultivation of mushrooms, their mycelium and "in vitro" plants, farmed rearing and breeding of slaughter and laying poultry, poultry hatcheries, breeding and rearing of fur and laboratory animals, breeding and rearing of earthworms, entomophagies and silkworms, keeping apiaries, rearing and breeding of other animals outside agricultural holding". Another provision (paragraph 3a) states that a specific kind of production may be treated as a special type provided that the threshold volume has been exceeded (stated in Appendix to the PIT Act). R. Dziemianowicz believes that income tax from special production types results from a certain specific nature of some types of production: more precisely, the lack of correlation between the obtained production output and the natural conditions (mainly soil and climate conditions)⁴⁰. This view is essentially indisputable, since the reason that convinced the legislator to introduce the simplification (similar to some solutions addressed to the agricultural sector in some European countries) was probably the marginal role of soil – as a production factor for some forms of plant or animal production. On the other hand, J. Bieluk expresses an opinion that the structure of the term "special production types" itself has become significantly narrower although the following criteria were still borne in mind: profitability, great amount of work and funds, as well as small correlation with soil and approximation of some kinds of activities to non-agricultural activities"⁴¹.

Table 4 presents selected changes concerning transformations of income tax from special production types in Poland.

⁴⁰ R.I. Dziemianowicz, *Efektywność systemu opodatkowania rolnictwa (Efficiency of the agricultural tax system)*, Publishing House of the Białystok University, Białystok 2007, p. 301.

⁴¹ J. Bieluk, *Działy specjalne produkcji rolnej. Problemy prawne (Special types of agricultural production. Legal issues)*, Temida 2 Publishing House, Białystok 2013, p. 150.

Table 4

Changes in regulations concerning income tax on special production types

Year *	Change	Comments
1991	Introduction of the Act on Personal Income Tax.	Simplification of the previously complicated taxation system for natural persons
2000	Transfer of the list of special production sections to the PIT Act	Higher legibility of acts concerning the tax law.
2002	Qualification, by way of a Regulation (of the Minister of Finance with the Minister of Agriculture), of specific forms of crops, rearing and breeding as "special production sections", owing to production scale (volume).	In 2002, transfer of the list of special production types from the Regulation to the PIT Act.
2015	The obligation to keep accounting books in the case of revenues equivalent to at least EUR 1.2 million obtained by taxpayers dealing with special types of agricultural production (amendment of Article 15 (2) of the PIT Act - coming into force of the Act of 9 April 2015 amending the Act on Personal Income Tax and certain other acts (Journal of Laws Dz.U. of 2015, item 699).	It will be in effect since 1.01.2016 (however, the provision raises doubts concerning practical implementation).

Explanation: * references to legal acts in the literature source (below).

Source: prepared on the basis of legal acts, J. Bieluk, *Działy specjalne produkcji rolnej. Problemy prawne (Special types of agricultural production. Legal issues)*, Temida 2 Publishing House, Białystok 2013.

It is worth emphasising, following, above all, legal practitioners, e.g. J. Bieluk, that the definition of "special production sections" itself, although logically should be contained within the definition of "agricultural activity", is substantially ambiguous and raises doubts even among tax authorities. It thus seems necessary to diagnose and repair any difficulties resulting from inaccurate definition apparatus, as well as from limitation of the "accidence" and excessive narrowing during classification of some forms of activity as special production types. A good example here can be, for instance, a very narrow bird list (lacking such birds as ostriches and quails), limited to popular species of poultry.

Table 5 distinguishes the most significant selected estimation standards of income from special types of production, taking into account economic significance of particular forms in the Polish agricultural sector. The amounts assigned to individual estimation standards of annual income for cultivations and productions distinguished in the list of the Regulation of the Minister of Finance are indexed every year on the basis of "price growth ratio of commodity-based agricultural production", announced by the President of the Central Statistical Office. Essentially, the estimation standard for 1 unit of chicken (poultry) does not change, but the burdens calculated on the basis of estimation standards for most

cultivations and productions increased by at least 25% within just four fiscal years. This may encourage some farmers to use more in-depth tax records, constituting the basis for decisions regarding tax optimisation.

Table 5
Examples of estimation standards for income from special types of agricultural production

Item*	Types of cultivations and productions	Unit of cultivation area or types of production	Estimation standard of annual income		Amendment 2014/2010 (2010=100.0)
			2010	2014	
1	Cultivations in heated greenhouses, above 25 m ² :				
	a) decorative plants	1 m ²	9.65	12.19	126.3
2	Cultivations in non-heated greenhouses, above 25 m ²	1 m ²	2.21	2.79	126.2
3	Cultivations in heated plastic tunnels, above 50 m ² :				
	a) decorative plants	1 m ²	7.19	9.08	126.3
4	Cultivations of mushrooms and their mycelia - above 25 m ² of crop area	1 m ²	4.15	5.23	126.0
5	Slaughter poultry - more than 100 units:				
	a) chickens	1 unit	0.12	0.16	133.3
6	Laying poultry, above 80 units:				
	a) laying hens (in a reproductive herd)	1 unit	2.74	3.46	126.3
	b) meat hens (in a reproductive herd)	1 unit	2.30	2.90	126.1
	f) hens (production of table eggs)	1 unit	2.01	2.54	126.4
7	Poultry hatching:				
	a) chickens	1 unit	0.01	0.01	100.0
11	Apiary, above 80 families	1 family	3.35	3.48	103.9
12	In vitro plant cultivations - surface area of shelves	1 m ²	165.69	209.14	126.2
15	Breeding and raising of other animals outside the farm, e.g.:				
	a) cows, above 5 heads	1 head	276.12	348.52	126.2
	b) calves, above 10 heads	1 head	57.99	73.21	126.2
	c) slaughter cattle, above 10 heads (except for fattening cattle)	1 head	30.36	38.31	126.2
	d) fattening cattle, above 50 heads	1 head	34.52	43.58	126.2

Explanation: * sequence and numbering according to legal sources.

Source: prepared on the basis of data contained in MF regulations to the PIT Act.

Table 6 presents specification concerning collection of income tax on special types of agricultural production. However, MF data relate to the total number of taxpayers, whose "income is taxed at the rate of 19%: from non-agricultural business operations or special types of agricultural production".

Table 6

Income tax on special agricultural production types – characteristics concerning collection

Specification	2010	2014
Number of taxpayers whose income is taxed at the rate of 19%: on non-agricultural business operations or special types of agricultural production	395 039	473 954
Number of taxpayers, whose income is taxed using the tax scale	24 907 974	24 764 126
Taxpayers conducting special types of production: tax rate 19%		
Revenue [in PLN thousand]	1 391 409	942 719
Tax deductible costs [in PLN thousand]	1 317 679	883 997
Income [in PLN thousand]	80 765	66 316
Loss [in PLN thousand]	7 035	7 594
Income from special types of agricultural production (after deducting social security premiums) - when using the tax scale [in PLN thousand]	305 323	383 145
The share of income from special production types in the overall amount of income - when using the tax scale [%]	0.05	0.06

Source: prepared on the basis of the data of the Ministry of Finance: Information regarding personal income tax settlement, Department of Income Taxes, Warsaw (Reports for 2010 and 2014).

The data presented in Table 6 suggest that the income from special types of agricultural production (after deducting social insurance premiums) constitutes almost 0.06% of tax revenue (this applies only to taxpayers using the tax scale). On the other hand, the tax revenue obtained from farmers dealing with special production types and applying the 19% rate amounted to over 66 000 in 2014, and was by over 14 000 lower than in 2010. The presented data indicate a marginal share of inflows from the so-called special production types in the overall inflows on account of PIT.

Table 7 presents detailed multi-criteria evaluation of income tax on special production types. From the point of view of the evaluation (taking into consideration the criteria at the macro level), it is worth mentioning the opinion of R.I. Dziemianowicz, who thought that application of estimation standards for calculating tax revenue can be treated as a typical tax preference of the tax expenditures type, allowing for a selected (but relatively narrow) group of agricultural producers to achieve tax benefits, undoubtedly at the cost of lower budgetary income⁴².

⁴² R.I. Dziemianowicz, *Preferencyjne opodatkowanie dochodów rolników na przykładzie działów specjalnych produkcji rolnej (Preferential taxation of farmers' incomes on the example of special types of agricultural production)*, Academic Annuals of the Association of Agricultural and Agribusiness Economists, 2012, vol. 14, no. 1, p. 124.

Table 7

Multi-criteria assessment of the previous taxation system for agriculture in Poland: income tax from special production types

Criterion	Assessment*	Comments
Macro level		
Generating income to the central budget	Negative	Taxation of income on the basis of estimation standards can be treated as tax expenditures. Additionally, the tax effectiveness of the payer of the tax from special production types is relatively low (see: Dziemianowicz, 2012).
Generating administrative and operational costs	Neutral	The need for annual update of standards and publications of the Regulation of the Minister of Finance.
Sectoral level		
Acceleration of structural changes**	Neutral	Using only estimation standards (rather than "full" accounting), lack of reliefs (including investment reliefs), exemptions, suspensions (Bieluk, 2013).
Increase in the share of agriculture in the GDP	Neutral	Special types of agricultural production include forms of production activity, which are based on innovations and relatively high capital intensity as compared to production types, in which soil is the main production factor.
Development of competitive advantage of the agricultural sector	Positive	In the case of some agricultural activities, tax benefits are achieved, which are a form of tax expenditures.
Micro level		
Tax convenience	Positive	<ul style="list-style-type: none"> • Possibility to choose the form of taxation (convenience for the taxpayer): settlement according to the actual financial output, with the use of a tax revenue and expense ledger or accounting books (in practice, this solution is infrequently chosen – according to J. Bieluk, on the basis of the data of the Minister of Finance, in 2008, only 0.5% of farmers taxing income from special production types); or determination of income in a simplified manner, using estimation standards (Bieluk, 2013; Bieluk, 2015). • Lack of possibility of introducing changes in tax revenue statements in the case of unfavourable macroeconomic situation (see: Włodarz, 2009). • Not very burdensome recording and reporting obligations when using estimation standards.
Rationality of economic decisions	Positive/neutral (depends on the form of tax records)	Keeping of the accounting books stimulates economic rationalisation and well thought-out decision-making relating to investments.
Economic-financial effectiveness	Positive/neutral (depends on the form of tax records)	Note as above, in-depth financial recording (resulting from tax regulations) increases the possibility of using financial and investment planning and, as a consequence, may in the long term affect economic and financial efficiency of farms. The use of estimation standards is obligatory, even when the entity bears loss (e.g. in the case of unfavourable price to cost ratios).
Environmental effectiveness	Neutral	In the case of using only estimation standards, no reliefs, exemptions, exclusions.

Table 7 (cont.)

Tendency to bear risk (maintenance of moral hazard and negative selection)	Negative	May stimulate farmers to use imprecise definition apparatus or encourage to apparent division of large-scale activities into smaller units.
Stimulating function: creation of stimuli to undertake investment operations	Neutral/ Positive	Depends on the adopted form of recording (tax optimisation is the most thorough when using accounting books).
Deformation of economic relations (at the micro level)	Neutral	This applies to application of estimation standards, which are similar to lump-sum tax: they are essentially non-distortionary. This means that imposing this public burden does not lead to changes in behaviour of entities (e.g. natural persons), or re-allocation of resources, except for the income effect, resulting from reduction in the amount of income (after deduction of the tax burden) (Stiglitz and Rosengard, 2015).
Linking with the social and health insurance system	Positive	Application of social security under KRUS is beneficial, in particular in the case of farmers achieving low production scale. In the case of small taxpayers (income tax from special production types), the health insurance rate is rather a fixed expense (Włodarz, 2009).

Explanation: *assessment scale: positive, neutral, negative, difficult to determine.

Sources: prepared by Michał Soliwoda (using the literature mentioned in the table).

It should be emphasized that, in the case of higher production scale and economic and financial outputs (e.g. national family farm income), execution of record-keeping and reporting obligations is not burdensome to a farm, especially when it involves the use of the aforementioned tax revenue and expense ledger. R. Rosiński⁴³ believes that an advantage of the income tax from special production types is the lack of complicated obligations of keeping tax records (regardless of the "size and profitability of the conducted operations"). In consequence, this results in the lack of the sense of tax justice (farmers dealing with special production types versus others entrepreneurs conducting non-agricultural business activities). Rosiński postulates that the obligation of recording tax revenue should cover all farmers dealing with special production types. It is worth noting a certain harmonisation concerning regulations with regard to tax and social and health insurance. Rosiński analysed and compared the level of social insurance premium burdens (both in KRUS and ZUS) of a natural person dealing with special types of agricultural production. He declared that the quite considerable differences he observed are "unjustified". Additionally, he formulated a quite radical conclusion, concerning inclusion of this form of taxation in the general

⁴³ R. Rosiński, *Opodatkowanie działów specjalnych produkcji rolnej w Polsce (Taxation of special types of agricultural production in Poland)*, Economic Studies of the University of Economics in Katowice, 2012, no. 108, p. 376-383.

insurance system. This would even result in the need to "update the premium and, as a consequence, introduce higher insurance benefits". According to the authors of this publication, this requires in-depth analyses, not only in the form of simple calculation simulations. The research should also cover other factors, such as the tendencies of the taxpayers themselves to accept new regulations (the so-called empirical research taking account of the variable *willingness to accept*).

Income tax from special types of agricultural production may be the basis for gradual introduction of burdens in farmers' incomes (on the basis of model solutions related to standards for production types) having a considerable production scale and, above all, significant share of goods production. J. Bieluk treats fixed income taxation (based on estimation standards) almost as "a model solution", friendly to farms, which do not fully take advantage of vertical and horizontal integration with the market⁴⁴.

2. Income taxation in agriculture – review and assessment of solutions

2.1. The simplified record-keeping and reporting systems for the purposes of financial and tax accounting – multifaceted perspective

In the perspective of the leading economics trend, and thus also finance trend, a company is a special subject for microeconomic analysis. As noted by J. Borowski⁴⁵, the classical-neoclassical approach focused on exploration of relations between a company and the environment, i.e. "the issues of resource allocation with the use of the price mechanism and final allocation of finished products on the market, also with the use of the price mechanism"⁴⁶. The decision-making processes (also concerning finances) are regarded as basic assumptions, necessary for the functioning of a business entity. Determination of the purpose of the company's activities was very important, both in short, as well as in long term. The representatives of the neoclassical approach (e.g. Walras and Marshall), on the ground of the marginal productivity theory, analysed the con-

⁴⁴ J. Bieluk, *Obciążenia podatkowe gospodarstw rodzinnych w Polsce i w Europie. Propozycje rozwiązań na przykładzie jednostek prowadzących działalność w zakresie działów specjalnych produkcji rolnej (Tax burdens on family farms in Poland and in Europe. Suggestions of solutions on the example of entities conducting activities within special sections of agricultural production)*, [in:] *Prawne mechanizmy wspierania i ochrony rolnictwa rodzinnego w Polsce i innych państwach Unii Europejskiej (Legal mechanisms of support and protection of family farming in Poland and other Member States of the European Union), collective work* edited by P. Litwiniuk, FAPA Publishing House, Warsaw 2015, p. 337-351.

⁴⁵ J. Borowski, *Teoria przedsiębiorstwa w świetle teorii ekonomii i zarządzania (The theory of a company in the light of the theory of economics and management)*, "Optimum. Studia Ekonomiczne" ("Optimum. Economic Studies"), no. 3 (63) 2013, p. 78-91.

⁴⁶ Ibidem, p. 79.

ditions, in which a company maximises its profit. The conditions of profit maximisation of a company differ significantly, depending, e.g., on the market structure (to what extent it is similar to the perfect competition), time horizon for the company's supply (in the short or in the long term)⁴⁷. The analysis framework of the decision-making processes was significantly extended as a result of the development of the theory of business enterprise in the 20th century. This was affected by the following theories, the intention of which was to question the economic rationality paradigm, usually assuming the presence of information asymmetry⁴⁸: the transaction cost theory, the agency theory, the theory of games. It results from the above that the lack of consistent, holistic theory of business enterprise led to difficulties in analysing the decision-making processes concerning financial resources of a company.

The initial scope of the meaning of finances involved phenomena currently studied by the public finance. S. Owsiak⁴⁹ provides an example of *financia pecuniara* – an amount payable in cash, which was supposed to be paid to the state (or rather the ruler) or a private person. Along with the development of socio-economic relations around the world, in order to provide an in-depth description of the economic plane relating to financial phenomena⁵⁰, it was necessary to develop a "language" for reporting the economic phenomena. As justifiably stated by J. Czekaj and Z. Dresler, the analysis of the achieved economic and financial outputs⁵¹ is a condition for effective operation of a company. "The basis" for inputs of analytical systems are data (processed, aggregated under financial reporting and control) originating from the system for recording economic events. The accounting system, since the ancient times⁵², has been used as the language for recording economic events. It is applicable to entities having different legal and organisational form or size⁵³. The accounting system – as a component of the holistic system of business organisation management – is focused on the imple-

⁴⁷ See E. Czarny, *Mikroekonomia (Microeconomics)*, PWE, Warsaw 2006, p. 122-124.

⁴⁸ See J. Borowski, *Teoria...*, op. cit.

⁴⁹ S. Owsiak, *Podstawy nauki finansów (Basics of finances)*, PWE, Warsaw 2002, p. 17.

⁵⁰ S. Flejterski defines them as "(...) cash phenomena, consisting in accumulation and distribution of cash resources in the processes of allocation and exchange". S. Flejterski, *Metodologia finansów (Methodology of finances)*, Polish Scientific Publishers PWN, Warsaw 2007, p. 55.

⁵¹ J. Czekaj, Z. Dresler, *Podstawy zarządzania finansami firm (Fundamentals of financial management of companies)*, Polish Scientific Publishers PWN, Warsaw 1995, p. 203.

⁵² C. Wiley, *The History of Accounting*, 2013, <http://www.accountingedu.org/history-of-accounting.html> (date of access: 10.11.2015); A. Heffer, On the curious historical coincidence of algebra and double-entry bookkeeping, *Foundations of the Formal Sciences*. Ghent University, November 2009, p. 11.

⁵³ I. Olchowicz, *Rachunkowość podatkowa (Tax accounting)*, Difin, Warsaw 2011, p. 15.

mentation of many tasks⁵⁴, including documentation (reporting), planning, as well as control tasks. A slightly wider functional scope of accounting is provided by A. Jastrzębowski⁵⁵, who lists the following functions: information, reporting, control, evidence, analytical function. It is worth focusing on the evidence function, which is the most strongly associated with the tax accounting needs. This function involves generating documents, as well as their archiving, protection⁵⁶ for the purposes of various kinds of controlling stakeholders – external entities (e.g. courts, tax authorities), as well as internal units (e.g. controlling units). I. Olchowicz, listing the set of functions performed currently by the accounting system, included, apart from the ones indicated by A. Jastrzębowski, a statistical function and a reporting function. Table 8 compares the key attribute requirements, which should be met by information generated in the accounting system.

Table 8

Attributes of information generated by the accounting system

Attribute	Description
Comprehensibility	Legibility for the prepared users
Significance	Possibility of undertaking decisions on the basis of information, "by facilitating the evaluation of past, present or future events"
Usability	Possibility of using information according to various classification sections
Credibility	Faithful reflection of the reality, no basic errors
Neutrality	No bias, objectivity
Punctuality	Information prepared on time (there is a certain period of information preparation)
Completeness	Full information, no important information omitted
Comparability	Possibility of comparing in subsequent reporting periods, as well as according to specified acquisition forms

Source: adaptation of the considerations of I. Olchowicz, *Rachunkowość Podatkowa (Tax Accounting)*, Difin, Warsaw 2011, p. 17-18.

As noted by E. Walińska⁵⁷, only accounting as "an information system", and, as a result, as "a provider of information to a wide group of users", has a certain monopoly to measure the economic reality of an entity. The relation between the accounting system and the financial system of a business entity is so strong that

⁵⁴ R. Doluschitz, C. Morath, J. Pape, *Agrarmanagement*, UTB, Stuttgart (Hohenheim) 2011, p. 226-227.

⁵⁵ A. Jastrzębowski, *Teoria legitymizacji a funkcje rachunkowości (The theory of legitimation and the functions of accounting)*, *Studia Oeconomica Posnaniensia* 2014, vol. 2, no. 4 (265)

⁵⁶ A. Jastrzębowski, *Wpływ ryzyka gospodarczego na rozwój rachunkowości (Impact of business risk on the development of accounting)*, [in:] *Funkcje współczesnej rachunkowości (Functions of contemporary accounting)*, collective work edited by J. Samelak, Publishing House of the University of Economics in Poznań, Poznań 2012.

⁵⁷ E. Walińska, *Rachunkowość jako nauka – jej współdziałanie z dyscypliną finanse (Accounting as a science – its cooperation with finances)*, *Academic Journals of the Szczecin University* no. 803, "Finanse, Rynki Finansowe, Ubezpieczenia" ("Finances, Financial Markets, Insurance") no. 66, Academic Publishing House of the Szczecin University, Szczecin 2014, p. 509-523.

accounting "is the primary source of financial information: both retrospective, as well as prospective"⁵⁸. Furthermore, E.A. Helfert treats "accounting" as a constituent category of economic and financial analysis (apart from "investment attractiveness evaluation" and "management efficiency evaluation"). Helfert includes in the tasks of accounting: "profit calculation", "value calculation", "tax calculation". From the point of view of further discussion, it is important to identify the function of the "subsystem" of tax accounting, which, on the whole, involves calculation of the level of tax burdens. Table 9 presents the areas of relations between accounting and finances – as sections of practices accompanying business operations.

Table 9

Accounting and finance as cooperating disciplines of economic sciences

Role	Accounting	Correlation	Finance
Measurement of the economic reality of an entity and communicating information via financial statement	Lack of own principles of determining fair value	Measurement of the economic reality through accounting	Valuation techniques, principles of determining current value, discounting technique
	Balance sheet method	Balance sheet method	Forecasts of financial data, including the valued items in the value (current, fair, market) in the "management" balance sheet
Disclosures	Explanatory information to the financial statement, e.g. particular balance-sheet items	Use of measures used in finances	Risk measurement, determination of future, discounted values, etc.

Source: adaptation of figure: E. Walińska, *Rachunkowość jako nauka - jej współdziałanie z dyscypliną finanse (Accounting as a science – its cooperation with finances)*, *Zeszyty Naukowe Uniwersytetu Szczecińskiego (Academic Journals of the University of Szczecin) no. 803 "Finanse, Rynki Finansowe, Ubezpieczenia" ("Finances, Financial Markets, Insurance") no. 66, Academic Publishing House of the University of Szczecin, Szczecin 2014, p. 520 (12).*

As noted by N. van der Wijst, accounting systems use and generate information in a slightly different way than the financial system: an example is the allocation of profit to reporting periods, and additionally making depreciation deductions, as well as the primacy of the accrual principle in accounting⁵⁹.

J. Zuchewicz⁶⁰, on the basis of a review of foreign literature, classified models of the accounting systems operating in the world. She concluded that "the

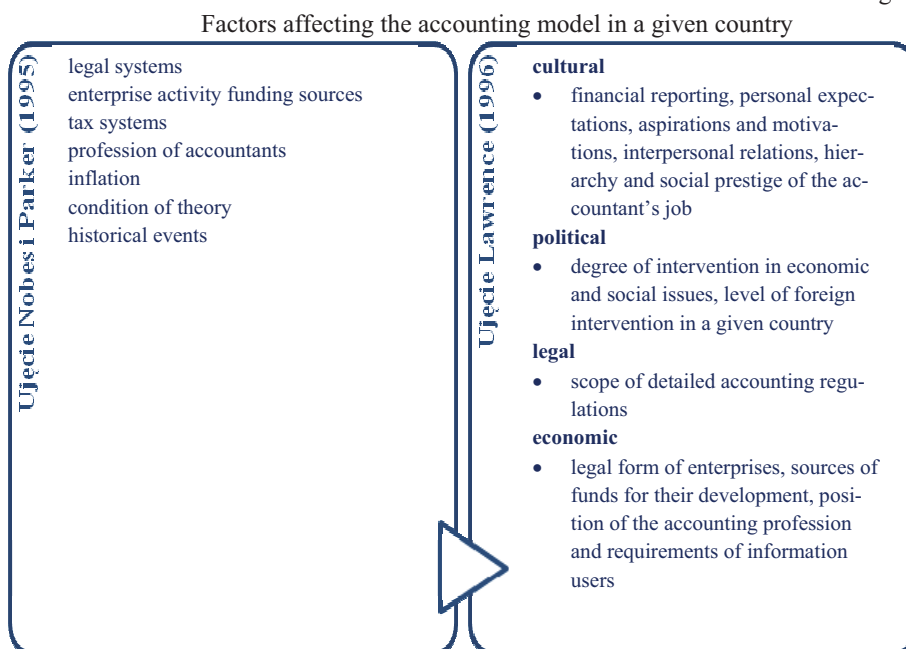
⁵⁸ Ibidem, p. 510-511 (2-3).

⁵⁹ N. van der Wijst, *Finance: A quantitative introduction*, Cambridge University Press, Cambridge 2013, p. 24.

⁶⁰ J. Zuchewicz, *Perspektywy rozwoju modeli rachunkowości na świecie (Perspectives for development of accounting models around the world)*, Academic Journals of the Szczecin

principles and rules of accounting in a given country are influenced by the economic, social, legal and educational systems shaped throughout years of development". Her conclusion was supported by an analysis of classification perspectives proposed by accounting theoreticians in the 1990s (Figure 4). It is worth emphasising that the economist expressly separates the factors affecting development of the accounting system in a particular country from the determinants of the development of accounting models all over the world, which, as indicated by the Gray's classification from 1998, include "ecological", "geographic" and "demographic factors". This has its consequences related to distinguishing several accounting models all over the world: Anglo-Saxon (British-American) and continental⁶¹.

Figure 4



Explanation: ujęcie – approach.

Source: adaptation of the considerations of J. Zuchewicz, *Perspektywy rozwoju modeli rachunkowości na świecie (Perspectives for development of accounting models all over the world)*, *Zeszyty Naukowe Uniwersytetu Szczecińskiego (Academic Journals of the University of Szczecin) no. 668, "Finanse, Rynki Finansowe, Ubezpieczenia" ("Finances, Financial Markets, Insurance") no. 41 2011, p. 344.*

University no. 668, *Finanse, Rynki Finansowe, Ubezpieczenia ("Finances, Financial Markets, Insurance") no. 41/2011, p. 341-350.*

⁶¹ S. Surdykowska, *Rachunkowość międzynarodowa (International accounting)*, Zakamycze, Cracow 1999.

Similarly to the case of the accounting models being in force, the shape of tax systems results from the rule of evolutionary changes taking place in economic, social and historical conditions⁶². J. Ickiewicz considers that the complex nature of the tax system implies the need for synchronisation of particular elements, not only internally, but also with other regulations (e.g. regulations related to accounting, under the balance sheet law)⁶³. Practice shows that the components of tax systems are sometimes inconsistent and not always harmonised with the legal environment. M. Stępień⁶⁴ believes that it would be desired to achieve some degree of convergence between the balance sheet and tax law. This economist claims that "the balance sheet law...should be correlated with a stable tax system, based on solid principles, which should contribute to the unification of the principles of creating one of the basic economic variables".

A farm manager, just like a small/middle-sized entrepreneur, has to take into account increasingly more complex economic (on different levels, even including global trends), social, legal and cultural conditions⁶⁵. The shape of the tax system (e.g. type of public levies, taxes, amounts of tax rates, as well as system of reliefs and preferences), as a consequence of the solution regarding record-keeping of economic events, along with reporting are a result of various determinants, including historical factors. As indicated by M. Matejun and E. Kaczmarek, "the forms of personal income tax, characteristic for small and medium enterprises, significantly determine their functioning and development". This conclusion also partially applies to the agricultural sector entities, covered by the income tax from special production types⁶⁶.

⁶² J. Ickiewicz, *Obciążenia fiskalne przedsiębiorstw (Tax burdens of companies)*, PWE, Warsaw 2009, p. 21.

⁶³ Ibidem, p. 22.

⁶⁴ M. Stępień, *Zarządzanie polityką rachunkowości w aspekcie prawa podatkowego (Management of the accounting policy in terms of tax law)*, Economic Studies of the Univ. of Economics in Katowice, 2014, no. 201, "Polityka rachunkowości a kształtowanie wyniku finansowego" ("Accounting policy and shaping the financial output"), p. 327-336.

⁶⁵ M. Matejun, E. Kaczmarek, *Wpływ form opodatkowania podatkiem dochodowym na funkcjonowanie małych i średnich przedsiębiorstw (Impact of forms of taxation with income tax on the operations of small and medium enterprises)*, [in:] *Wyzwania i perspektywy zarządzania w małych i średnich przedsiębiorstwach (Challenges and perspectives of management in small and medium companies)*, collective work edited by M. Matejun, C.H. Beck, Warsaw 2010, p. 224.

⁶⁶ Ibidem, p. 224.

D. Wędzki⁶⁷, on the basis of a review of Anglo-American literature, included in the factors shaping value for owners of business entities⁶⁸: factors concerning sales (related to market share, as well as sales profit rate), factors concerning tangible fixed assets, factors associated with circulating capital, factors pertaining to cost of capital, factors of "effective tax rate". Attention should be paid to the distinction of the last group of factors, which includes, e.g., taxation law shaping the tax rate, transfer prices in international structure, the amount of tax cover, which should be understood as reduction in the tax basis.

To sum up, tax regulations affecting the financial policy of a business entity substantially affect the scope and form of financial reporting generated by a business organisation. Considering adjustment of the accounting and financial reporting system to the constantly increasing information needs of entities of the SME sector, T. Kondraszuk presented his assumptions of the accounting policy concept, given the acronym CZARA⁶⁹. Figure 5 presents a schematic diagram, concerning the structure of the accounting system (linking policy with practice), while Table 10 describes the scope of particular stages. In the opinion of T. Kondraszuk, the accounting policy in the SME sector involves adopting some kind of cycle of interrelated and logically consistent activities. The attention should be paid to the linking of the accounting policy with the area of strategic management.

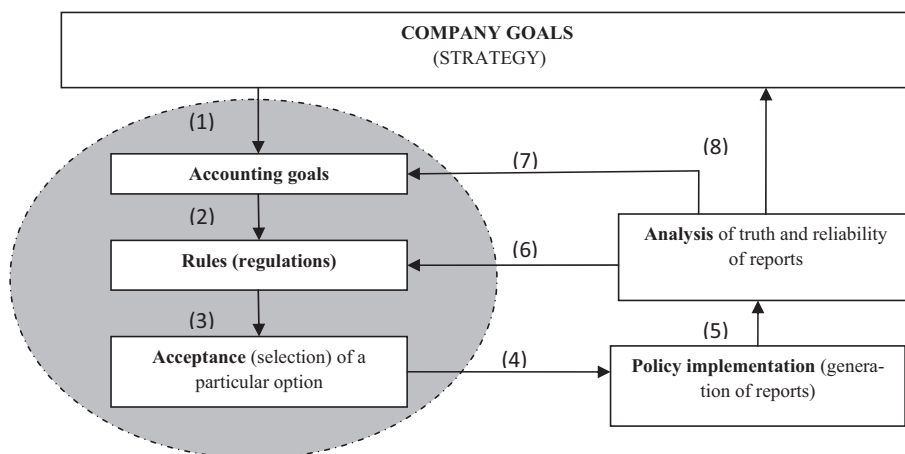
⁶⁷ See D. Wędzki, *Analiza wskaźnikowa sprawozdania finansowego (Index analysis of financial statement)*, Publishing House Wolters Kluwer Poland, Cracow 2006, p. 26.

⁶⁸ This refers to, first of all, "the company's value" (including "market value" and "income value", and not the "goodwill" (to which the Polish balance sheet law refers)). It should be emphasised that "income value", defined as the capacity to generate income (for instance, in the case of agricultural holdings) /profit depends on many factors, including financial factors. A. Sokół, *Wartość przedsiębiorstwa (The company's value)* [in:] *Ekonomika przedsiębiorstwa (Economics of a company)*, edited by J. Engelhardt, CeDeWu, Warsaw 2011, p. 177-179.

⁶⁹ Acronym of (C)ele, (Z)asady, (A)kceptacja, (R)ealizacja, (A)naliza (Goals, Principles, Acceptance, Implementation, Analysis). T. Kondraszuk, *Uproszczona ewidencja czy uproszczona sprawozdawczość w sektorze mikroprzedsiębiorstw? (Simplified record-keeping or simplified reporting in the sector of microenterprises?)*, [in:] *Academic Papers of the Wrocław University of Economics, Przyszłość rachunkowości i sprawozdawczości – założenia, zasady, definicje. Kierunki zmian prawa bilansowego w Polsce (The future of accounting and reporting – assumptions, principles, definitions. Directions of changes in the balance sheet law in Poland)* (ed. by Z. Luty, A. Łakomiak, A. Mazur), Publishing House of the University of Economy in Wrocław, Wrocław 2013, p. 74-83.

Figure 5

The concept of the accounting policy structure



Source: modification of figure of T. Kondraszuk, *Simplified record-keeping or simplified reporting in the sector of microenterprises?* [in:] *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, Academic Papers of the Wrocław University of Economics, The future of accounting and reporting – assumptions, principles, definitions. Directions of changes in the balance sheet law in Poland* (ed. by Z. Luty, A. Łakomiak, A. Mazur), Publishing House of the University of Economy in Wrocław, Wrocław 2013, p. 74-83.

Table 10

Stages within the concept of the accounting policy

Stage	Scope
Stage 1	Determination of "expectations of the entity and its management with regard to the goals and requirements to be met by the accounting system" – identification of objectives and tasks of the accounting system.
Stage 2	Recognition of "implementation variants of the assumed goals of the accounting system using binding principles and regulations" (applies mostly to provisions of the tax law and the balance sheet law).
Stage 3	Adoption of an option (variant) of the accounting policy, taking account of different conditions (e.g. environmental, cultural) determining the development of the entity.
Stage 4	Implementation of the binding accounting policy, followed by preparation of financial statements.
Stage 5	Analysis of the obtained statements "in terms of their compliance with the binding accounting policy and the standards of financial reporting, as well as usability assessment of the adopted solutions".
Stage 6	Assessment of deviations resulting from implementation of the accounting policy.
Stage 7	Verification of goals to be met by the record-keeping and financial reporting system.
Stage 8	Taking corrective and adjusting actions, i.a. resulting from analyses in terms of the new accounting policy.

Source: adaptation of the considerations of T. Kondraszuk, *Simplified record-keeping or simplified reporting in the sector of microenterprises?* [in:] *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, Academic Papers of the Wrocław University of Economics, The future of accounting and reporting – assumptions, principles, definitions. Directions of changes in the balance sheet law in Poland* (ed. by Z. Luty, A. Łakomiak, A. Mazur), Publishing House of the University of Economy in Wrocław, Wrocław 2013, p. 74-83.

The prominent American theoreticians within the scope of finance, Z. Bodie and R.C. Merton, emphasise the significance of standardisation of financial information delivered through accounting systems (referred to as "the most important part of the financial system" of enterprises)⁷⁰. From the point of view of an entrepreneur of the SME sector (in a sense – a family farm meets the criteria of SME), a problem hindering decision-making regarding management is the so-called "information gap", particularly concerning the area of financial decisions. Information gap, originating with information economics, involves lack of balance between demand and supply for financial information (a kind of discrepancy between the resource of the possessed information and the resource necessary e.g. for the decision-making process⁷¹).

As rightfully claimed by J. Gad and E. Walińska, there is a need to separate the "economic and financial system" of a company, as per the definition in the macro perspective⁷². J. Gad and E. Walińska define this system as "a set of instruments, principles and solutions governing the company's operations, determined by internal regulations"⁷³. Figure 6 presents a modified, as compared to the original version, conceptual scheme, illustrating the correlation between the "economic and financial system" and the company's policy. The above scheme suggests that "the company's policy", which is undoubtedly affected by regulations concerning the tax law and the balance sheet law, determines the shape of the economic and financial system of the company. The authors referred to above describe in detail the economic and financial system, paying attention to its particular components (domain subsystems), including "the tax system, covering – above all, on the operational plane – various kinds of documents generated for the purposes of tax authorities".

⁷⁰ Z. Bodie, R.C. Merton, *Finanse (Finance)*, PWE, Warsaw 2003, p. 93.

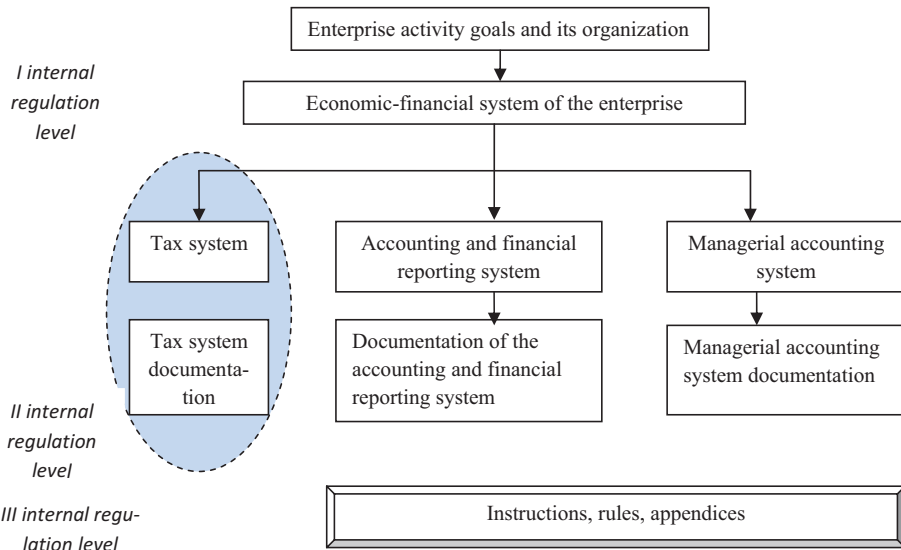
⁷¹ See R. Borowiecki, M. Kwociński, *Informacja w zintegrowanej Europie. Koncepcje i narzędzia zarządzania wobec wyzwań i zagrożeń (Information in the integrated Europe. Concepts and management tools versus challenges and hazards)*, Difin, Warsaw 2006, p. 139.

⁷² J. Gad, E. Walińska, *System ekonomiczno-finansowy a system rachunkowości w zarządzaniu jednostką – teoria a praktyka (The economic and financial system versus the accounting system in management of an entity – theory and practice)*, Academic Papers of the Wrocław University of Economics, no. 1196, *Finanse, Bankowość, Rachunkowość (Finance, Banking, Accounting)* 6, 2008, p. 34-46.

⁷³ *Ibidem*, p. 36.

Figure 6

Basic systems building upon the economic and financial system of a company and their documentation



Source: adaptation of figure: J. Gad, E. Walińska, *The economic and financial system versus the accounting system in entity management - theory and practice*, Research Papers of the University of Economics in Wrocław, No. 1196, Finance, Banking, Accounting 6, 2008, p. 39. (on the basis of the study: E. Walińska, E. Śnieżek, *Documentation of the accounting and financial reporting system of an entity – selected practical aspects in the scope of cash flows*, Accounting Department, Faculty of Management, University of Łódź).

It should be noted that simplified solutions with regard to accounting records and financial reporting are usually targeted at the needs of tax accounting, which focuses on record-keeping for tax purposes⁷⁴. As indicated by I. Olchowicz, specific solutions with regard to tax accounting do not have to be separate, or even contradictory to the financial accounting system⁷⁵. As opposed to the accounting principles, the tax law principles usually are "variable, immediate, economically partial, dependent on the current tax policy"⁷⁶. With regard to specific record-keeping solutions, simplified forms rely mostly on the cash method, which, in consequence, leads to creation of reporting with limited information capacity (e.g. using the revenue and expense ledger). Simplifications relating to

⁷⁴ See I. Olchowicz, *Rachunkowość podatkowa (Tax accounting)*, op. cit., p. 11.

⁷⁵ Ibidem, p. 51-53.

⁷⁶ Ibidem, p. 53.

income tax collection⁷⁷ from business entities (above all SMEs), are usually in the form of: tax card, lump sum on recorded revenues, the possibility to use the tax revenue and expense ledger.

In the opinion of the Ministry of Finance⁷⁸, although defining "tax preferences" is quite troublesome, which results from many ambiguous terminological perspectives, the definition adopted after OECD emphasises the effect of preferences at the micro level – reduction in the size of tax burdens from the point of view of the entity obliged to pay the public levy⁷⁹. This results in macroeconomic impacts, i.e. reduction in budgetary income. Furthermore, the so-called simplified forms of taxation constitute an element of tax standard. This is due to the fact that these forms of taxation are used, above all, because of their simplicity and low handling costs, which is not tantamount to reduction in tax burdens⁸⁰. Table 11 presents simplifications in tax accounting essentially targeted at the SME sector. It also takes account of the use of the tax revenue and expense ledger, which constitutes a popular instrument for record-keeping and tax reporting in the SME sector. The attention was paid to the disadvantages and advantages resulting from the use of separated simplifications. The main restriction is the very narrow scope of tax optimisation, as well as the significantly lower information capacity of financial data, generated from the tax revenue and expense ledger.

⁷⁷ In the case of value added tax, there is a separate category of the so-called minor taxpayer, who can use cash method of VAT settlement, as well as make quarterly advance payments. See Article 2 (25) letters a-b of the Act of 11 March 2004 on Value Added Tax (Journal of Laws Dz.U. of 2011, No. 177, item 1054, as amended).

⁷⁸ Ministry of Finance, *Preferencje podatkowe (Tax preferences)* (No. 5), http://www.finanse.mf.gov.pl/documents/766655/4245146/20150506_preferencje+podatkowe+w+Polsce.pdf (date of access: 8.11.2015).

⁷⁹ J. Jaworski, K. Sokołowska, *Informacja finansowa w zarządzaniu małym przedsiębiorstwem. Analiza czynników kształtujących potrzeby informacyjne menedżerów z wykorzystaniem modeli logitowych (Financial information in management of small enterprises. Analysis of factors shaping information needs of managers with the use of logit models)*, "Master of Business Administration", 5/2011 (162), 2011, p. 3-24.

⁸⁰ Ibidem, p. 11.

Table 11

Selected simplifications in tax accounting – taxation of SME entities

Type of simplified form	Taxpayers entitled to use it	Disadvantages	Advantages
Tax card	Only natural persons conducting business activity and civil partnerships of natural persons. Conditions: limit concerning the number of hired employees, contractors, not conducting non-agricultural business operations, only specific types of economic operations are authorised.	<ul style="list-style-type: none"> • Very limited range of tax optimisation. • Quite restrictive limits concerning the number of hired employees, as well as the type of conducted operations. • Rigid fixed rates, and additionally the need to pay back tax debt in the case of losses. 	<ul style="list-style-type: none"> • No obligation to fix the tax assessment basis (the amount paid monthly to the account of the tax revenue office) • Exemption from the obligation to keep tax registers, file tax returns and make an advance payment (leaving only employment records) • Flexibility: the possibility of applying a lump sum on recorded revenues or income tax on the general terms
Lump sum on recorded revenues	Natural persons conducting non-agricultural business operations: <ul style="list-style-type: none"> • (1) starting-up business activities or receiving revenues from non-agricultural operations < the equivalent of EUR 150 000 (in the preceding year), • Resignation from using the tax card • Exclusion of certain activities from this form of taxation (e.g. selected freelance professions). A similar form of taxation covers the clergy 	<ul style="list-style-type: none"> • Limited range of tax optimisation (e.g. no category of tax deductible costs). • Record-keeping obligations (recording revenue, fixed assets for given fiscal year, storing receipts), self-calculation of payable tax, submission of annual tax return. 	<ul style="list-style-type: none"> • Flexibility: the possibility of applying income tax on general terms (but not within the year). • Sometimes fiscal benefits from taxation of turnover.
Tax revenue and expense ledger*	Entities authorised to use the ledger include: <ul style="list-style-type: none"> • natural persons, generating revenue from non-agricultural business operations, who additionally chose general principles or flat tax as a form of revenue taxation • general partnerships of natural persons, civil partnerships of natural persons, partnerships, which received net revenues < the equivalent of EUR 1.2 million (in the previous financial year). 	<ul style="list-style-type: none"> • Limited scope of financial reporting • Recording limited to: <ul style="list-style-type: none"> • recording revenues from sales, and also other revenues • recording "purchase of commercial goods and basic materials, as well as ancillary costs related to these purchases" • expenses: remuneration, other expenses related to business operations. 	<ul style="list-style-type: none"> • The possibility of applying exemptions (e.g. due to age, health, profile of operations). • Option of using the ledger in an electronic form. • The possibility of including costs concerning other expenses – on the accrual or cash basis.

Explanation: *prepared on the basis of: *Księga przychodów i rozchodów (Revenue and expenditure ledger)*, <http://poradnik.wfirma.pl/-ksiega-przychodow-i-rozchodow> (date of access: 9.11.2015).

Source: own study on the basis of binding legislation (state as at 30.11.2015).

Table 12 compares the limits in business activities, exceeding of which is tantamount to resignation from using simplifications. It is worth paying attention to the need to use an equivalent of the limit amount (expressed in euro in the balance sheet law) in zlotys.

Table 12

Limits (binding in the fiscal year 2015) in business activities, related to the possibility of using the simplified forms

Type of limit in business activities	Amount [EUR]	Amount [PLN]
Upper limit of revenue for 2014 eligible for taxation using a lump sum recorded in 2015	150 000	626 880
Upper limit of revenue for 2014 enabling quarterly settlement of the lump sum recorded in 2015	25 000	104 480
Lower limit of revenue for 2014 obligating to keep accounting books in 2015	1 200 000	5 010 600

Source: study on the basis of the data of the Ministry of Finance.

To sum up, development of a business entity depends on the quality of output data generated by the accounting system, supplying the financial analysis system. In the case of entities of the SME sector, an increasingly more important role will be played by the integration of the financial accounting system with the objectives of the tax system. Taking into account the specific economic and organisational nature of family farms in Poland, covered by agricultural tax or income tax from special production types, the previous regulations did not obligate the managers to keep detailed records for the needs of tax accounting. However, it may be expected that a need will arise to create a system for simplified financial record-keeping (at first in the model perspective), with a certain source being solutions functioning for some actions of the Rural Development Programme, RDP 2014-2020 (e.g. "Restructuring small farms" or "Modernisation of agricultural holdings", in which beneficiaries are obliged to keep, in the form of a table, the so-called farm revenue and expense records).

2.2. Simplifications in agricultural income tax systems in Europe – the cases of Germany and France

The diversity of tax systems, including their components, matching the socio-economic conditions of different countries, results in the need to separate simplifications with regard to record-keeping and reporting for the purposes of tax returns (in general, tax accounting systems). The agricultural sector undergoes continuous processes of economic and organisational transformation. This applies to all European countries, and results from varying pace of structural changes. The growing role of the service sector in the economy became a trend,

particularly visible in the countries of Central and Eastern Europe⁸¹. It involves, e.g., increase in employment in the service sector and reduction in other sectors, i.e. industry and agriculture. Although the share of GDP in the agricultural sector, or its share in generating gross added value in economy gradually decreases (it applies to all European countries)⁸², farmers are still responsible for ensuring supply of some public goods (e.g. landscape), as well as are "depositories" of soil. This is an important premise for creating and directing a set of financial intervention instruments to the agricultural sector (e.g. under the CAP subsidies system). Tax systems, shaped by legislators on the national level, perform a particular function⁸³. Considering the way the agricultural sector is treated by tax systems of different countries, we can distinguish⁸⁴: countries without tax preferences for agriculture (agricultural holdings can use similar preferential instruments to the SME sector entities) and countries with tax preferences for agriculture, however, their scope and level differs significantly even between countries with a similar degree of socio-economic development (the examples of which are Poland and Czech Republic).

It should be noted that preferences concerning agricultural income tax may have the form of⁸⁵:

- simplifications concerning calculation of tax revenue, including the possibility to determine income by estimation, as is the case, e.g., in Belgium, France, Germany, Poland (as income tax from special types of agricultural production);

⁸¹ See E. Szymańska, *Serwicyzacja gospodarki jako źródło jej transformacji (Servicisation of the economy as the cause of its transformation)*, "Optimum. Studia Ekonomiczne" ("Optimum. Economic Studies"), No. 1 (73), 2015, p. 97-109; S.M. Szukalski, *Serwicyzacja gospodarki i industrializacja usług (Servicisation of economy and industrialisation of services)*, "Handel Wewnętrzny" ("Domestic Trade"), no. 4-5, 2004, p. 47-53.

⁸² See A. Mrówczyńska-Kamińska, *Znaczenie rolnictwa w gospodarce narodowej w Polsce, analiza makroekonomiczna i regionalna (The importance of agriculture in the national economy of Poland, macroeconomic and regional analysis)*, Zeszyty Naukowe (Academic Journals) of the Warsaw University of Life Sciences – Problemy Rolnictwa Światowego (Problems of Global Agriculture), vol. 50 (20), 2008, p. 96-108.

⁸³ In the EU, we can hardly speak about a significant level of harmonisation or standardisation of tax (excluding a few areas, e.g. related to double taxation).

⁸⁴ J. Kulawik, P-Y. Lelong, J. Pawłowska-Tyszko (academic supervision), M. Soliwoda, *Systemy podatkowe w krajach Unii Europejskiej (Tax systems in the EU Member States)*, Multiannual Program Report no. 83, IAFE-NRI, Warsaw 2013; J. Pawłowska-Tyszko (academic supervision), M. Soliwoda, *Dochody gospodarstw rolniczych a konkurencyjność systemu podatkowego i ubezpieczeniowego (Income of agricultural holdings and competitiveness of the tax and insurance system)*, Multiannual Program Report no. 121, IAFE-NRI, Warsaw 2013.

⁸⁵ Ibidem.

- instruments directly reducing the amount of due tax (tax reliefs, personal exemptions, transaction-related exemptions, exclusions) – apply also to countries, where agricultural activity is regarded as economic activity, similarly to entities in the SME sector (e.g. Denmark, Finland, UK);
- simplifications with regard to the treatment of agricultural holdings by tax authorities (e.g. in Germany, where it is rather an administrative sanction).

In practice, tax systems, including also diverse structures of agricultural income taxation, take account of the use of the set of the abovementioned forms of preferences. It may prove to be quite interesting to analyse the dependencies (Table 13) between the share of GDP in the agricultural sector, the economic efficiency of the agricultural sector⁸⁶, the degree and range of the offered preferences (as tax "privilege", evaluated on the basis of analysis of the regulations of tax law). The classification of countries proposed in Table 13 is based on substantial simplifications and may constitute a further basis for in-depth empirical studies.

Table 13

Dependency matrix: the importance of agriculture in the national economy
- sectoral effectiveness - tax privilege

Specification	The importance of agriculture in the national economy	Sectoral effectiveness	Tax "privilege"	Examples
I	Low	Low	Low	
II	Low	Low	High	
III	Low	High	Low	
4	Low	High	High	Germany
V	High	Low	Low	
VI	High	Low	High	Poland
VII	High	High	Low	The Netherlands
VIII	High	High	High	

Explanation: in the case of the first two variables ("The importance of agriculture in the national economy" and "Sectoral effectiveness"), we can use a median to separate groups of objects representing a low or high level of a given feature, while for the last variable, the classification is based on subjective evaluation of the tax legislation.

Source: prepared by Michał Soliwoda.

⁸⁶ The "total output/total input" variable (SE132) may be used for the one-dimensional measurement of economic and organisational effectiveness, see: European Commission, FADN Public Database, http://ec.europa.eu/agriculture/rica/database/database_en.cfm (date of access: 10.11.2015). An interesting proposal is to use the ranking methods according to synthetic effectiveness indicators, by means of the development method presented in the publication of T. Kuszewski and A. Sielska. See T. Kuszewski, A. Sielska, *Efektywność sektora rolnego w województwach przed i po akcesji Polski do Unii Europejskiej (Efficiency of the agricultural sector in voivodeships before and after Poland's accession to the European Union)*, "Gospodarka Narodowa" ("National Economy"), No. 3 (247), 2012, p. 19-42.

German and French tax solutions concerning agricultural income tax result mainly from the historical conditions⁸⁷, as well as social conditions. Simplifications in the agricultural income tax system in Germany and France involve:

- (1) the possibility to determine tax revenue, earned from agricultural activities by estimation – this form is chosen by ca. 25% of farms in Germany, while in France, 60% of farms uses estimated income and 40% of farms – simplified forms of agricultural accounting. Simplified forms (except for estimated income in France) require recording of economic events (to a limited extent, e.g. income and expense register in Germany, revenues and costs in France),
- (2) paying large attention to tax assessment in Germany, which is a derivative of the income categories (corresponds to 18 times the pure income obtained on a farm, without debts, but including hired workforce, under normal operating conditions and in the long term⁸⁸); new Länder use replacement value,
- (3) adjustment of fiscal year to the specific nature of agricultural production (i.e. from 1 July to 30 June of a given year)⁸⁹.

The situation of German and French farmers may to a certain degree be made easier by highly developed services within agricultural and fiscal consulting, which facilitates the use of various tax optimisation tools by managers. This applies particularly to entities, whose tax result is determined on the basis of accounting profit/loss⁹⁰. In Germany, in the case of smaller scale of operations (considering the criterion of profit from business operations, turnover, or tax/economic value of arable land), a simplification can be used, treating tax revenue as the difference between tax income and the costs of its generation (records based on cash accounting and reporting similar to Cash Flow). In France, the basis for taxation with fixed tax is determined on the basis of estimated revenue, specified every year, announced by the Ministry of Finance. Determination of estimated revenue uses: collective reference fee appropriate for a given sector (including types of farming and farm structure), among others,

⁸⁷ See R. Doluschitz, C. Morath, J. Pape, *Agrarmanagement*, op. cit., p. 225-241; R. Wesche, E-M. Paas, *Besteuerung der Landwirtschaft und Forstwirtschaft*, Aid Infodienst, Bonn 2009, p. 39-59.

⁸⁸ Ibidem, p. 34.

⁸⁹ See R. Wesche, Paas E-M., *Besteuerung...*, op. cit., 39-59, J. Kulawik, P-Y. Lelong, J. Pawłowska-Tyszko (academic supervision), M. Soliwoda, *Systemy podatkowe...*, op. cit., p. 34-39.

⁹⁰ European Federation of Agricultural Consultancy, *Influence of Tax Regimes for Agricultural Businesses on Production Structures: A Comparative Analysis of Five European Countries: Germany, Belgium, Denmark, France and Netherlands*, December 2012, <http://www.efac.net/wp-content/uploads/2014/02/Influence-of-Tax-Regimes-for-Agricultural-Businesses.pdf> (date of access: 15.11.2015).

fixed average unit and individual properties of a farm (quantity of land, number of animals, quantity of hectolitres, etc.).

The research surveys, carried out by R. Kisiel and K. Idzikowska⁹¹, suggest that the farmers themselves – income tax taxpayers in Germany⁹² – expressed the least kind opinion on "stability" (which may be surprising) and "transparency" of tax regulations – as evaluation criteria of taxation systems. On the other hand, consulting activity, as well as the system of reliefs and tax exemptions, were assessed as sufficient. The criterion of "length of tax terms" received the highest ranks, which may also constitute some form of simplification.

In conclusion, German and French tax system has a complex structure. In order to decrease the amount of troubles related to calculation of tax burdens, farmers were offered a certain set of simplifications, the availability of which depends on the criteria related to the farm size (and, in consequence, usually to the production, economic and financial outputs of farms). However, it should be emphasised that these solutions, according to many economists, require adjustments. Frequently, income calculated in the simplified accounting system is lower or higher than income calculated in the complete accounting system. It is influenced by the type and size of a farm. The research carried out by OECD suggests that, in France, lump sum income is lower than income calculated under the accounting system. In the case of farmers earning EUR 20 000, the declared taxable income constitutes ca. 7% of income calculated under agricultural accounting. This significantly lower taxable income in the lump sum system, as well as low administrative costs are the main reason for selecting this system. Underestimation of the tax revenue occurs very often in the lump sum system, since EU subsidies are included in actual income and do not affect the amount of estimated income.

3. Suggestions for income taxation in Polish agriculture and their assessment

Any changes occurring within the scope of taxation of Polish agriculture apply to agricultural tax and minor adjustments in taxation of special types of agricultural production. They are intended to approximate Polish taxation principles

⁹¹ R. Kisiel, K. Idzikowska, *System opodatkowania rolnictwa w Polsce oraz w wybranych krajach Unii Europejskiej (Taxation system for agriculture in Poland and in the selected EU countries)*, Zeszyty Naukowe (Academic Journals) of Warsaw University of Life Sciences - Polityki Europejskie, Finanse i Marketing (European Policies, Finance and Marketing), No. 12 (61), 2014, p. 64-78.

⁹² Ibidem.

of the agricultural sector to the solutions in the EU Member States. From the perspective of simplified accounting, it can be concluded that the agricultural tax and the estimated income in the special types of agricultural production constitute an equivalent of solutions of this kind. It is supported by the following factors: adoption of estimation standards and conversion rates translating into the amount of income, simple and clear principles of income calculations, simplicity of tax collection, limited possibilities of tax optimisation. Proper income estimation (especially calculations of agricultural tax) would require real accounting data (inflows, expenses, revenues, costs), which it currently lacks, and which could constitute the basis for income evaluation. It should be noted that, in simplified solutions in Germany and France, calculation of estimated income requires information coming from simple accounting records made on farms (inflows, expenses, revenues, costs), which do not require complicated income recalculations, and are used for income estimation. This way, an interdependence is achieved between the amount of the earned income and the actual values, and thus between profitability and the amount of the paid tax.

However, the size of the agricultural tax burdens is not related to profitability of agricultural holdings. In spite of the undeniable advantages of this tax (low transaction costs, simplicity of calculation, low burden on farmers' incomes), its structure is outdated and not related to the income of a farm. Furthermore, as emphasised by I. Cholewa and G. Nachtman, farmers exempted from paying income tax are more and more commonly subject to social disapproval; they are regarded as a social group, which is privileged both in terms of fiscal burdens, as well as benefits from public funds, while the beneficiaries obtaining the most from this system are large, economically strong farms. That is why methods have been sought for years, which would adjust agriculture taxation principles to the common solutions related to agricultural income. From among such methods, attention should be paid to the following options, described in detail by L. Goraj, J. Neneman and M. Zagórski, constituting the proposal of the indicated authors:

- Option I – covering personal income tax – PIT (scale or flat, with all reductions, on identical terms as in the case of other taxpayers), supplemented with property tax on land at the baseline level of PLN 50 per 1 comparative (reference) hectare. In this option, it is planned to include direct subsidies in the tax revenue.

- Option II – the structure of this suggestion is based on Option I, with the only difference being that this solution includes a possibility of deducting property tax on land from income tax.
- Option III – this option refers to taxation with income tax, PIT, as in Option I (with inclusion of direct subsidies in the revenue), or introduction of a lump sum of income tax (from recorded revenues), in the amount of 3%.
- Option IV – exemption of farms with the size of up to 6 ha from any tax, other farms would pay a flat tax on general terms, at the rate of 19%.

The quoted authors also point out the proposal of the Ministry of Finance. This proposal constitutes the latest assumptions for the draft Act of 4 June 2013 on Personal Income Tax from Agricultural Activities, amending other acts. It constitutes realisation of the announcement of Donald Tusk, resulting from the expose delivered on 18 November 2011. The assumptions for the draft Act suggest that the legislator intends to introduce income tax in agriculture, thus covering income from agricultural activities under the income tax system. As a result of the introduced changes, the tax burden should be diversified, depending on the earned income.

The key provisions appearing in legislative proposals include, among others:

- preparation of new, separate act regarding taxation of income (revenues) obtained by natural persons conducting agricultural business activity (no separate act is planned regarding agricultural corporate income tax).
- repealing of the agricultural tax and the tax from special types of agricultural production,
- introduction of agricultural property tax. It will cover only those past taxpayers of the agricultural tax, who:
 - conduct agricultural activities and are relieved from income tax,
 - are covered by agricultural income tax with regard to land not used for agricultural activities,
 - do not conduct agricultural activities on agricultural land,
- exemption of direct subsidies from taxation,
- mandatory record-keeping of economic events, which means that the basis for calculating income tax will be, first of all, the accounting records,
- agricultural income tax will be included in the revenues of gminas.

The legislator, when drafting the Act, adopted a number of detailed assumptions, which exhibit many similarities to the solutions binding in conducting non-agricultural business operations. The tax entity will be a natural person obtaining revenues from agricultural activities, including activities conducted on

land not belonging to the taxpayer. When conducting joint activities, the tax obligation will rest with all persons conducting agricultural activities, who will be settled in proportion to the share in ownership of the farm, given that it will be possible to indicate a person exercising tax rights and obligations. The settlement period will constitute a calendar year, regarded as a fiscal year. Additionally, the marketing year preceding the given fiscal year will constitute the income settlement period. Book records will constitute the basis for determination of the amount of income, as well as selection of the form of taxation. It is planned to introduce the obligation to keep accounting records by all taxpayers of income tax, regardless of the amount of the earned income. The tax obligation will depend on the amount of income obtained in the marketing year preceding the fiscal year. The following income limits are planned:

- in the transitional period (first two years of the Act being effective) – 1st year – PLN 200 000, 2nd year – PLN 150 000,
- after the transitional period - PLN 100 000.

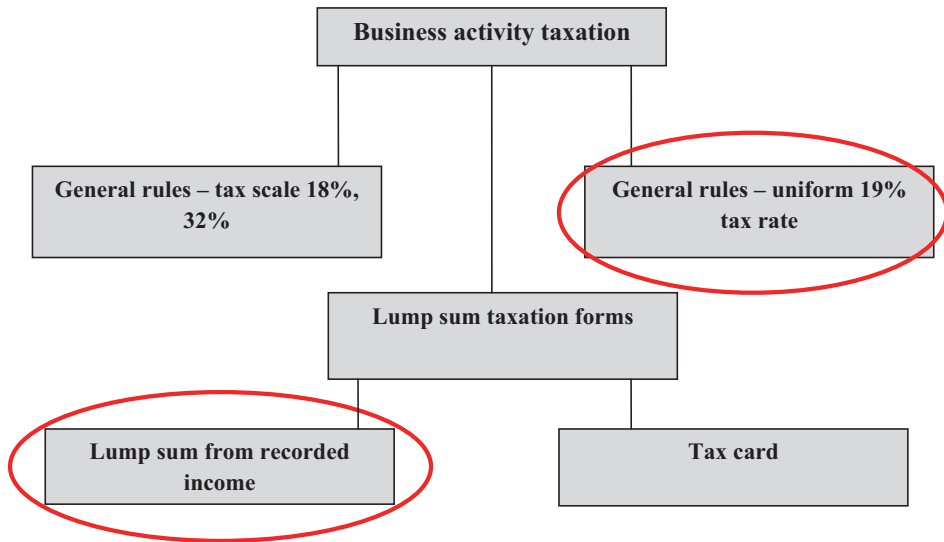
VAT invoices and VAT RR invoices will constitute the basis for determination of the income limit in the first year of the Act being effective. In the subsequent years, income will be recorded in appropriate accounting devices. Taxation will cover income from agricultural activities (plant production, animal production, rearing, breeding, agritourist services – up to 5 rooms, small-scale processing – up to the value of PLN 5000, leasing) and services provided with the use of assets originating from the farm. Taxable income will not include subsidies, products used for the needs of the family, household (the so-called internal consumption), as well as payable disposal of real estate and other assets used for the needs of the farm.

In Poland, the taxpayers of personal income tax may use taxation on general terms (tax scale or flat rate), or lump sum (fixed) taxation forms, which is presented in Figure 7. On the other hand, the farmers will be able to use:

- taxation on general terms, i.e.: flat tax rate 19% – the income will be determined on the basis of a tax revenue and expense ledger (when the income limit exceeds PLN 150 000 and is not higher than EUR 1 200 000) or accounting books (obligatorily for the limit of over EUR 1 200 000 or optional in the case of lower income),
- lump sum on recorded revenues, determined on the basis of income records kept in an agricultural holding. The amount of the lump sum has been set at the level of 4% of the obtained income. This form will be available for taxpayers obtaining income in the previous tax year in the amount not higher than EUR 150 000 (Figure 7).

Figure 7

Forms of income taxation with personal income tax – the present situation in business activities and legislation proposals for agriculture



Key: Forms of taxation proposed for agriculture are marked with a red oval.

Source: Prepared by Joanna Pawłowska-Tyszko.

Farmers, who do not obtain income higher than PLN 100 000 in a given fiscal year, will pay property tax. The basis for property tax for farms conducting agricultural activities will be their area of arable land, expressed in comparative fiscal hectares. The tax rate is supposed to amount to PLN 185 per comparative fiscal hectare and will be subject to revaluation. In the case of land, where no agricultural activity is conducted, a higher rate of this tax will be binding. The basis for taxation will constitute revenue or income from business operations, depending on the chosen form of taxation. In the case of lump sum on recorded revenues, the basis for taxation will be income, without the possibility of reducing it by the incurred costs of income generation. In the case of keeping a tax revenue and expense ledger, taxation will cover revenue being the difference between income and costs of income generation. As opposed to other economy sections, in the case of farms keeping records in the tax revenue and expense ledger, it is not planned to determine income using the difference between stocktakings. In the case of accounting books, taxable income will be determined on the basis of correctly kept accounting books and will be reduced by the tax-free amounts. Costs of agricultural income generation will constitute costs borne to

obtain income. Apart from standard costs, including the value of materials directly used in production, these costs also include expenditures for legal services, accounting services, remuneration of employees and value of annual depreciation. The costs will not include the value of records, which will be recorded only quantitatively. The Act provides for applying a specific set of reliefs and deductions to income from agricultural activities. Both in the case of taxation on general terms, as well as the lump sum, income will be reduced by social security premium of farmers, loss on business operations, donations, relief on Internet and rehabilitation relief. Farmers will be also able to deduct from the due tax the health insurance premium. Taxation on general terms will also entitle to joint settlement with a spouse, as well as benefitting from relief on children.

3.1. Assessment of the proposed solutions – selected issues of practical implementation

In order to assess the proposed solutions, particular attention has been paid to the proposal of the Ministry of Finance and it has been analysed in terms of internal and external justice, economic efficiency, competitiveness of agricultural holdings and sustainability of the sector. FADN data have been used to evaluate the effects of the proposed solutions. The calculations have been made only for 2013. Accounts apply only to agricultural holdings currently paying the agricultural tax, namely potential beneficiaries of the proposed reform. The following data were used in the calculations: farm income (sales excluding inventory), costs of income generation (distributed according to the principles adopted in legislative proposals), amount of comparative fiscal hectares of arable land. Costs of income generation (expenses constituting the cost) exclude paid taxes (including agricultural tax and tax from special types of agricultural production). Income deductions include paid social security premiums of farmers. The tax level was calculated according to the proposed draft, i.e. assuming lump sum on recorded income (4 % on the amount of income), flat tax (19% on the calculated income) and property tax. Similar simulations were performed by G. Nachtman and I. Cholewa⁹³.

The conducted data analysis suggests that the effects of introduction of the tax reform proposed by the Ministry of Finance would be particularly severe for farms with high income, where costs of income generation are high. This applies

⁹³ G. Nachtman, I. Cholewa, *Analiza przewidywanych skutków wprowadzenia reformy podatkowej w polskim rolnictwie na tle rozwiązań niemieckich (Analysis of the expected effects of introduction of the tax reform in the Polish agriculture in comparison to German solutions)*, ZER, IAFE, Warsaw 2014.

particularly to horticultural holdings (where income tax would be over 26-30 times higher than the present agricultural tax), as well as pig and poultry holdings (where income tax would be almost 15 times higher than the previous agricultural tax) (Table 14). As indicated by G. Nachtman and I. Cholewa⁹⁴, such huge differences between income tax calculated according to the new proposals and the present agricultural tax may be slightly overestimated, considering that agricultural tax makes use of many reliefs, exemptions and reductions, and the data presented in the FADN system provide average values. Furthermore, farms representing these types would not have the possibility to use fixed tax, due to exceeding the limit authorising the use of this form of taxation. This means that the proposed taxation principles would significantly increase the burdens of such farms as compared to the presently binding burdens. The burdens of farms of other specialisations would also increase, and this increase would not be as high as in the case of the already discussed farms, which is presented in Table 14. Assuming direction of production as a grouping criterion and averaging the results for particular types did not allow for identifying groups of farms, which would obtain income lower than PLN 100 000 and would be obliged to pay property tax.

Table 14

The impact of changes in replacing the agricultural tax with income tax on the economic condition of farms, according to the dominant direction of production (2013)

Direction of production (ha AUU)	Fixed tax (multiplicity, in PLN thousand)	Flat tax (multiplicity, in PLN thousand)	Income (in PLN thousand)
Field crops	2.1 (9.9)	1.7 (7.7)	252.3
Horticultural crops	26.2 (14.6)	29.7 (16.6)	366.5
Permanent crops	5.5 (7.8)	6.8 (9.7)	196.1
Dairy cattle	7.5 (10.5)	9.2 (12.8)	262.7
Pigs and poultry	(no possibility of using – limit of EUR 150 000)	15.2 (23.4)	690.9
Multi-directional	3.6 (7.7)	2.2 (4.7)	194.4

Key: Amount of income tax in PLN thousand in brackets; Reduction in income after taxation (multiplicity of agricultural tax)

Source: prepared by Joanna Pawłowska-Tyszko on the basis of FADN data.

⁹⁴ G. Nachtman, I. Cholewa, *Analiza przewidywanych skutków wprowadzenia reformy podatkowej w polskim rolnictwie...* op. cit.

Grouping of farms according to the area size classes made it possible to notice that farms using an area of up to 20 ha of UAA, due to the size of the earned income, would not pay the income tax (flat or fixed), but only the property tax. It is also confirmed by the research carried out by G. Nachtman and I. Cholewa, from which it can be concluded that the tax calculated for these groups of farms would be 2-3 times higher than the paid agricultural tax. It turns out that the potential taxpayers of property tax would constitute approximately 33-34% of all individual farms.

Taking into account the specific economic and organisational nature of family farms in Poland, the previous regulations do not obligate the managers to keep detailed records for the purposes of tax accounting. However, it may be expected that a need will arise to create a system for simplified financial record-keeping (at first in the model perspective), with a certain source being solutions functioning for some actions of the Rural Development Programme, RDP 2014-2020 (e.g. "Restructuring small farms" or "Modernisation of agricultural holdings", in which beneficiaries are obliged to keep, in the form of a table, the so-called records of revenues and expenditures of a farm).

Table 15

The impact of changes in replacing agricultural tax with income tax on the economic condition of farms, according to area size of a farm (2013)

Area groups of farms (ha AUU)	Fixed tax	Flat tax	Income (in PLN thousand)
Very Small (<= 5 ha)	(no tax obligation – limit of PLN 100 000)	(no tax obligation – limit of PLN 100 000)	46.
Small (5-10 ha)	(no tax obligation – limit of PLN 100 000)	(no tax obligation – limit of PLN 100 000)	87.9
Medium-small (10-20 ha)	(no tax obligation – limit of PLN 100 000)	(no tax obligation – limit of PLN 100 000)	95.2
Medium-large (20-30 ha)	5.7 (7.4)	5.2 (6.7)	186.0
Large (30-50 ha)	6.0 (11.4)	5.5 (10.3)	286.2
Very large (> 50 ha)	4.4 (22.9)	3.8 (19.4)	579.5

Key: Amount of income tax in PLN thousand in brackets; Reduction in income after taxation (multiplicity of agricultural tax).

Source: prepared by Joanna Pawłowska-Tyszko on the basis of FADN data.

The proposed income tax structure lacks development-oriented, modernisation and investment solutions, which could consist in introducing additional reliefs and exemptions or tax preferences, e.g. for farms implementing certain investments, creating positive external effects. The previous presented solutions do not perform their function. However, such solutions would bring many benefits. Income tax could be used as an instrument of stimulation and modernisation of agricultural holdings, increasing the incentive of farmers to undertake investment, modernisation and development-oriented activities. Lack of these solutions may adversely affect competitiveness and sustainability of the agricultural sector.

When assessing the proposed solutions in terms of social justice, it should be emphasised that the proposed manner of income taxation does not entirely eliminate this problem. As it turns out, smaller farms, generating lower income, may pay higher taxes (property tax) than farms generating higher income, which will contribute to injustice inside the sector. Such a situation will also lead to abuse of tax legislation. The threshold of obligatory taxed income with income tax (PLN 100 000) remains problematic. Such a provision will result in exclusion of farmers from the income tax and their obligation to pay the property tax. Implementation of such a solution may lead to the abuse, as medium-sized farms will aim at either not increasing their farm size or hiding some part of their turnover, in order to prevent migration to the group liable to higher tax. Such a situation will foster solidification of the previous agrarian structure, as well as limit searching for additional income, both in agriculture, as well as beyond.

When summing up the abovementioned solutions, it should be emphasised that replacing the agricultural tax with income tax substantially deteriorates the economic situation of farmers. Selection of the form of taxation will have significant impact on the level of the paid tax, and thus on economic condition of farms. Lack of progressive tax will significantly reduce the possibility to make decisions concerning tax optimisation. The postulated flat tax responds to change in the economic situation of farms to a smaller extent than progressive taxation, while the fixed tax is not strictly correlated with the economic situation of farms and has to be paid in the case of loss. The proposed lump sum rate on recorded revenues, amounting to 4%, seems too high and is hardly competitive as compared to flat tax, amounting to 19%. According to the estimations, in 2013, only ca. 8% of farms would not be able to benefit from the lump sum form of income taxation; they would need to pay the tax on general terms, at the rate of 19% (limit for the lump sum – EUR 150 000). This means that almost all po-

tential taxpayers could become lump-sum farmers. In the analysed year, about 33-34% of farms would have been exempted from the obligation of paying income tax (assuming that the income limit will amount to PLN 100 000), for the limit of PLN 200 000 – ca. 61%, while for the limit of PLN 150 000 – ca. 50% of farms. The indicated taxpayers would be covered by the agricultural property tax, the amount of which, at the proposed rates, would be comparable with the currently paid agricultural tax.

4. Social security in agriculture

4.1. Theoretical introduction: literature overview

The key role in exercising the right to social security for all citizens, in reducing poverty and social inequality, as well as in supporting development favouring social inclusion, is served by the social security policy⁹⁵. According to M. Księżopolski⁹⁶, social security is understood as "the state of being free from scarcity of material means of subsistence and existence of real guarantees of full development of an individual". These means may have the form of cash, goods, as well as be provided in the form of care. Social security is thus analysed in terms of achieving the desired states, mainly in the socio-economic perspective, and ensuring this security is the main purpose of social welfare, which, as a result, is understood as a system of benefits focused on guaranteeing an adequate standard of living to the members of the society⁹⁷. T. Szumlicz also regards social security system to be "all social devices (present in institutional forms; cre-

⁹⁵ As indicated by B. Jagusiak, the social security policy is particularly important in the case of the possibility of decrease in income from own work or total loss of the previous source of income as a result of such circumstances as: illness, disability, senility, unemployment, death of the breadwinner in the family, reaching the retirement age. B. Jagusiak, *Bezpieczeństwo socjalne współczesnego państwa (Social security of the contemporary state)*, Difin, Warsaw 2015, p. 8.

⁹⁶ M. Księżopolski, *Systemy bezpieczeństwa społecznego w krajach nordyckich (Social security systems in Nordic states)*, Warsaw 1988.

⁹⁷ I. Sierpowska, *Pomoc społeczna jako administracja świadcząca. Studium administracyjno-prawne (Social welfare as public service. A legal and administrative study)*, LEX a Wolters Kluwer business, Warsaw 2012. B. Szatur-Jaworska also refers to the social benefits system (cash, in kind or in the form of services) - aiming at providing individuals and families with social welfare, being one of the key categories of the social policy - using the collective notion of social security. B. Szatur-Jaworska, *Bezpieczeństwo socjalne - wybrane pieniądze świadczenia społeczne (Social security - selected cash social benefits)*, [in:] P. Szukalski, B. Szatur-Jaworska (ed.), *Aktywne starzenie się - przeciwdziałanie barierom (Active ageing - overcoming barriers)*, Publishing House of the University of Łódź, Łódź 2014, p. 44.

ated at the initiative of the state), used for ensuring a fixed social security standard to specific entities"⁹⁸.

Although the need for a social security system is commonly acknowledged, the data of the International Labour Organisation suggest that the majority of the world population does not use it to the full extent. Only 27% of the world's population have access to a comprehensive social security system, while 73% is covered by it only partially or not at all⁹⁹. Ensuring proper social protection¹⁰⁰, including access to and use of the social security benefits¹⁰¹, has for a long time applied to and been in the centre of interest of, first of all, wealthy countries, which have developed advanced institutional solutions in order to protect their citizens against various social risks¹⁰² and have created appropriate

⁹⁸ T. Szumlicz (scientific supervision), *Metoda ubezpieczenia w systemie zabezpieczenia społecznego (Insurance method in the social security system)*, [in:] *Spoleczne aspekty rozwoju rynku ubezpieczeniowego (Social aspects of the insurance market development)*, T. Szumlicz (ed.), Publishing House of the Warsaw School of Economics, Warsaw 2010.

⁹⁹ In the majority of industrialised countries of the world, social protection covers nearly 100% of all citizens, in the countries with an average level of development, this ratio ranges from 20 to 60%, while in the region of Sub-Saharan Africa and southern Asia, it amounts to about 5-10% of the working population. ILO, Facts on Social Security, www.ilo.org (23.11.2015).

¹⁰⁰ ILO, World Social Protection Report 2014/15. *Building economic recovery, inclusive development and social justice, Geneva 2014, Xxi*. Social protection schemes (through implementation of such slogans as decent work, access to education, health care, safety of food and income) responds to various dimensions of poverty and hardship. If there was no such protection, a greater part of the society would be exposed to risk of living below the poverty threshold and/or for such a state to remain for the subsequent generations. *Social protection: A development priority in the post 2015-UN development agenda*, UN System Task Team on the Post-2015 UN Development Agenda, UN, New York, May 2012, p. 3.

¹⁰¹ J. Auleytner indicates that social protection is one of social functions of the state (other functions include, among others, health, safety, employment, education), performed using organisational, financial and legal instruments. J. Auleytner, *Polityka społeczna, czyli ujarzmienie chaosu socjalnego (Social policy – taming the social chaos)*, Pedagogical University of TWP in Warsaw, Warsaw 2002, p. 36.

¹⁰² The catalogue of social risks appeared for the first time in the Recommendation of the International Labour Organisation Concerning Income Security adopted in 1944 in Philadelphia. It included the following risks: diseases, maternity, disability, death of a breadwinner, accident at work, unemployment, old age, unexpected expenses. *Income Security Recommendation, 1944 (No. 67), Recommendation Concerning Income Security*, International Labour Organisation. Convention of ILO of 1952 concerning Minimum Standards of Social Security, with regard to the risk of disease and the risk of maternity, included expenses on health benefits, as well as the risk of poverty, distinguishing family benefits. As indicated by T. Szumlicz, the catalogue of risks still remains valid and we could identify therein the risk of senility and sudden shortage. T. Szumlicz, *Ubezpieczenie w polityce społecznej. Teksty i komentarze (Insurance in social policy. Texts and comments)*, Social Risk Management Institute Foundation, Warsaw 2015, p. 184.

support mechanisms for the poorest citizens. On the other hand, in most less developed countries of the world, this protection is omitted, disregarded or implemented with the use of inappropriate legal and institutional solutions¹⁰³.

In the perspective of the International Labour Organisation, social security is one of the four forms of social protection. Apart from the abovementioned, the forms of social protection include also common social benefits (i.e. social provision), social welfare and systems of benefits in the private sphere, related to employment or provided individually. However, ILA indicates that the first form, i.e. social security, in the traditional European and Polish terminology, corresponds to social insurance¹⁰⁴.

T. Szumlicz defines social insurance as a method of financing social risk, ensuring insurance protection of a household¹⁰⁵. He indicates that it is distinguished from other principles of social security (provisional and philanthropic), first of all, by: funding with premiums and insurance funds generated thereby, entitlement to benefits resulting from being a member of the risk insurance community, as well as the presence of contractual redistribution, in which the amount of paid premiums depends on the risk "introduced" to the given risk community, and losses incurred only by some of its members are proportionally compensated from the previously created fund¹⁰⁶.

Taking account of the socio-economic and political significance of the social security system, two of its sections can be simultaneously distinguished: employee and social insurance for farmers¹⁰⁷. Not only in Poland, but also in other

¹⁰³ A. Norton, C. Conway, M. Foster, *Social protection concepts and approaches: implications for policy and practice in international development*, Centre for Aid and Public Expenditure, Overseas Development Institute, London 2001, Working Paper 143.

¹⁰⁴ W. Muszalski, *Ubezpieczenie społeczne. Podręcznik akademicki (Social insurance. Academic textbook)*, Polish Scientific Publishers PWN, Warsaw 2004.

¹⁰⁵ T. Szumlicz, *Ubezpieczenie społeczne. Teoria dla praktyki (Social insurance. Theory for practice)*, Branta Publishing House, Bydgoszcz-Warsaw 2006, M. Kawiński, *Ubezpieczenie społeczne a finanse osobiste (Social insurance and personal finance)*, [in:] *Doubezpieczenie społeczne. Idea i kontynuacja (Supplementary social insurance. The idea and follow-up)*, M. Kawiński (ed.), Publishing House of the Warsaw School of Economics, Warsaw 2015.

¹⁰⁶ T. Szumlicz, *Ubezpieczenie w polityce społecznej. Teksty i komentarze (Insurance in social policy. Texts and comments)*, Social Risk Management Institute Foundation, Warsaw 2015.

¹⁰⁷ D. Walczak, *Uwarunkowania funkcjonowania systemu zabezpieczenia społecznego rolników w Polsce (Determinants of the functioning of the social security system of farmers in Poland)*, TNOiK, Toruń 2011a, K. Kolasieński, *Modele i funkcje ubezpieczeń społecznych (Models and functions of social insurance)*, Publishing House of the Nicolaus Copernicus University, Toruń 2009, H. Pławucka, *Systemy ubezpieczenia społecznego (Social insurance systems)*, [in:] *Problemy prawa ubezpieczeń społecznych (Problems of social insurance law)*, B. Wagner (ed.), Publishing House of the Jagiellonian University, Cracow 1996.

countries providing the basis for the agriculture of the European Union, farmers have separate social security systems¹⁰⁸, differing in terms of legal, organisational and social conditions, developed on the ground of the historical and economic perspective of different countries¹⁰⁹, though their introduction occurred significantly later than in the case of other socio-professional groups¹¹⁰. Autonomous social security systems for farmers exist in seven European countries, i.e. apart from Poland, in Austria, Finland, France, Greece, Luxembourg and Germany, and each of them regards these systems as an integral part of their agricultural policy in the scope of care for the environment and development of rural areas^{111,112}. These countries are associated in the industry network ENASP (*European Network of Agricultural Social Protection*). In some countries, such as the Netherlands, UK, Cyprus, Czech Republic, Denmark, Slovak Republic, Hungary, farmers belong to a uniform, common social security scheme¹¹³.

The premise for creating the ENASP was the need for providing better protection of the interests of the farming population and its mutual cooperation at the European level, as well as creating a representation of farmers for dealing with EU authorities¹¹⁴. Among the ENASP countries, Poland has the highest budget subsidy ratio with the highest percentage of the population employed in agriculture¹¹⁵. The system is perceived as costly, unjust and – due to low premiums – preferential, due to which for years we have been observing a strong pres-

¹⁰⁸ B. Tryfan, *Ubezpieczenie społeczne rolników polskich na tle doświadczeń wybranych krajów Unii Europejskiej (Social insurance of Polish farmers in comparison to experiences of the selected European Union Member States)*, "Legal, Economic and Social Operations", 1999, Book 1.

¹⁰⁹ E. Koch, *Aspekte der Agrarsozialversicherungssysteme in Europa*, Soziale Sicherheit in der Landwirtschaft, 2/2011.

¹¹⁰ J. Pawłowska-Tyszko (ed.), M. Podstawka, P-Yves Lelong, S. Filipek-Kaźmierczak, *Zmiany systemu ubezpieczeń społecznych rolników a finanse państwa (Changes in the social insurance system of farmers versus state finances)*, Institute of Agricultural and Food Economics, State Research Institute, Warsaw 2011.

¹¹¹ D. Musiał, *Zróżnicowanie ubezpieczeń społecznych rolników w wybranych krajach Europy (The diversity of social insurance of farmers in the selected European states)*, Economic Annals of the Kujawy and Pomorze University in Bydgoszcz, no. 7, Bydgoszcz 2014.

¹¹² M. Dziubińska-Michalewicz, *System zabezpieczenia społecznego ludności rolniczej w Polsce (Social security system of the farming population in Poland)*, Information no. 595, Bureau of Studies and Expert Studies, Warsaw 1998.

¹¹³ D. Walczak, *Uwarunkowania funkcjonowania...*, op. cit.

¹¹⁴ Z. Giersz, *Systemy ubezpieczenia i zabezpieczenia społecznego rolników w krajach OEC (Social insurance and protection systems of farmers in OEC states)*, Foundation of Aid Programs for Agriculture SAEPR, FAPA, Warsaw 2013.

¹¹⁵ S. Fronczak, *Reforma KRUS po raz kolejny w Rekomendacja UE dla Polski (Reform of KRUS once again in the EU Recommendation for Poland)*, Announcement no. 57 of 19 August 2014, FOR.

sure put on its reforming. It is indicated that maintaining the current social security system of farmers through its subsidising constitutes a burden for people working beyond agriculture, and thus contributes to their lower employment and hinders relocation of workforce from the ineffective agriculture to more effective off-agricultural sectors of the economy¹¹⁶. Farmers, next to miners, the so-called uniformed services, judges and prosecutors, belong to the so-called privileged group of entities. The privileges for farmers, which were introduced in 1990 as an element of aid for farmers as a result of difficulties related to the economic transformation in Poland¹¹⁷, consist in the possibility to pay significantly lower premiums than those paid in the common system by insured employees or entrepreneurs.

Although, on the one hand, providing insurance protection to agricultural producers is perceived as an economic and moral necessity, resulting from the principle of social solidarity, on the other hand, the society does not agree with the present operational principles of the social security system for farmers. The dissatisfaction results from its strict dependence on the state budget, which causes the system to be rigid and limits the freedom of decision-making in the public finance sector¹¹⁸.

By definition, the agricultural system was supposed to be based on low premiums and low benefits. However, the situation of Polish agriculture has significantly changed as compared to the situation at the beginning of the 1990s. The changes introduced in the agricultural social security system do not keep up with the needs. This applies not only to the consistently high subsidies to the system, but also to poor impact of intra-group solidarism¹¹⁹.

According to Figure 8, social solidarism should be based upon consideration of the community, rather than merely the individual, though it should be emphasised that individualism does not contradict solidarism and should not replace an individual's independence¹²⁰. As a result, the social security system for farmers

¹¹⁶ M. Góra, J. Litwiński, U. Sztanderska, *Rekomendacje (Recommendations)*, [in:] *Dezaktywizacja osób w wieku okołoemerytalnym. Raport z badań (People in pre-retirement age exiting the labour force. Survey report)*, Department of Economic Research and Forecasts, Ministry of Labor and Social Policy, Warsaw 2008.

¹¹⁷ J. Wilkin, *KRUS posiadaczy ziemskich (KRUS of the land owners)*, *Gazeta Wyborcza*, 06.03.2010.

¹¹⁸ J. Pałowska-Tyszko (ed.), M. Podstawka, P-Yves Lelong, S. Filipek-Kaźmierczak, *Social Insurance System for Farmers and its impact on public finances*. Institute of Agricultural and Food Economics National Research Institute, Warsaw 2013.

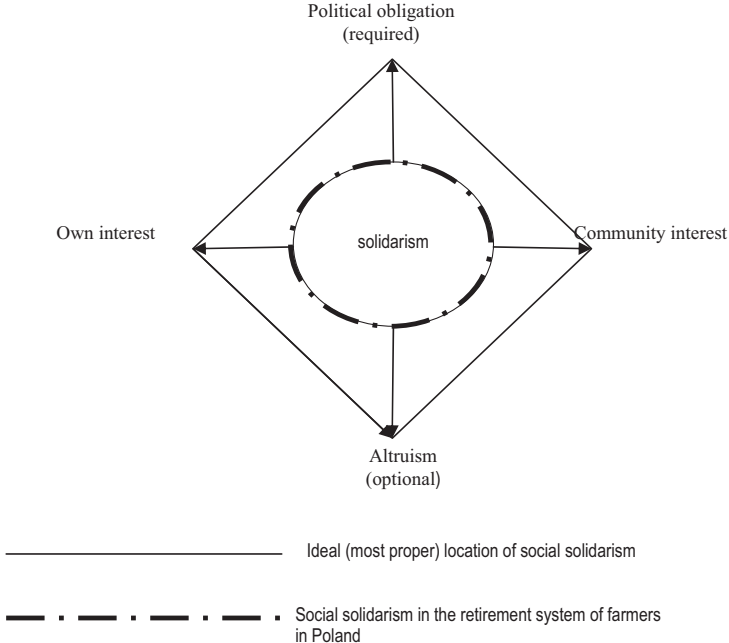
¹¹⁹ D. Puślecki, *Nowe zasady przyznawania emerytur rolniczych (New principles of granting agricultural pensions)*, *Przegląd Prawa Rolnego (Review of Agricultural Law)*, No. 2 (13), 2013.

¹²⁰ T. Szumlicz, *Ubezpieczenie w polityce...* op. cit.

should be assessed negatively. For more than 20 years, more than PLN 15 billion has been paid out every year from the budget to the social security system for farmers. Nevertheless, no member of the rural environment (or parties representing this environment in the Polish Parliament) has ever presented this problem from the point of view of the definition of solidarism. After all, we can talk about solidarism only if it is motivated by all the indicated factors, while if these behaviour patterns are not observed, we may say that the retirement system is based on the interest of a group or simply is a political pension, and is not based on solidarism¹²¹.

Figure 8

The place of social solidarism in the pension system for farmers in Poland, as compared to the ideal position of social solidarism



Source: own study on the basis of [Walczak, Pieńkowska-Kamieniecka 2015] and [Nicolaidis and Viehoff 2012].

Excessively expanded solidarism, affecting the state budget, has a very strong influence on future generations, which will be obliged to repay financial liabilities under payouts of the current retirement and disability pensions. The

¹²¹ D. Walczak, S. Pieńkowska-Kamieniecka, *Solidarity on the example of farmers' pension insurance in Poland*, Agrarian Perspectives XXIV. Global Agribusiness and the Rural Economy, Proceedings of the 24th International Scientific Conference, September 16-18, 2015, Prague, Czech Republic.

absence of any reforms with regard to reduction in participation of the state in this system additionally increases the burdens of future generations. The longer the changes are not introduced, the greater the likelihood of a conflict, in this case between generations, as well as between different groups obliged to fund the abovementioned systems of privileges in social security¹²².

4.2. Review of the legislation binding in 2004-2014

Social insurance of farmers is regulated by the Act of 20.12.1990¹²³. Since then, the Act has been amended many times, affecting changes in the number of the insured and beneficiaries of the system. The highest growth in the number of beneficiaries was recorded at the beginning of the transformation period, when the rural areas experienced significant effects of socio-economic transformations in Poland. This situation caused reduction in the burden of the social assistance institution, limiting the costs of its functioning, since the benefits from the social security system for farmers partially took over its tasks¹²⁴. In the later years, the number of beneficiaries decreased, as well as the ratio of the number of people receiving benefits to the number of the insured. At the end of 2014, 1.43 million people were insured in KRUS, while 1.20 million received benefits.

One of the most significant changes that occurred during the past decade in the social security system of farmers was introduced by the Act of 2.04.2004 amending the Act on Social Insurance of Farmers and certain other acts¹²⁵. Under the Act, farmers-entrepreneurs, who wanted to remain in KRUS, were obliged to pay double premiums for agricultural social insurance at the full rate¹²⁶. In order to close the gaps in the system, the period of covering by farmer's social insurance was extended from one to three years, until the right to remain in the agricultural system is obtained, in the case of start-up of non-agricultural business operations.

¹²² A. Lowenstein, *Solidarity–conflict and ambivalence: testing two conceptual frameworks and their impact on quality of life for older family members*, The Journals of Gerontology Series B: Psychological Sciences and Social Sciences 62(2), 2007.

¹²³ *Act on Social Insurance of Farmers*, consolidated text, Journal of Laws Dz.U. of 2015, item 704, as amended.

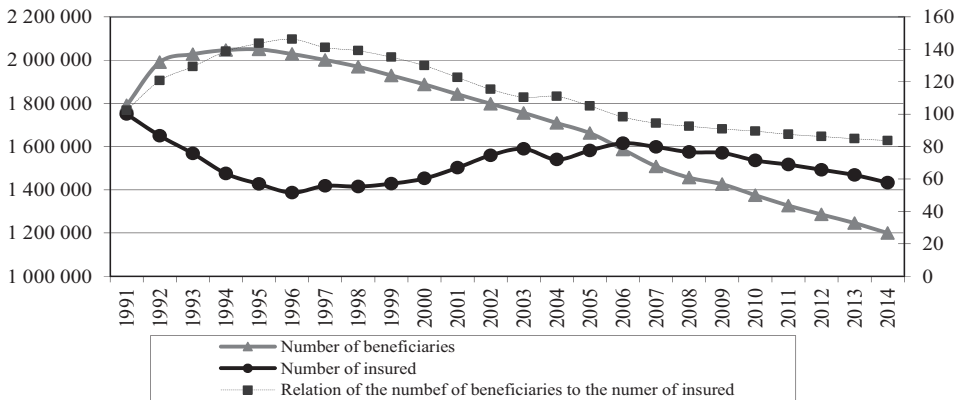
¹²⁴ D. Walczak, *Uwarunkowania funkcjonowania...*, op. cit.

¹²⁵ Journal of Laws Dz.U. No. 91, item 873.

¹²⁶ Therefore, we can say that a supplementary obligation has been imposed on farmers-entrepreneurs to buy social insurance in order to seal the system. D. Puślecki, *Zakres ochrony rolników prowadzących pozarolniczą działalność gospodarczą w ustawie o ubezpieczeniu społecznym rolników (The scope of protection of farmers conducting non-agricultural business operations in the Act on Social Insurance of Farmers)*, Przegląd Prawa Rolnego (Review of Agricultural Law), No. 2 (15) 2014, p. 100-101.

Figure 9

The number of beneficiaries and people insured in KRUS, as well as the relation between them (in %)



Source: prepared by Sylwia Pieńkowska-Kamieniecka on the basis of KRUS data, www.krus.gov.pl (25.11.2015).

Moreover, the principles of granting benefits for inability to work in agriculture were appropriately arranged. KRUS was obliged to each time replace disability pension with old age pension, when a pensioner reached the retirement age and proved being insured for 20 years (women), and 25 years (men)¹²⁷. The amendment of 2004 excluded from KRUS farmers conducting non-agricultural business activities taxed on general terms, which was not only met with dissatisfaction in the agricultural environment, but also constituted a violation of the freedom of business activities¹²⁸. In connection with the above, the subsequent amendment of 2005¹²⁹ allowed farmers and household members to be once again covered by insurance, after they were excluded due to the form of business

¹²⁷ J. Pawłowska-Tyszko J. (ed.), M. Podstawka, P-Yves Lelong, S. Filipek-Kaźmierczak, *Zmiany systemu ubezpieczeń społecznych...* op. cit.

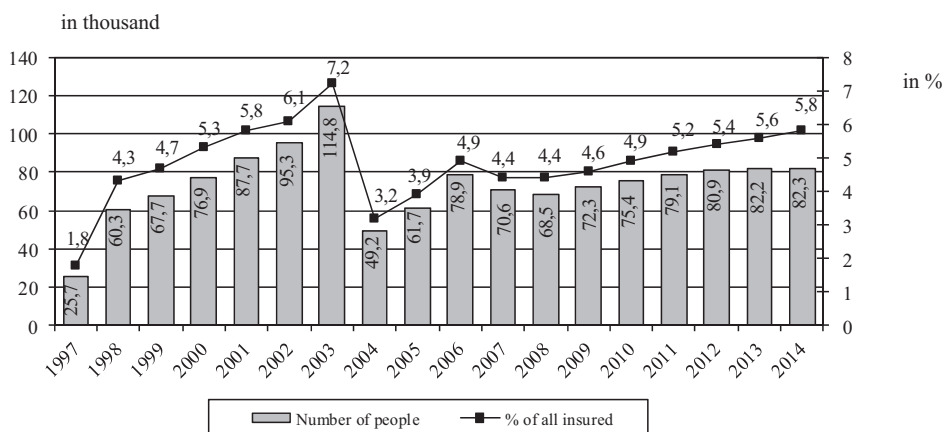
¹²⁸ On 13 March 2006 (file ref. no. P 8/05, Journal of Laws Dz.U. of 2006 No. 46, item 335), among others, the Constitutional Tribunal ruled that the marginal nature of business operations (referring to the fact, adopted by the legislator, that non-agricultural business operations should have a small scale and merely support this income) is not proved by the type of taxation, but by the level of earned income. Therefore, exclusion of farmers, who at the same time carried out non-agricultural activities taxed on general terms, from social security, in a situation, when the obtained income does not exceed the threshold amount, bears the hallmarks of discrimination.

¹²⁹ Act of July 2005 amending the Act on the Social Insurance System and certain other acts, Journal of Laws Dz.U. No. 150, item 1248.

operations taxation¹³⁰. It should be emphasised that conditioning the possibility to remain in the social insurance system of farmers on the amount of paid tax, also introduced in 2004¹³¹, results in the fact that, on the one hand, a farmer conducting business operations on a small scale, bearing low costs of these operations, can be excluded from the system, while on the other hand, a farmer conducting the activities on a large scale, reporting high costs of income generation, may remain in the system, and consequently his/her tax liability will be non-existent, and in an extreme case – he/she may even bear losses on account of the conducted activities¹³². The amendment of 2004 caused a significant, as compared to 2003 and the previous years, decrease in the number of people covered by social insurance for farmers simultaneously conducting non-agricultural business activities. On the other hand, the amendment of 2005 contributed, though no longer to such an extent as before, to an increase in the number of farmers-entrepreneurs (Figure 10).

Figure 10

People covered by social insurance of farmers simultaneously conducting non-agricultural business operations in 1997-2014 (as at the 4th quarter of a given year)



1997 - as at the end of the 1st quarter

Source: prepared by Sylwia Pieńkowska-Kamieniecka on the basis of KRUS data, www.krus.gov.pl (25.11.2015)

¹³⁰ D. Puślecki, *Zakres ochrony rolników prowadzących pozarolniczą działalność gospodarczą w ustawie o ubezpieczeniu społecznym rolników (The scope of protection of farmers conducting non-agricultural business operations in the Act on Social Insurance of Farmers)*, Przegląd Prawa Rolnego (Review of Agricultural Law), No. 2 (15) 2014.

¹³¹ If the amount of income tax payable for the previous year exceeded the amount of PLN 2528 binding at that time. This so-called annual threshold value is subject to annual indexation using the index of total prices of consumer goods and services. In 2015, this value amounts to PLN 3204.

¹³² D. Walczak, *Uwarunkowania funkcjonowania...*, op. cit.

Subsequent changes were introduced by the Act of 21 November 2008 on Funded Pensions¹³³, which covered farmers born after 31 December 1948. The Act regulates the issue of combining insurance periods and adding together premiums from the common and the agricultural social security system. It was stated that if a farmer has been covered by agricultural insurance for the sufficiently long time (at least 25 years) and, during the period of professional activity, has been covered by insurance in the common system, then, after reaching the retirement age, he/she will acquire the right to an agricultural pension and a pension from the non-agricultural system of FUS and OFE (if he/she has been a member of OFE and has gathered the minimum capital specified by law).

Significant changes with regard to being covered by farmer's social insurance, as well as determination of the premium assessment basis occurred in 2009. The solutions, adopted in the act of 1990, concerning old age and disability premium, were supposed to cause it to be the same financial burden both for farms with low income, as well as for those, which would not have any problem paying even a higher premium. Functioning of such a way of financing the system was met with common criticism and resulted in adoption of the Act of 24 April 2009 amending the Act on Social Insurance of Farmers¹³⁴, by virtue of which, since 1 October 2009, the amount of the premium has been differing depending on the area of arable land of the farm. The obligation to pay higher premium covers farmers managing agricultural holdings with the area of arable land exceeding 50 comparative fiscal hectares. The changes in this respect did not relate to health, accident and maternity insurance. Additionally, the commonly criticised non-divisible quarterly assessment of premiums has been replaced with a monthly divisible premium. However, the introduced changes have not substantially improved public finance, due to the fact that the higher premium covered a small number of the insured (ca. 2% of all insured), who contributed to the Pension Fund ca. PLN 30 million, which only slightly contributed to the reduction in budget subsidy to the Pension Fund¹³⁵.

Changes with regard to the social security system for farmers related not only to social insurance, but also the common healthcare system. Until February 2012, people insured in KRUS had not been paying premiums to NFZ (National Health Fund). This state was changed after issuance of the ruling by the Consti-

¹³³ Journal of Laws Dz.U. of 2008, No. 228, item 1507.

¹³⁴ Journal of Laws Dz.U. No. 79, item 667.

¹³⁵ J. Pawłowska-Tyszko (ed.), M. Podstawka, P-Yves Lelong, S. Filipek-Kaźmierczak, *Zmiany systemu ubezpieczeń społecznych...*, op. cit.

tutional Tribunal on 26 October 2010¹³⁶. The Tribunal concluded that the Article 86 (2) of the Act of 27 August 2004 on Health Care Services Financed from the Public Funds¹³⁷, specifying the obligation of the state budget to fund health insurance premiums of farmers covered by social insurance, regardless of their income level, is inconsistent with the Constitution. Since 1 February 2012, the provisions of the Act of 13 January 2012 on Farmers' Health Insurance Premiums for 2012-2014 have been in force¹³⁸, and their continuation for 2015-2016 has been introduced by the Act of 5 December 2014 amending the Act on Farmers' Health Insurance Premiums for 2012-2014¹³⁹. Currently, farmers managing farms with the size of at least 6 comparative fiscal hectares pay the health insurance premiums for themselves and for other household members working in these farms, in the amount of PLN 1 per 1 comparative hectare. Premiums are also paid by farmers managing farms and dealing with special types of agricultural production, farmers dealing with special types of agricultural production and household members working in these branches, as well as retired persons and pensioners. Farmers conducting agricultural activities on agricultural land smaller than 6 comparative fiscal hectares and household members of farmers working in these farms do not pay any premiums. In their case, the premiums are financed from the state budget, in the amount of PLN 1 per each comparative hectare, per each insured farmer and household member of the farmer. Obviously the healthcare financing system in the agricultural sector requires further changes, based on developing a tax system in agriculture. The amount of premiums transferred to NFZ should correspond to the amount of income earned.

In 2013, under the Act of 11 May 2012 amending the Act on Old Age Pensions and Disability Pensions from the Social Security Fund and certain other acts¹⁴⁰, subsequent changes were introduced in the social security system (old age and disability insurance system) for farmers. These changes concerned the following issues: gradual increase and levelling of the retirement age of women and men employed in agriculture, removal of the so-called early agricultural retirement, introduction of two new retirement benefits, i.e. partial and periodical agricultural old age pensions¹⁴¹, as well as application of new solutions with re-

¹³⁶ File. ref. no. K58/07.

¹³⁷ Journal of Laws Dz.U. No. 210, item 2135, as amended.

¹³⁸ Journal of Laws Dz.U. of 1 February 2012, item 123, as amended.

¹³⁹ Journal of Laws Dz.U. of 2014, item 1935.

¹⁴⁰ Journal of Laws Dz.U. of 2012, item 637.

¹⁴¹ Pursuant to the amendment, early retirement is granted only to those farmers, who, until 31 December 2017, reach 55 years of age in the case of women, or 60 years of age in the case of

gard to payment of agricultural old age and disability pensions. Although in the context of the need for wide-ranging reform of KRUS, these changes may be considered minor, literature emphasises that the target retirement age of 67 for the insured farmers and other household members (identical for women and men) is too high, does not match the specific nature of work on farms and does not take into consideration the health conditions of the population working in agriculture^{142,143}. Also, since the agricultural system is not a funded scheme, the increase of the retirement age will not increase the old age pensions¹⁴⁴.

Another amendment, made by the Act of 23 October 2014 amending the Act on Social Insurance System and certain other acts¹⁴⁵, which came into force on 1 January 2015, introduced the possibility for a farmer insured in KRUS to undertake additional work under contract for mandate or be a member of a supervisory board, as well as to remain in KRUS, provided that the income earned from these activities does not exceed half of the minimum remuneration for work binding in a given year. On the indicated basis, farmers and other household members, who were excluded from KRUS insurance before 1 January 2015, due to concluding a contract for mandate, were also allowed to return to this insurance. However, the provisions of the Act do not apply to persons, whose insurance ceased as a result of the farmer concluding an employment contract or starting additional business operations.

Undertaking the latter while simultaneously managing a farm does not result in exclusion from KRUS. However, for a farmer to be able to be insured in KRUS in such a case, he/she has to meet certain conditions, i.e. before undertaking additional business operations, he/she must be covered by social insurance for farmers to the full extent, continuously for the period of three years; within 14 days from the date of undertaking additional operations, he/she is obliged to submit in the Fund a statement on continuation of the social security for farmers;

men, as well as can prove being covered only by agricultural old age-disability insurance for the period of at least 30 years and have ceased agricultural activities.

¹⁴² H. Szewczyk, *Prawo do emerytury rolniczej. Stan obecny i perspektywy zmian (The right to agricultural old age pension. Current state and prospects of changes)*, (in:) *Współczesne problemy prawa emerytalnego (Contemporary problems of retirement law)*, T. Bińczycka-Majewska, M. Włodarczyk (ed.), LEX a Wolters Kluwer business, Warsaw 2015.

¹⁴³ See also H. Szewczyk, *Rolnicze choroby zawodowe i parazawodowe (Agricultural occupational and paraoccupational diseases)*, *Więś i Rolnictwo (Countryside i Agriculture)* 2012, no. 3.

¹⁴⁴ W. Jagła, *Problemy ubezpieczenia społecznego rolników (Problems of social insurance of farmers)*, Institute of Agricultural and Food Economics, State Research Institute, Multi-Annual Programme 2011-2014, Warsaw 2014.

¹⁴⁵ Journal of Laws Dz.U. of 2014, item 1831.

he/she cannot remain in a service relationship or in an employment relationship, nor can he/she have an agreed right to old age and disability pension, as well as he/she has to meet the tax criterion. The condition is non-exceeding in one year the threshold amount of due tax from revenue on this account. In 2014, this amount was PLN 3166, which means that, in order for a farmer simultaneously conducting both types of operations to be able to remain in the KRUS system, his/her annual income should not exceed ca. PLN 22 000.

4.3. Review of legislative proposals

The discussion about the future of KRUS has been going on in Poland for years, in particular due to the fact that the current social security system for farmers has not significantly changed since 1990. Despite the fact that it is not adapted to the new economic, commercial and agrarian conditions, the problem of its reform still remains topical and unsolved, above all being present in political discussion¹⁴⁶. Various groups of opinions can be found, which postulate several possible options, i.e. from complete dissolution of KRUS to maintaining the present system while modifying its elements.

The dissolution of KRUS¹⁴⁷ as an institution and entrusting its tasks and competences to the Social Security Institution (ZUS) was assumed by the MPs' draft Act on Dissolution of the Agricultural Social Insurance Fund, amending the Act on Social Insurance of Farmers and certain other acts¹⁴⁸, which was submitted to the Sejm on 9 May 2013. Incorporation of KRUS into organisational structures of ZUS would take place in institutional and systemic sense, through integration of both administrative structures (incorporation of HR resource, property substrate, receivables and liabilities of KRUS into ZUS), as well as in terms of public competence (transfer of tasks and obligations from KRUS and the President of KRUS to ZUS and the President of ZUS). Such action would mean dissolution of KRUS as an institution in the Polish legal order, while maintaining – in the opinion of the drafters of the Act – the main functional assumptions of the previous social security system for farmers, with regard to kinds of social insurance of farmers, grounds for acquiring the right to

¹⁴⁶ M. Podstawka, *Mity i prawdy o Kasie Rolniczego Ubezpieczenia Społecznego (Myths and truths about the Agricultural Social Insurance Fund)*, Ubezpieczenia w Rolnictwie. Materiały i Studia (Insurance in Agriculture. Materials and Studies), KRUS 2010, no. 37.

¹⁴⁷ Dissolution of KRUS includes closing the central unit, the regional offices, local offices and other organisational units.

¹⁴⁸ Parliamentary Document no. 1536.

benefits, existence of local agricultural government, as well as principles of functioning of the Contribution Fund¹⁴⁹.

The draft Act on Dissolution of KRUS imposes on the President of ZUS the obligation to undertake necessary organisational and legal activities related, among others, to adjustment of the existing structure of local offices, organisational, registry and information systems of the Institution to the new situation, rationalising employment, taking stock of KRUS property and requesting amendment or adoption of new legal regulations. The draft confers on the President of ZUS the competence to appoint a representative for carrying out the abovementioned activities. The President of ZUS would be supervised by the minister competent for social security, and in the event of observing gross negligence in fulfilment of obligations – dismissed by the Prime Minister. Pursuant to the draft, proceedings in cases already pending and not completed would be conducted on the basis of the previous regulations, all previously undertaken activities, issued acts and adjudications, as well as rulings of the certifying physicians of KRUS, would also remain in force. With regard to material and HR resources, it was indicated that the property of KRUS would be transferred to ZUS, and the contracts, on the basis of which KRUS had the right to use real estate (if the President of ZUS does not express the will to continue the contract within 2 months) would expire after 3 months from the effective date of the Act. The employees of KRUS would become the employees of ZUS (pursuant to Article 23¹ §4 of the Labour Code¹⁵⁰, concerning transfer of a company to a different employer), although it is envisaged that, in the event, when they are not offered new working and salary conditions, or when they do not accept them, the work relations will expire after 3 months from the effective date of the Act. Moreover, ZUS would take over the databases and the archive of KRUS.

Apart from dissolution of KRUS and entrusting ZUS with the tasks previously implemented thereby, other alternative proposed changes also appear, e.g.¹⁵¹ concerning dissolution of the social security system for farmers, with covering people previously insured in KRUS with insurance in the common sys-

¹⁴⁹ Substantiation of the deputy's draft Act on Dissolution of Agricultural Social Insurance Society, amending the Act on the Social Insurance of Farmers and certain other acts, op. cit.

¹⁵⁰ *Act of 26 June 1974, Journal of Laws Dz. U. No. 21, item 94, as amended.*

¹⁵¹ Request for quotation of the Ministry of Agriculture and Rural Development of 7 October 2014 on the order concerning drawing-up of an expert's reports entitled "*Ocena i skutki realizacji Zalecenia Rady UE dla Polski odnośnie likwidacji systemu ubezpieczenia społecznego rolników i włączenia rolników do systemu powszechnego*" ("*Assessment and effects of implementation of the EU Council Recommendation for Poland concerning removal of the social insurance system of farmers and covering farmers with the common system*").

tem (ZUS) on the terms binding therein. Then the farmer would be covered by insurance as an entrepreneur, and the household member – as a person cooperating in business activities. It is also considered to dissolve the social security system for farmers, with the assumption that people conducting commodity agricultural activities insured in KRUS would be transferred to ZUS as entrepreneurs, while the others, i.e. people conducting agricultural activities only for own needs, would become beneficiaries of the labour market and social aid institutions¹⁵².

However, for years, the subject of the broadest discussion has been the option of leaving a separate social security system for farmers, handled by KRUS, along with its thorough reform¹⁵³.

4.4. Assessment of the effects of regulations in the light of financial stability of the state, competitiveness of the sector and economic efficiency of farms

The most often quoted argument for dissolution of KRUS is favouring agriculture as compared to other sectors of the national economy¹⁵⁴. The system is assessed as socially unjust, due to the fact that farmers, as a socio-professional group, with regard to their business operations, resemble entrepreneurs covered by common social insurance, but pay significantly lower premiums as compared to them. In addition, the system is perceived as unjust by the farmers themselves, due to their obligation to pay equal premiums, regardless of the earned profit. The discussed incorporation of farmers into the common social security system on the terms binding therein, where the farmer would be covered by insurance just like an entrepreneur conducting non-agricultural business activities, and the household member – just like a person cooperating in business activities, would trigger, above all, changes in the method of calculating and financing

¹⁵² According to M. Góra et al., the agricultural retirement system is perceived as a tool for subsidising prosperous agricultural companies at the expense of participants of the non-agricultural part of the economy. By creating additional burden, it reduces the efficiency of this part, which affects the efficiency of the whole economy and the well-being of the whole society. Therefore, they propose covering the persons working in the commodity part of the agriculture by the general social security scheme. M. Góra, J. Litwiński, U. Sztanderska, *Rekomendacje (Recommendations)*, [in:] *Dezaktywizacja osób w wieku okołoemerytalnym. Raport z badań (People in pre-retirement age exiting the labour force. Survey report)*, Department of Economic Research and Forecasts, Ministry of Labor and Social Policy, Warsaw 2008, p. 134.

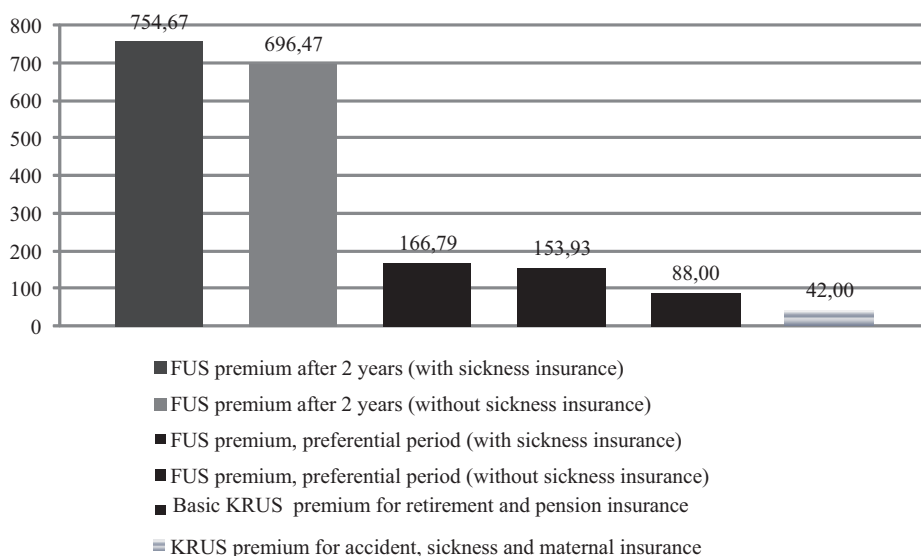
¹⁵³ A. Czyżewski, A. Matuszczak, *KRUS w budżecie rolnym Polski. Fakty i mity (KRUS in the agricultural budget of Poland. Facts and myths)*, Ubezpieczenia w Rolnictwie. Materiały i Studia (Insurance in Agriculture. Materials and Studies), KRUS 2015, no. 53.

¹⁵⁴ K. Duczkowska-Małysz, M. Duczkowska-Piasecka, *Raport w sprawie KRUS (Report on KRUS)*, BCC, Warsaw 2008.

the premium for social and health insurance. These changes would result in a huge increase in contribution burdens of farmers, which would have particularly severe effects for small farms. This results from comparison of the amount of premiums paid to KRUS, as well as FUS (Fundusz Ubezpieczeń Społecznych – Social Security Fund) (especially in the period after 2 years from the start-up of business activities, if the entrepreneur met the conditions for paying social insurance premiums on preferential terms) and NFZ. Treating a farm as a company would be tantamount to a radical increase of social insurance premiums, which would affect the shaping of revenue of agricultural holdings¹⁵⁵.

Figure 11

Comparison of the minimum amounts of monthly FUS premiums of people conducting non-agricultural business activities¹⁵⁶, as well as basic KRUS farmer premiums in the 4th quarter of 2015 (in PLN)



Source: prepared by S. Pienkowska-Kamieniecka on the basis of data from ZUS and KRUS (28.11.2015).

¹⁵⁵ M. Podstawka, P. Gołasa, *Ubezpieczenia społeczne i opodatkowanie działalności rolniczej, stan obecny i perspektywy zmian (Social insurance and taxation of agricultural activities – current state and prospects of changes)*, Ubezpieczenia w Rolnictwie. Materiały i Studia (Insurance in Agriculture. Materials and Studies), KRUS 2011, no. 40.

¹⁵⁶ The calculations adopted the accident insurance premium rate of 1.80%.

The basic premium for old-age and disability insurance for farmers simultaneously conducting non-agricultural business activities is paid in double the amount (i.e. 20% of the basic old age pension), while for other household members the farmer pays the same premium, as for himself/herself, i.e. in the basic amount. The additional premium paid to the Pension Fund by farmers is, in turn, diverse and depends on the farm size.

Table 16

The amount of additional premium for old-age and disability insurance for farmers managing farms and for farmers simultaneously conducting non-agricultural business activities and managing farms

Farm size in comparative fiscal hectares	Additional premium size as compared to the basic old age pension	Amount of additional premium (in PLN)
up to 50 ha	0%	0
from 50 ha to 100 ha	12%	106
from 100 ha to 150 ha	24%	211
from 150 ha to 300 ha	36%	317
above 300 ha	48%	423

Source: as in Table 15 on the basis of KRUS data (28.11.2015).

Data concerning agricultural holdings observed by the Polish FADN suggest that the average farm burden with social insurance premiums in 2013 amounted to PLN 2803.11. This amount was diverse and increased along with the growth in economic size and land resources possessed by farmers. However, it is worth noting the relatively small differences in the paid premiums in relation to the growth in the farm size (Table 17).

Table 17

Social insurance premiums paid to KRUS according to economic size, area of arable land and location of a farm* in 2013 (in PLN)

Measure	According to the Economic Size					
	2-8 tys. euro	8-25 tys. euro	25-50 tys. euro	50-100 tys. euro	100-500 tys. euro	>500 tys. euro
Average	1 836,42	2 083,86	2 499,08	3 135,89	4 412,10	4 445,59
Median	1 491,00	1 512,50	2 928,00	2 982,00	3 661,50	3 375,00
Measure	According to the agricultural area					
	<5 ha	5-10 ha	10-20 ha	20-30 ha	30-50 ha	>50 ha
Average	2 338,16	2 097,64	2 249,15	2 521,66	2 841,37	4 263,75
Median	1 920,00	1 500,54	2 171,50	2 928,00	2 982,00	3 709,00
Measure	According to the regions					
	Pomorze and Mazury	Wielkopolska and Śląsk	Mazowsze and Podlasie	Małopolska and Pogórze		
Average	3 099,92	3 016,42	2 517,42	2 634,96		
Median	2 928,00	2 928,00	2 776,00	2 658,00		

* Due to the nature of the data, the actual social security cost on a farm per one person is difficult to determine, but taking into account the specific nature of the research, it is important to place the burden on the whole farm.
Source: own study on the basis of data of FADN 2013.

In 2013, agricultural holdings classified as very large in relation to economic size, i.e. over EUR 500 000 of SO value, paid to KRUS premiums only 2.5 times higher than farms classified as very small (EUR 2-8 thousand of SO value). On the other hand, taking into account the criterion of the area of arable land, the difference between the largest (above 50 ha), and the smallest (below 5 ha) agricultural farms amounted only to ca. 82%. This proves the need to update (increase) the social insurance premiums paid especially by the largest agricultural holdings. Additionally, in the case of farms smaller than 5 ha, the level of social insurance premiums is high, even higher than in the case of farms with the size of 10-20 ha, which may confirm the fact that these farms are, unfortunately, ineffective (many insured persons and low production) or, frequently, these farms exist merely to ensure the right to insurance benefits (using preferential social security premiums in KRUS and exemption from health insurance premiums) rather than to maintain production. Analysing the distribution of average premiums in relation to regions, the highest premiums are paid to KRUS by farms in Pomorze and Mazury, while the lowest – in Mazowsze and Podlasie.

Since February 2012, farmers maintaining a farm with the total area of at least 6 comparative fiscal hectares, farmers dealing with special types of agricultural production, household members working in these branches and retired persons and pensioners have paid health insurance premiums to NFZ. In total, in

December 2014, the number of these people amounted to 1 750 500, and the total amount of health insurance premiums for 2014 paid to NFZ amounted to PLN 3249.0 million. In the case of farmers conducting agricultural activities on agricultural land smaller than 6 comparative fiscal hectares, as well as other household members of farmers working in these farms, premiums are financed from the state budget, in the amount of PLN 1 per each comparative hectare, per each insured farmer and household member of the farmer. In 2014, the costs for the state budget related thereto amounted to PLN 17 465 thousand. This applied to the total of 844 500 persons, including 744 800 farmers and 99 700 other household members of farmers.

Table 18

Health insurance premiums paid to NFZ for 2014	
Specification	Amount of premium (in PLN thousand)
In total, including:	3 249 039.6
- premium from pensioners	1 350 064.8
- premium for farmers and other household members	1 862 004.0
- special production types	36 970.8

Source: own study on the basis of www.danepubliczne.gov.pl (28.11.2015).

Incorporating them into the common social security system on the terms binding for people conducting non-agricultural business activities, if the same principles applied also to health insurance premiums, would mean that these people would start paying a premium in the amount of PLN 279.41 a month (at the rate binding in April-December 2015). For all the insured, whose premiums are financed from the state budget, NFZ would obtain revenues from premiums at the level of ca. PLN 240 million and the burden of the state budget would be reduced by the aforementioned amount of PLN 17 465 thousand. However, it would have to be adjusted, due to the fact that 7.75% of the basic amount of the premium in the case of persons conducting non-agricultural business activities is subject to deduction from advance payment for income tax. However, introduction of such a way of calculating health insurance premiums is impossible, due to the fact that farmers are not covered by income tax (except for farmers conducting special types of agricultural production) and, as a result, it is impossible to determine their actual income¹⁵⁷. Moreover, the research results of FADN

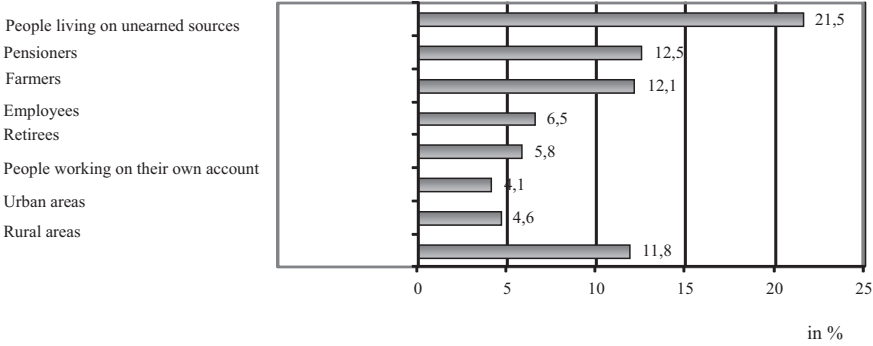
¹⁵⁷ For this reason, it is not possible to estimate the health insurance premium rate paid by farmers, household members of farmers working on farms larger than 6 ha, as well as farmers

suggest that many farmers would not be able to afford to pay such a high premium. This is proven by the fact that 1.3 million out of 2.0 million agricultural farms in Poland is unable to produce during one year food with the value exceeding EUR 4000.

Thus, the income of Polish agriculture should be taken into consideration, which is relatively low, while the financial situation of farmers is diverse. Some farmers certainly could not afford sustaining high insurance costs. According to the research of the Central Statistical Office (GUS), the average disposable income per one person in households in rural areas constitutes ca. 70% of the income obtained in urban areas, which places farmers in a group at the highest risk of poverty, next to pensioners and people living on unearned sources. In 2012, the percentage of farmers at risk of extreme poverty was 3 times higher than among people working on their own account¹⁵⁸ (Figure 12).

Figure 12

Extreme poverty, according to socio-economic groups in 2014 (in %)



Source: own study on the basis of [GUS 2015].

The European Commission also draws attention to the preferential nature of the agricultural system. For a long time, it has postulated incorporation of farmers in Poland into the common social security system, arguing that the agricultural system constitutes a major burden for public finance and increases hidden (agrarian) unemployment. The Commission indicates that, in 2014, in the agricultural sector in Poland two times more people were employed (11.5% of the

and persons dealing with special production types and household members working in these branches.

¹⁵⁸ GUS 2015, *Ubóstwo ekonomiczne w Polsce w 2014 r. (Economic poverty in Poland 2014)*, Warsaw 2015.

whole workforce) than the average for the European Union¹⁵⁹, generating only ca. 4% of national gross value added¹⁶⁰, which indicates low profitability of Polish agriculture, lower than in the case of other economy sectors. Moreover, low premiums make the system highly dependent on state subsidies and open to abuse, since it is used also by non-farmers.

Table 19

Budget revenue, deficit and expenses on KRUS in 2004-2015

Year	Budget revenue of Poland (in PLN thousand)	Budget deficit of Poland (in PLN thousand)	Expenses of the state budget (in PLN thousand)	Expenses on KRUS (in PLN thousand)
2004	156 281 202	41 417 118	197 698 320	15 684 572
2005	179 772 217	28 360 727	208 132 944	15 362 087
2006	197 639 812	25 063 100	220 250 298	14 967 077
2007	236 367 532	15 956 400	249 654 809	15 844 175
2008	253 547 261	24 346 216	273 985 890	15 636 431
2009	274 183 500	23 844 979	298 028 478	16 441 845
2010	250 302 781	44 591 097	294 893 878	15 671 039
2011	277 557 221	25 124 388	302 681 609	16 841 818
2012	287 595 114	30 406 746	318 001 861	16 220 093
2013	279 151 205	42 194 081	321 345 286	16 484 784
2014	283 542 707	28 976 820	312 519 527	16 657 717
2015*	297 197 818	46 080 000	343 277 818	17 565 664

*Plan

Source: prepared by S. Pieńkowska-Kamieniecka on the basis of data from reports on implementation of the budget for 2004-2014, as well as the Budget Act for 2015 of 15 January 2015, *Journal of Laws Dz. U.* item 153.

Indeed, funding social insurance benefits of farmers for years has been the source of many discussions and controversies. The system is financed from two sources: subsidies from the state budget and income from premiums of farmers covering benefits not covered by the state guarantees^{161,162}. For around a dozen years, the nominal total expenses of the state on KRUS have amounted to ca.

¹⁵⁹ Council Recommendation of 14 July 2015 on the 2015 National Reform Programme of Poland on and delivering a Council opinion on the 2015 Convergence Programme of Poland, Official Journal.

¹⁶⁰ The World Bank, *The Little Data Book 2014*, Washington 2014.

¹⁶¹ S. Owsiak, *Finanse publiczne. Teoria i praktyka (Public finances. Theory and practice)*, PWN, Warsaw 2005, p. 544.

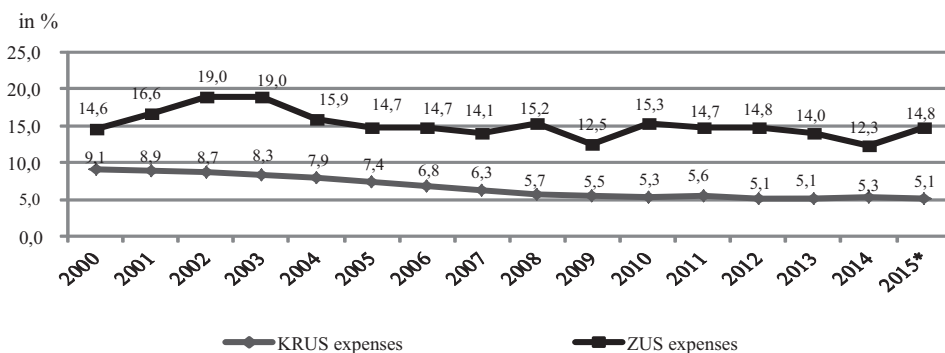
¹⁶² E. Bojanowska, E. Hryniewicz, *Ubezpieczenie społeczne rolników. Zmiana czy kontynuacja? (Social insurance of farmers. Change or continuation?)*, (in:) *Ubezpieczenie społeczne w Polsce. 10 lat reformowania (Social insurance in Poland. 10 years of reforms)*, E. Hryniewicz (ed.), Institute of Applied Sciences, UW, Warsaw 2011.

PLN 15-16 billion per year (with a slight increasing trend). These expenses, in spite of the numerous times their limitation was announced, for many years has remained at an almost unchanged level, which, according to the general public, is the crucial argument for carrying out fundamental reforms in social security of farmers. The Table 19 presents the state expenses on the operations of KRUS in comparison to the total expenses and the budget deficit of Poland.

The data contained in Table 19 suggest that, although the nominal expenses on KRUS have not decreased – quite the contrary in fact – the share of expenses on the tasks financed by KRUS in the budget expenses of Poland within the last 15 years has shown a clearly decreasing trend in this respect. In 2000-2014, it decreased by almost a half, i.e. from the level of 9.1% up to 5.3%. At the same time, the share of expenses on ZUS in the state expenses was fluctuating with an increasing trend. According to the plan for 2015, it is estimated that they will be higher by 0.2 percent points as compared to 2000 (Figure 13).

Figure 13

The share of expenses on KRUS and ZUS in the state budget expenses in 2000-2015 (in %)



*Plan

Source: prepared by S. Pieńkowska-Kamieniecka on the basis of data from reports on implementation of the budget for 2004-2014, as well as the Budget Act for 2015 of 15 January 2015, Journal of Laws Dz.U. item 153.

The decrease in the share of expenses on KRUS, visible in the Figure above, was caused mainly by the change in the ratio of the number of beneficiaries (and expenses on old age and disability benefits for farmers) to the number of the insured, as well as by the increase in budget expenses for other purposes.

The greatest share in the state expenses on KRUS can be attributed to the subsidy to the Pension Fund¹⁶³ and expenses on benefits financed from the state budget, paid out by KRUS. In the year 2014, they amounted to, respectively, PLN 16 095.7 million (i.e. 96.6% of all expenses) and PLN 544.2 million (i.e. 3.3% of all expenses). In 2014, premiums of the insured constituted merely 7.5% (ca. PLN 1.5 billion) of the income of the Pension Fund¹⁶⁴, while the budget subsidy was still high and amounted to 82.4% (ca. PLN 16.1 billion), although it was lower than in the previous years.

Table 20

Revenues and subsidies to the Pension Fund in 2004-2014

Year	Revenue of the Pension Fund (in PLN thousand)	Subsidy to the Pension Fund (in PLN thousand)	Budget subsidy as % of revenue	Premiums written (in PLN thousand)	Premiums as % of revenue
2004	16 306 929	15 129 962	92.8	1 108 700	6.8
2005	15 886 679	14 710 000	92.6	1 077 715	6.8
2006	16 204 850	14 932 671	92.1	1 212 022	7.5
2007	15 942 124	14 680 697	92.1	1 189 485	7.5
2008	16 185 291	14 867 871	91.9	1 224 658	7.6
2009	17 063 951	15 705 402	92.0	1 224 658	7.2
2010	16 347 749	14 935 764	91.4	1 356 396	8.3
2011	16 567 365	15 120 037	91.3	1 387 870	8.4
2012	17 102 737	15 555 738	91.0	1 487 610	8.7
2013	17 446 206	15 853 053	90.9	1 530 075	8.8
2014	19 527 722	16 095 771	82.4	1 464 037	7.5

Source: prepared by S. Pieńkowska-Kamieniecka on the basis of data from reports on implementation of the budget for 2004-2014, as well as the Budget Act for 2015 of 15 January 2015, *Journal of Laws Dz. U. item 153*.

In 2014, the lower budget subsidy to the Fund and lower share of premiums in revenues of the Pension Fund as compared to 2013 was related to the revenues from reimbursement of payment of concurrent benefits, recorded at the level of PLN 1.9 billion. Analysing the impact of the change that has taken place since 2009, concerning the diversity of the social insurance premiums of farmers depending on the scale of the conducted operations, it cannot be concluded that

¹⁶³ In 2014, the budget subsidy to the Fund of Prevention and Rehabilitation amounted to PLN 283 000, which constituted 0.8% of its revenue.

¹⁶⁴ Thus, from the financial point of view, it merely serves the secondary role. J. Wantoch-Rekowski, *System ubezpieczeń społecznych a budżet państwa. Studium prawnofinansowe (Social insurance system and the state budget. Legal and financial study)*, LEX a Wolters Kluwer business, Warsaw 2014.

it is reflected in reduction in subsidies to the Pension Fund. Therefore, the problem of the system is still the lack of correlation between the amount of premiums and the income of farmers.

Despite the fact that many studies criticise the functioning of this part of the public finance sector, namely the social security system for farmers, and despite the high expenses of the state related to its functioning, raising questions in the age of the public finance crisis about their purposefulness and effectiveness¹⁶⁵, implementation of the most radical emerging proposals is currently impossible. This regards not only the aforementioned dissolution of the agricultural social insurance and inclusion of farmers and their household members into the common social security system, but also dissolution of KRUS as an institution and entrusting of the tasks executed thereby to ZUS. This cannot be implemented due to financial, organisational and social reasons.

Dissolution of KRUS and the social security system for farmers, as well as introduction of farmers' insurance on general terms in the common system, e.g. as is the case for people conducting non-agricultural business activities, is currently impossible owing to the following circumstances¹⁶⁶:

- farmers are not covered by income tax and do not keep agricultural accounting (thus, it would be impossible to determine the contribution basis, on which they would be charged),
- the income of Polish agriculture is relatively low, while the financial situation is diverse (some people would not be able to afford paying premiums on new terms),
- KRUS is positively evaluated by farmers,
- separate insurance systems for farmers have been functioning in other countries around the world.

Analysing the assumptions of the draft Act presented above, concerning dissolution of the Agricultural Social Insurance Fund as a unit, it is indicated in the substantiation that dissolution of KRUS has to result in restoration of the situation from before 1991, first of all, causing rationalisation and limiting public expenses related to the agricultural social insurance system. However, no social, economic

¹⁶⁵ P. Gołasa, *Wydatki budżetu państwa na sektor rolny i KRUS w latach 2004-2008 (Expenses of the state budget on the agricultural sector and on KRUS in 2004-2008)*, Polityki Europejskie, Finanse i Marketing (European Policies, Finance and Marketing), 6 (55) 2011.

¹⁶⁶ D. Walczak, *Pozafilarowe formy oszczędzania na emeryturę na przykładzie rodzinnych gospodarstw rolnych (Non-pillar forms of saving for the retirement pension on the example of family farms)*, Ubezpieczenia w Rolnictwie. Materiały i Studia (Insurance in Agriculture. Materials and Studies), No. 45/2012.

and financial effects of such a project were indicated, as well as no administrative and organisational possibilities of incorporating KRUS into ZUS.

This issue applies to 6.1 million employees of the central unit and regional branches. ZUS and KRUS perform different functions, have different structures and different service provision procedures. Greater number of ZUS clients (as a result of transferring farmers to the common system) will require higher employment of the workforce for handling the system, having appropriate qualifications and experience. ZUS would have to either employ new people and train them (allocating additional measures for this purpose), or employ the past employees of KRUS. Thus, there will be no substantial savings within reduction of costs of remuneration and related costs, in particular due to the fact that the ratio of the number of clients of the agricultural and common system to the number of employees of institutions handling them, remains at a similar level. Therefore, it can be expected that a similar number of employees as before will be employed per one client (the insured person and the beneficiary, i.e. in total, ca. 25 million people) (Table 21).

Table 21

Employment and remuneration in ZUS and KRUS in 2014

Specification	Average employment per full jobs	Salaries (in PLN thousand)	Average gross monthly remuneration per 1 full-time employee (in PLN)	Number of insured persons and beneficiaries per 1 employee
ZUS	46 233.15	2 099 928.27	3 785.03	483.77
KRUS	6 138.17	266 504	3 618.13	428.85

Source: own study on the basis of Information about the results of the inspection of execution of the state budget in 2014 in the part 73 - Social Insurance Institution and about execution of financial plans of: Social Security Fund, Temporary Retirement Fund, Demographic Reserve Fund, and the financial plan of the Social Insurance Institution – private legal person, Supreme Chamber of Control, Warsaw 2015, p. 59; Information about the results of the inspection of execution of the state budget in 2014 in the part 72 – Agricultural Social Insurance Fund and about execution of financial plans of the Pension Fund, Administration Fund, as well as Prevention and Rehabilitation Fund, Supreme Chamber of Control, Warsaw 2015, p. 24.

Employment in KRUS per client is higher than in ZUS (one employee of KRUS handles about 11% less clients), however, this issue cannot be explained directly. ZUS orders many objectives in the scope of social insurance to employers, who execute them through their employees (e.g. payment of sickness benefits in the case of employers declaring insurance of over 20 people). When analysing the costs of remuneration per one employee, the potential savings in this respect cannot be determined. The average gross remuneration of ZUS and KRUS employees are shaped on the similar level of ca. PLN 3600-3700 per month.

Moreover, it is difficult to determine the organisational effect of transferring to ZUS ca. 1.5 million of the insured and a similar number of beneficiaries, in particular due to the fact that making any administrative, technical and legal changes seems unfeasible in the assumed three-month period, from the effective date of the drafted Act¹⁶⁷. Currently, ZUS and KRUS execute their tasks with aid of separate IT systems, and consequently it is important to adjust these systems to the new situation¹⁶⁸ (and sustain the high related costs), which requires – in the opinion of members of the Board of Directors of ZUS – at least an annual *vactio legis*. Moreover, according to the Council of the Social Security System for Farmers, huge disturbances would appear in the functioning of both institutions during their reorganisation. The very replacement of the terms "the President of KRUS" with "the President of ZUS" and "KRUS" with "ZUS", which do not actually introduce any changes in the social security system for farmers, results in a misunderstanding, since the rights attributable to the President of KRUS are assigned to the President of ZUS, who does not have a legal status comparable with the President KRUS. The failure to adjust the organisational and administrative principles of functioning of KRUS and ZUS, indicated by various institutions, also applies to such issues as¹⁶⁹:

- the possibility for paying social insurance premiums of farmers in cash, whereas in ZUS premiums can be paid only via institutions handling payments (ZUS does not have cash registers in its offices);
- lack of the envisaged prolongation fee in the case of granting a relief in repayment of receivables on account of social insurance premium of farmers, while such a possibility was provided by the Act on the Social Security System¹⁷⁰,
- the need for standardisation of the principles of issuing retiree and pensioner cards in both systems,

¹⁶⁷ Article 3 (1) of the deputy's draft Act on Dissolution of KRUS states that "The President of the Institution, within 3 months from the effective date of the Act, shall adjust the organisation of the Institution to the changes introduced by the Act".

¹⁶⁸ A question appears, whether to adjust the IT system previously functioning in ZUS to the needs of handling the system for farmers, or use the previous system supporting KRUS, D. Walczak, *Uwarunkowania funkcjonowania...*, p. 232.

¹⁶⁹ Ibidem.

¹⁷⁰ When, pursuant to Article 29 of the Act on the Social Insurance System, ZUS postpones the date of payment of any due contributions or divides the payment due into installments, it simultaneously fixes, on the basis of Article 57 of the Tax Ordinance Act, the so-called extension fee, which amounts to 50% of the announced interest rate for delay. Act of 29 August 1997 - Tax Ordinance Act (consolidated text: Journal of Laws Dz.U. of 2015, item 613).

- the need for standardisation with regard to who will be issuing decisions concerning benefits, which – in the case of old age and disability pensions from the social security system for farmers – according to the drafted Act, are issued by the President of ZUS or ZUS employees authorised thereby, whereas, in the case old age and disability pensions from the common social security system – disability pension bodies,
- giving Chapter 5 of the drafted Act the wording "Organisation and scope of action of the Institution and the Council of Farmers", while the detailed principles of organisation and functioning of ZUS are regulated already in Chapter 7 of the Act on the Social Insurance System,
- lack of uniform regulations with regard to the principles and procedure of sending for therapeutic rehabilitation, since, pursuant to Article 64 (1) of the drafted Act, ZUS would undertake actions aimed at aiding the insured and those entitled to insurance benefits, who are completely unable to work in a farm, but hold promise of recovering as a result of treatment or rehabilitation, or those at risk of complete incapacity to work in a farm, whereas in the present legal condition, ZUS sends for therapeutic rehabilitation the insured at risk of total or partial incapacity to work, persons eligible for sick benefit or rehabilitation benefit, as well as persons receiving pension for inability to work, given that the person sent for rehabilitation has to hold promise of recovery of capacity to work,
- the probably automatic replacement of certain words and terms, regardless of the unique character of operation of ZUS¹⁷¹, which resulted in, among others, replacing "the expert physician of the Fund" (without legal grounds¹⁷²) with "expert physician of the Institution", while in ZUS, certifications are made by "certifying physicians of ZUS"¹⁷³,

¹⁷¹ Answer of the National Board of Agricultural Chambers of 18 July 2013 to the letter ref. no. GMS-WP-173-181/M on the deputy's draft Act on Dissolution of Agricultural Social Insurance Society, amending the Act on Social Insurance and certain other acts.

¹⁷² See the opinion of the Farmers' Social Security Council of 10 July 2013 on the deputy's draft Act on Dissolution of Agricultural Social Insurance Society, amending the Act on the Social Insurance of Farmers and certain other acts.

¹⁷³ Leaving both expert physicians and certifying physicians of the Institution, from the point of view of the assumed savings resulting from combining both institutions, would be questionable, in particular due to the fact that ZUS has for years, despite the significantly higher remunerations in this group of employees (PLN 8 270.03 in 2014) as compared to the average remunerations in the Institute (PLN 3 785.03 in 2014), recorded shortfall of certifying physicians. In July 2013, ca. 700 certifying physicians were employed on 591 full-time positions, while the shortfall of certifying physicians amounted to ca. 100 people. See the

- issuing, as before, resolutions concerning farmers by the Minister of Agriculture and Rural Development, whereas ZUS is governed by the Minister of Labour and Social Policy¹⁷⁴.

Substantially, it is indicated that combining KRUS and ZUS would cause general interruptions in the correct and timely performance of their responsibilities, not only within the scope of social insurance, but also, e.g., prevention and rehabilitation, resulting in – currently difficult to estimate – social and economic impacts of such reorganisation, not only for the social security system, but for the whole agricultural sector as a strategic sector of the economy¹⁷⁵.

Certainly, in the long run, it is impossible to maintain the social security system for farmers applying the previous principles. This system requires adjusting to the present economic situation. The sizes of agricultural activities and the farmers' incomes have been changing, new sources of inflow to agriculture emerged as a result of Poland's accession to the European Union (although farmers still remain a relatively poor group¹⁷⁶). Even so, the social security system for farmers still remains unaffected and unadjusted to these changes. Therefore, they are necessary, understandable and accepted by the farmers themselves¹⁷⁷. The fact that the system requires flexible adjustment to the changing socio-economic situation of agriculture, but not a radical dissolution of KRUS, is confirmed by the conclusions included in the report of the World Bank of 2005, stating that radical actions, such as dissolution of KRUS and the social security system for farmers or merging it with ZUS, are unfavourable and unrealistic. It has been also determined that KRUS has more strengths¹⁷⁸ than weak-

opinion of the member of the Board of Directors of ZUS, Dariusz Śpiewak, of 4 July 2013 to the deputy's draft Act on Dissolution of KRUS.

¹⁷⁴ Answer of the National Board of Agricultural Chambers of 18 July 2013 to the letter ref. no. GMS-WP-173-181/M on the deputy's draft Act on Dissolution of Agricultural Social Insurance Society, amending the Act on social insurance and Certain Other Acts.

¹⁷⁵ See the opinion of the Farmers' Social Security Council.

¹⁷⁶ The vast majority of farms belongs to the group of very economically small farms (up to EUR 4000 of SO). W. Kobielski, *Koncepcja reformy systemu emerytalno-rentowego rolników (The concept of the reform in the pension scheme of farmers)*, Forum Inicjatyw Rozwojowych (Forum for Development Initiatives), Warsaw 2015, p. 52.

¹⁷⁷ W. Kobielski, *Koncepcja reformy systemu emerytalno-rentowego rolników (The concept of the reform in the pension scheme of farmers)*, Forum Inicjatyw Rozwojowych (Forum for Development Initiatives), Warsaw 2015.

¹⁷⁸ The strengths of KRUS included responsible finance management, full monitoring of the insured and the beneficiaries, great trust of farmers in KRUS, timely payment of benefits. On the other hand, the weaknesses of KRUS included, among others, excessive dispersion of decision-making functions, lack of an integrated IT system, as well as lack of tools for field units to report financial settlements and current tasks to the Central Office of KRUS. See

nesses and its dissolution would not lead to reduction in budget costs, and would constitute a threat to high collectability of premiums (above 100%). The farmers and heads of gminas themselves express their positive opinion on KRUS as an institution. The research of D. Walczak suggests that every second surveyed farmer has a positive opinion about the operations of KRUS, and every fourth one trusts it (on a similar level as the trust towards cooperative banks)¹⁷⁹. Moreover, in spite of the fact that the farmers see the need for changes in the agricultural social security system, they definitely support keeping it¹⁸⁰.

A. Czyżewski and A. Matuszczak, in their studies, also contradict the thesis about the need to dissolve KRUS. However, they indicate that, although within the last nearly 20 years, total expenses of KRUS in all budget expenses of the state have decreased almost by a half, the level of expenses approaches the critical threshold of socially determined expenses¹⁸¹.

Therefore, preservation of the autonomy of the agricultural social insurance system requires fundamental changes, not only due to the need to reform public finance, but also a number of other cases of ill-adjustment. Since farmers should remain in KRUS, with simultaneous increase in premiums for those, who obtain higher income, it seems the changes should begin with introduction of agricultural accounting and income tax in agriculture, as well as the obligation of farmers to keep records of all economic events for tax purposes. There is currently no mechanism determining the actual farmers' income, which prevents differentiation of social insurance premiums depending on income of the insured. Other economic conditions of functioning of the social security system for farmers should also be taken into consideration, such as, among others, low and narrow diversification of not only premiums, but also benefits¹⁸², high level of fragmen-

M. Lewandowska, *Misja Banku Światowego w KRUS (The mission of the World Bank in KRUS)*, Ubezpieczenia w Rolnictwie. Materiały i Studia (Insurance in Agriculture. Materials and Studies), KRUS, No. 2/3, Warsaw 2005.

¹⁷⁹ According to the research by D. Walczak, every second farmer responding in the survey positively assessed functioning of KRUS, while every fourth respondent trusts KRUS. D. Walczak, *Uwarunkowania funkcjonowania...*, p. 194.

¹⁸⁰ R. Kisiel, D. Dołęgowska, K. Majewska, *Ocena działalności Kasy Rolniczego Ubezpieczenia Społecznego w opinii ubezpieczonych z powiatu przasnyskiego (Assessment of operations of the Agricultural Social Insurance Fund in the opinion of the insured from the Przasnyski Powiat)*, Journal of Agrobusiness and Rural Development, 2 (36) 2015.

¹⁸¹ A. Czyżewski, A. Matuszczak, *KRUS w budżecie rolnym Polski. Fakty i mity (KRUS in the agricultural budget of Poland. Facts and myths)*, Ubezpieczenia w Rolnictwie. Materiały i Studia (Insurance in Agriculture. Materials and Studies), KRUS 2015, no. 53.

¹⁸² Since it is impossible to determine the actual income from agricultural operations, farmers pay identical premiums and, consequently, receive identical benefits. At the same time, very

tation of agricultural farms^{183,184}, lack of actions aiming at a significant change in the agrarian structure in Poland, scope of financial support of the agricultural sector from the European funds, the increasing state budget deficit.

The reform should apply to such areas of activity of the agricultural social security system, which, among others, will increase the level of correlation between the premium amount and the benefit amount, eliminate abuse and reduce the costs of the system's operation, thus limiting transfer of funds from the state budget to the system, which is accused of internal and external injustice. Internal injustice of the system results from the fact that the diverse premium is not accompanied by diverse benefits, while external injustice relates to the use of insurance on preferential terms by persons, who – apart from owning land – are not in fact associated with agriculture¹⁸⁵.

Imperfections in the social security system for farmers are noticed also by the farmers themselves, who are willing to accept changes, especially those, which – by diversifying premiums – could result in diverse, higher benefits. People insured in KRUS pay significantly lower premiums than those insured in the non-agricultural employee system, but also receive lower old age and disability pensions. These pensions, for single-person pensioner farms, are lower than minimum subsistence figure, and in the case of two-person farms – slightly exceed this value (Table 22).

low premiums paid to all the insured prevent diversification (increase) of benefits to a reasonable rate. D. Walczak, *Uwarunkowania funkcjonowania...*, p. 244.

¹⁸³ The main problem of Polish agriculture is the fragmentation of the agrarian structure of farms. The structure of ca. 1.5 million agricultural holdings conducting agricultural activities is dominated by holdings with total area of up to 5 ha (more than 55%). *Rural Development Programme for 2014-2020*, Ministry of Agriculture and Rural Development, p. 26.

¹⁸⁴ M.A. Sikorska, *Przemiany w strukturze agrarnej indywidualnych gospodarstw rolnych (Transformations in the agrarian structure of individual agricultural holdings)*, Institute of Agricultural and Foods Economics, Warsaw 2013.

¹⁸⁵ J. Neneman, M. Pilch, M. Zagórski, *Koncepcja reformy systemu ubezpieczeń społecznych rolników (The concept of the reform in the social insurance system of farmers)*, Forum Inicjatyw Rozwojowych (Forum for Development Initiatives) 2012, <http://www.efrwp.pl/> (date of access: 20.10.2015).

Table 22

The average old age and disability pension under inability to work paid by FUS and the agricultural social security system versus the minimum subsistence figure in 2014

Specification	Average amount of benefit (in PLN) (1)	Minimum subsistence figure in one-person pensioner farm (MS1) (in PLN)	Minimum subsistence figure in two-person pensioner farm (MS2) (in PLN)	Ratio of the benefit amount to the minimum subsistence figure (in %)	
				1/MS1	1/(MS2/2)
Agricultural old age pension (KRUS)	1 027.31	1 070.65	1 778.44	95.95	115.53
Pension for inability to work (KRUS)	983.60			91.87	110.62
Old age pension paid by FUS	2 043.11			190.83	229.77
Pension for inability to work paid by FUS	1 536.32			143.49	172.78

Source: own study on the basis of *Quarterly statistical information. 4th quarter of 2014*, Agricultural Social Insurance Fund, Warsaw 2015, p. 10; *Important information related to social insurance 2014*, Social Insurance Institution, Warsaw 2015, p. 35; data of the Institute of Labor and Social Affairs, www.ipiss.com.pl (30.11.2015).

As indicated by M. Podstawka, the previous state of the lack of correlation between premiums and benefits must be changed, so that the amount of benefits would depend on the sum of paid premiums, as in the case of the common social security system¹⁸⁶. As a result, it is proposed to stray from the presently functioning defined benefit scheme towards nominally defined premiums. In this system, the state would guarantee payment of minimal old age pensions to those, who have not generated adequate capital from premiums, despite being covered by insurance for at least 25 years. The reform of the old age and disability insurance system based on defined premium supported with budget subsidies, according to W. Kobielski, would be characterised by, among others, the principles of social and professional solidarism, simple and transparent principles of determining the amount of old age pension, dependence of the size of budget subsidies on the amount of premiums paid by the farmer and his/her farm income, as well as the decreasing trend in budget subsidy to the system in the long run¹⁸⁷.

With regard to the change in the calculation and amount of old-age and disability insurance premiums of farmers, recently a number of proposals has been submitted, such as: premium calculated from income, lump sum premium calcu-

¹⁸⁶ M. Podstawka, *Mity i prawdy ...* op. cit.

¹⁸⁷ W. Kobielski, *Koncepcja reformy...* op. cit.

lated on the basis of average gross remuneration in the country's economy, premium calculated from the economic size of an agricultural holding, and self-financed premium¹⁸⁸.

J. Neneman et al. (2012) suggest a certain segmentation of farmers with regard to including them in the social insurance scheme and indicate that premiums should depend on the earned income¹⁸⁹ rather than on the size of the farm. As a result, it would be possible to determine, which farmers and on what terms of paying the premium would remain in the KRUS system. They indicate division into three groups of farms, i.e. obtaining low income, which could be insured applying the previous principles (specific premium); obtaining average income, which would pay a higher premium, receiving in exchange higher pension (so-called hybrid model) (linear premium), and obtaining high income, which would be covered by the common, non-agricultural social insurance system. They would pay premiums defined in amounts at the level of premiums paid by self-employed people. In the case of the abovementioned hybrid model, premiums would not be lower than in the present agricultural system, and would not be higher than in the non-agricultural common system. The current inflows to KRUS would vary depending on the agreed threshold to access the hybrid system (the premium would be recorded on individual pension accounts) (Table 23).

The literature repeatedly emphasises that it is necessary to diversify the premiums in a broader scope than currently, as it now applies only to farmers owning 50 ha of land. Such a change could be introduced by increasing premiums e.g. by 1% or 1.5% of the basic old age pension per each hectare beyond 10 ha, i.e. the first 10 ha would be exempted from paying a higher premium. This could bring additional revenues at the level of ca. PLN 500 million per year (Table 24).

¹⁸⁸ W. Jagła, *System ubezpieczenia społecznego rolników, jego słabe i pozytywne cechy oraz kierunki zmian (The social insurance system for farmers, its weaknesses and strengths, as well as the directions of changes)*, Presentation from 11th October 2013, Institute of Agricultural and Food Economics-NRI, Multi-Annual Programme 2011-2014.

¹⁸⁹ Since determination of income may be difficult, it could be reasonable to cover agricultural activities with a lump sum on recorded revenues, which is currently considered by the Ministry of Finance.

Table 23

Estimated consequences of applying the hybrid model¹⁹⁰

Access threshold (monthly income)	Insurance rate (as a percentage of revenue)	Number of the insured in the hybrid system (in thousand)	Decrease in total preferences (in PLN billion)*	Additional current income to KRUS (in PLN billion)
1 000	4.41	914.7	334.6	2 367
1 500	4.62	846.3	33.4	2 235
2 000	4.85	775.9	32.1	2 089
2 500	5.11	703.1	30.7	1 939

*Referring to old age insurance.

Source: J. Neneman, M. Pilch, M. Zagórski, *The concept of the reform of the social security system of farmers*, Forum Inicjatyw Rozwojowych) 2012, <http://www.efrwp.pl/>, p. 32.

Table 24

Suggested changes in the amount of old-age and disability insurance premiums and simulated additional inflows

Area (in comparative fiscal hectares)	Number of people insured in KRUS	Average farm size (in comparative fiscal hectares)*	Size adopted for calculations (the first ha exempted)	Additional monthly revenues (in PLN)	Additional annual revenues (in PLN)
10.01 – 20	203 394	15	5	8 583 226	102 998 721
20.01 – 50	91 179	25	15	11 543 261	138 519 136
50.01 – 100	15 009	75	65	8 233 937	98 807 248
100.01 – 150	3 025	125	115	2 936 065	35 232 780
150.01 – 300	1 986	225	215	3 603 795	43 245 547
over 300	1 080	365	365	3 327 048	39 924 576
Total				38 227 334	458 728 010

*Middle range was assumed.

Source: www.obserwatorfinansowy.pl (30.11.2015); [Walczak 2011a].

¹⁹⁰ The analysis assumed transition to ZUS of ca. 160 000 people, not eligible for the preferential system. It was also assumed that people begin working at the age of 25, retire at the age of 65, and the rate of return is 2%. J. Neneman, M. Pilch, M. Zagórski, *Konceptja reformy systemu ubezpieczeń społecznych rolników (The concept of the reform in the social insurance system for farmers)*, Forum Inicjatyw Rozwojowych (Forum for Development Initiatives) 2012, <http://www.efrwp.pl/>, p. 32.

Recently, the concept of M. Zagórski emerged, who suggests that budget support should apply to the poorest farmers, while the others would have to pay a self-financing premium. According to the assumptions, the lowest premium would increase from the present level of PLN 88 a month to PLN 116 a month. It is assumed that such a premium would be paid on by those farmers, whose annual revenue does not exceed EUR 4000. Persons generating income exceeding this amount would have to pay not only a personal premium, but also an income premium at the level of PLN 459, which would allow for self-financing the old age pension and adjust the KRUS system of the current ZUS system. However, in order to be able to implement such solutions, it is necessary to conduct a comprehensive reform of the entire financial system in agriculture – first of all, the tax system.

When analyzing the degree of old age security of farmers and the unquestionable necessity to increase low old age agricultural pensions, it can be indicated that farmers, by investing in agricultural holdings, demonstrate greater old age foresight than they would think, as compared to off-agricultural employee groups. This is proved by investments outlays in agricultural farms and arable land sale.

First of all, it should be taken into consideration that most agricultural holdings in Poland are individual farms managed by the whole family. They are multi-generation family farms connected by economic ties, where all household members have one common budget, and thus the income of each family member constitutes income of the whole household (Walczak 2011a, Zegar 1996)¹⁹¹. In this context, it should be considered whether all farmers really cannot afford the changes in the social security system for farmers, and whether they can afford increased benefits through higher premiums. The answer to this question is not clear-cut and simple. Polish farmers do not pay income taxes and do not keep any form of accounting, therefore, other indirect information should be used.

Statistics concerning investments of agricultural holdings in real estate, such as buildings and structures, machines and technical devices, as well as means of

¹⁹¹ While every second household in cities consists of no more than two persons, rural areas are dominated by five-person and bigger households (nearly every fourth household). 2.54 persons reside in one apartment in the city, while in rural areas, 3.40 persons reside in one household (with an increasing trend as compared to 3.33 persons in 2002). GUS 2014, *Gospodarstwa domowe i rodziny. Charakterystyka demograficzna. Narodowy Spis Powszechny Ludności i Mieszkań 2011 (Households and families. Demographic characteristics. 2011 National Population and Housing Census)*, Warsaw 2014.

transport¹⁹², suggest that the value of investment outlays in agriculture and fishery increases every year. In 2013, they amounted to PLN 4 897.4 million (i.e. increased by 31.8% as compared to 2010), and the highest outlays were incurred on buildings and structures. In 2010-2013, farmers invested PLN 6.4 billion in total¹⁹³. A special role in investments is obviously played by the EU funds, which allow for undertaking actions at the level indicated above, as well as preferential credits with subsidies to interest paid by the Agency for Restructuring and Modernisation of Agriculture¹⁹⁴. According to the situation at the end of 2013, farmers submitted applications for PLN 13.99 billion only in one of the Rural Development Programs – Modernisation of Agricultural Holdings, which – considering the requirement to invest 50% of own funds – is tantamount to investing approx. PLN 7 billion of own funds in farms¹⁹⁵. On the other hand, only in 2013, approx. 1.4 million farmers received around PLN 14.6 billion under direct payments¹⁹⁶.

At the same time, a constantly growing interest of farmers in agricultural land is noticeable, which is reflected in higher land prices obtained by ANR (Agricultural Property Agency). In 2004-2010, the Agricultural Property Agency sold ca. 100 000 hectares of agricultural land per year, while in 2013 this value was ca. 150 000 ha. In 2013, the average price of 1 ha amounted to PLN 24 200 (Figure 14).

¹⁹² D. Walczak, *Inwestycje w rodzinnych gospodarstwach rolnych jako forma gromadzenia kapitału emerytalnego (Investments in family farms as a form of gathering pension capital)*, Polityka Społeczna (Social Policy). Special Issue "Problemy zabezpieczenia emerytalnego w Polsce i na świecie" ("Problems of retirement security in Poland and around the world"), Part II, 2011.

¹⁹³ *Statistical Yearbook of Agriculture 2014*, GUS, Warsaw 2014.

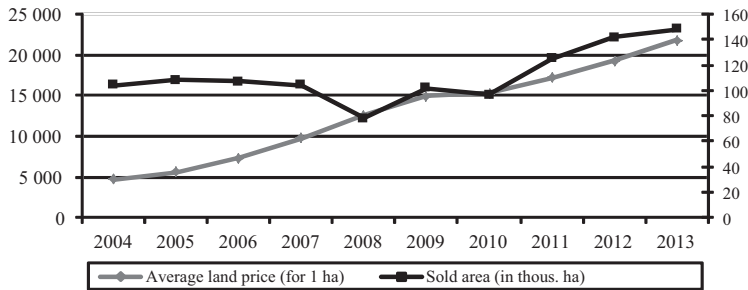
¹⁹⁴ D. Walczak, *Inwestycje w rodzimych...* op. cit.

¹⁹⁵ PROWieści 2013, *PROWieści – monthly journal of the Rural Development Programme for 2007-2013*, no. 5.

¹⁹⁶ ARMA, *Report on operations of the Agency for Restructuring and Modernisation of Agriculture*, Warsaw 2014.

Figure 14

Average price of 1 ha of land (in PLN) and the area sold (in thousand ha) by the Agricultural Property Agency in 2004-2013



Source: prepared by S. Pieńkowska-Kamieniecka on the basis of data of the Agricultural Property Agency, www.anr.gov.pl (30.11.2015)

As suggested by the above analyses, farmers dynamically invest in development of their agricultural holdings¹⁹⁷, and thus in workplaces of their children who with them will form a household in the future and jointly bear costs of its maintenance, thus lightening the burden on their budget. Hence, investments in family farms may turn out to be one of the best forms of support for future retirees, and farmers – one of the most well-secured socio-occupational groups in terms of old age insurance.

There is still a separate issue of voluntary insurance and insurance of other household members. Household members are persons not involved in agricultural production (land smaller than 1 ha has little to do with agricultural production) and not dealing with agriculture. Therefore, preventing these persons from being covered by this insurance should be considered, although eliminating the category of a household member is impossible, since it would involve depriving people of the possibility to insure, e.g., children cooperating in agricultural holdings. On the other hand, restricting insurance to family members does not allow for insuring, e.g., partners co-managing farms. In fact, insurance of household members in KRUS cannot be considered a privilege, and covering them under voluntary insurance should be considered, rather than under the Act, in the category of farms over 1 ha.

¹⁹⁷ Accession of Poland to the European Union and covering agriculture with the common agricultural policy had a beneficial impact on the situation in agriculture, resulting in an increase in the farmers' income and the share of subsidies in the farms' income. See W. Kobielski, op. cit., p. 52.

Minor changes should be introduced in the Contribution Fund of the Social Insurance System for Farmers. The analysis of revenue and expenses shows that it is self-financing (Table 25), and although, as it seems from the research, the amount of the paid-out benefits is satisfactory for farmers, increase in the amount of low sickness benefits could be considered. For instance, increase in the premium by PLN 10 per quarter would increase income by ca. PLN 60 million per year.

Table 25

Revenues and expenses of the Contribution Fund in 2012-2014 (in PLN thousand)

Item	Specification	2012		2013		2014	
		in PLN thousand	share (in %)	in PLN thousand	share (in %)	in PLN thousand	share (in %)
I.	Revenues (written) including:	750 095	100.0	733 050	100.0	722 957	100.0
1.	Accident, sickness and maternity insurance premium	706 782	94.2	696 896	95.1	681 520	94.3
2.	Other revenues	43 313	5.8	36 154	4.9	41 437	5.7
II.	Expenses, including:	687 762	100.0	700 617	100.0	698 076	100.0
1.	One-time post-accident compensation	69 831	10.2	74 453	10.6	78 673	11.3
2.	Sickness benefits	400 866	58.3	409 952	58.5	403 487	57.8
3.	Maternity benefits	100 237	14.6	97 755	14.0	95 599	13.7
4.	Contribution to the Administration Fund	59 278	8.6	58 750	8.4	59 259	8.5
5.	Contribution to the Prevention and Rehabilitation Fund	32 900	4.8	32 639	4.7	32 922	4.7
6.	Other expenses	24 650	3.6	27 068	3.9	28 136	4.0

Source: prepared by S. Pieńkowska-Kamieniecka on the basis of data obtained from Management Board Office of the Contribution Fund of the Social Insurance System for Farmers.

In order to preserve the autonomy of KRUS, it should cover, first of all, farmers, for which conducted agricultural activities are the main source of income. According to e.g., M. Zagórski, the good definition of a farmer would assume that at least 50% of their incomes is generated from agricultural activities¹⁹⁸.

Moreover, attention should be paid to the social assistance system for farmers, which requires more effective supervision. Due to the fact that it is impossible to determine the actual income of farmers, the assistance is frequently granted to persons, who do not in fact need it, which negatively affects finances of gminas (the state) and is the source of the popular opinion about ineffective law.

¹⁹⁸ www.polskieradio.pl (30.11.2015).

5. Current and proposed changes in economic insurance in agriculture¹⁹⁹

5.1. Theoretical introduction

Agricultural holdings are particularly exposed to several kinds of risk, particularly weather risk²⁰⁰. Activity of a farmer is based on plant or animal production. Plant production directly depends on weather conditions, whereas, in the case of animal production, weather affects the cost of food production or its purchase price. There are many methods of risk management. They include risk aversion, risk reduction (before and after loss), risk retention or risk transfer. Depending on the type of risk, transfer may apply to transfer of risk-generating operations (e.g. by means of subcontracts) or transfer of liability for damage, namely insurances²⁰¹. Due to the specific nature of agricultural activities, avoiding risk, especially weather risk, is difficult or impossible, and therefore the best method of risk management is transfer of risk beyond the farms, e.g. through the aforementioned insurances²⁰².

Regardless of the form of security, it is essential for the decision on the method of risk mitigation to be made consciously and to take account of the special character of the particular farm²⁰³. A farmer should strive to secure against risks, the frequency or severity of which is the highest for the conducted activities. For an individual farmer, risk management consists in finding a beneficial combination of actions resulting from not knowing the future and the expected profit²⁰⁴. With regard to risk management of particular agricultural holdings,

¹⁹⁹ Due to the research subject-matter discussed in this chapter, it will present only business insurances in agriculture specific for this kind of production. Thus, it will not present, e.g., civil liability insurance of motor vehicle owners, which is important for farmers, but belongs to common insurances, rather than specific for agricultural activities.

²⁰⁰ R.D. Pope, Risk and Agriculture, [in:] *Economics of Risk*, collective work edited by D.J. Meyer, Kalamazoo 2003, MI: Upjohn Institute, p. 127-130.

²⁰¹ I. Jędrzejczyk, *Ubezpieczenie jako metoda zarządzania ryzykiem w gospodarce wiejskiej w świetle integracji europejskiej i globalizacji rynku (Insurance as a method of risk management in rural economy in the light of European integration and market globalisation)*, [in:] *Ubezpieczenia gospodarcze (Business insurances)*, Wieś i Rolnictwo (Countryside and Agriculture), collective work edited by M. Adamowicz (ed.), Publishing House of the Warsaw University of Life Sciences, Warsaw 2002, p. 24.

²⁰² P. Kobus, *Ryzyko występujące w produkcji roślinnej, metody jego pomiaru (The risk in plant production, methods of its measurement)*, [in:] *Czynniki i możliwości ograniczenia ryzyka w produkcji roślinnej poprzez ubezpieczenia (Factors and opportunities of limiting risk in plant production by means of insurances)*, collective work edited by A. Wicka, Publishing House of the Warsaw University of Life Sciences, Warsaw 2013, p. 63.

²⁰³ J. Harwood et al. 1999, *Managing Risk in Farming: Concepts, Research and Analysis*, Technical Report, Economic Research Service, U.S. Department of Agriculture, p. 14-58.

²⁰⁴ H. Aimin, *Uncertainty, risk aversion and risk management in agriculture*, Agriculture and agricultural science procedia 2010, Vol. 1, p. 152.

weather unpredictability in particular seasons is particularly important²⁰⁵. Therefore, it is equally important to accurately collect climatic data in Poland, as well as make them available (and make farmers aware that they should make them available)²⁰⁶. While mitigating losses in agriculture, we cannot forget the so-called agri-technical reinsurance (e.g. anti-flood protection, purchase of sprinkling machines, financial support for fire department and melioration), which can be or even should be used by farmers²⁰⁷.

Table 26 presents factors affecting functioning of an agricultural farm in Poland. Due to the increasingly higher value of assets of farmers, which is actually the same as the value of assets of their households, adequately selected insurance programs are more and more important for farmers²⁰⁸.

Table 26

Selected risk factors typical of an agricultural farm in Poland

Objective of the farm	Profit maximisation
Maximum losses	Debt and cessation of agricultural production
Source of risk	Weather, market, political decisions
Mechanisms of risk avoidance	Insurance, legislation
Value of farm assets	High in production farms and linked to the value of assets of the household
Prices of agricultural products	Global (mainly independent on local market prices)

*shows characteristic values for countries developed

Source: prepared by S. Pieńkowska-Kamieniecka on the basis of: R. Gommes, *Climate-related risk in agriculture, A note prepared for the IPCC Expert Meeting on Risk Management Methods, Toronto, Canada, 29th April–1st May 1998, p. 11.*

The values presented in Table 26 show the diversity of specific types of risk in Poland. This diversity results, among others, from the diversity of climatic conditions within the territory of Poland. It is reflected in the fact that, e.g. in April, the average temperature in 1971-2000 ranged from 4.5°C in Zakopane, through 6.5°C in Chojnice, up to 8.4°C in Opole, while the precipitation in a similar period – from 28 mm in Toruń to 54 mm in Nowy Sącz.

²⁰⁵ R. Gommes, *Climate-related risk in agriculture, A note prepared for the IPCC Expert Meeting on Risk Management Methods, Toronto, Canada, 29th April–1st May 1998, p. 2, 10*

²⁰⁶ B. Ozkan, H. Akcaoz, *Impacts of climate factors on yields for selected crops in the Southern Turkey, Mitigation and Adaptation Strategies for Global Change 2002, Vol. 7, Issue 4, p. 377.*

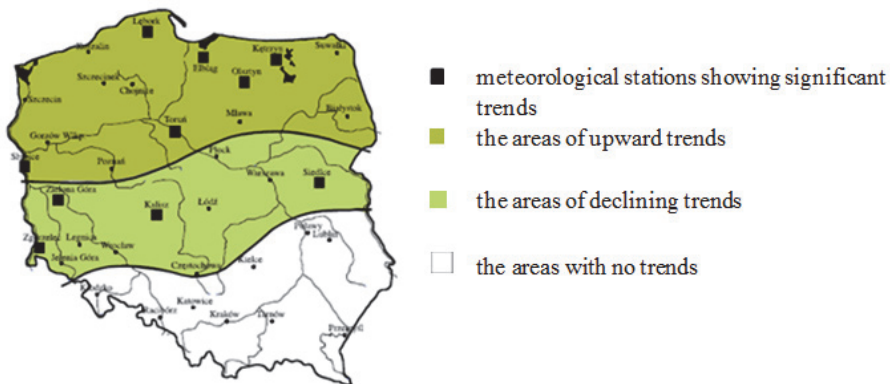
²⁰⁷ *Rolne ubezpieczenia dotowane upraw i zwierząt – co dalej? (Subsidised agricultural insurances of crops and animals – what's next?) "Gazeta Ubezpieczeniowa" ("Insurance Magazine"), Tuesday, 14 May 2013. <http://www.gu.com.pl> (9.11.2015).*

²⁰⁸ Due to the global prices for most agricultural products binding in Poland, the possibilities to protect income from agricultural activities, e.g. by changing the consumer on a different market, are limited.

For agriculture, the risk is not limited only to precipitation, but also its variability, which increases (expressed by the coefficient of variation, namely the ratio of standard deviation to the average value), which constitutes a proof of progressing instability of our climate²⁰⁹. The value of damage also increases; both economic, as well as social damage, caused by climatic factors²¹⁰. Improvement in effectiveness of flood and drought risk management becomes a more and more important issue²¹¹. According to the data of the Food and Agriculture Organisation (FAO), as much as 84% of damage caused by drought is done to the agricultural sector²¹². As indicated in Figure 15, Poland can be divided into 3 parts in terms of precipitation: areas with growing trends, declining trends and without any clear trends. In each of these parts, the likelihood of drought is different, and thus the demand for insurance protection will probably also be different.

Figure 15

Annual precipitation trends in Poland in 1891-2000



Source: *Climate in Poland and analysis of action programmes in terms of climate changes until 2015. Appendix 4 to National Water and Environmental Programme, National Water Management Authority, Warsaw 2010.*

²⁰⁹ *Klimat w Polsce oraz analiza programów działań pod kątem zmian klimatu do 2015 r. (Climate in Poland and analysis of action programmes in terms of climate changes until 2015). Appendix 4 to National Water and Environmental Programme, National Water Management Authority, Warsaw 2010.*

²¹⁰ FAO, *The Impacts of Natural Hazards and Disasters on Agriculture and Food and Nutrition Security: A Call for Action to Build Resilient Livelihoods*, <http://www.fao.org> (27.11.2015).

²¹¹ IT System of the Country's Protection, <http://www.isok.gov.pl/en/> (2.11.2015).

²¹² FAO, *The impact of disasters on agriculture and food security*, <http://www.fao.org> (27.11.2015).

The discussed factors are not the only ones that can affect agricultural production; such factors also include: topography and insolation; and some less predictable include: hurricane and hail. This is why it is not surprising that risks for particular crops and particular risks across the whole country are highly diverse. Due to the specific risk concerning agriculture, subsidised insurance of agricultural cultivations is used by many countries around the world²¹³. It is one of the methods used by the state to encourage farmers to buy such insurance, as it is profitable for farmers, as well as for the society as a whole²¹⁴.

5.2. Review of legal regulations

Mandatory insurance of agricultural cultivations – namely insurance of crops against hailstorm and flood – was introduced by the Act of 28 March 1952 (the same Act introduces mandatory insurance of buildings against fire and other specified unforeseeable events)²¹⁵. Similar provisions could be found in the new Act of 2 December 1958 on Non-life Insurance²¹⁶. In the Act of 20 September 1984 on Non-life Insurance included in the statutory insurance, among others²¹⁷:

1. buildings – against fire, hurricane and other unforeseeable events,
2. cereal crops, root vegetables and fodder plants – against hailstorm, fire, flood and flooding as a result of excessive precipitation,
3. horses and cattle in the age suitable for production, as well as pigs, except piglets – against death and slaughter out of necessity.

Mandatory civil liability insurance was introduced in 1975²¹⁸ and was in force until 1990²¹⁹ without significant amendments. However, on the basis of the Act of 28 July 1990 on Insurance Activity²²⁰, this insurance does not include liability for damage in private life.

²¹³ V. Vilhelm, *The Role of Public Support of Risk Management in Agriculture*, Agrarian Perspectives, Proceedings of the 20th International Scientific Conference, September 13-14, 2011 Prague, Czech Republic, Czech University of Life Sciences Prague, Prague 2011, p. 179-185.

²¹⁴ M.P. M. Meuwissen et al., *Sharing risks in agriculture; principles and empirical results*, NJAS-Wageningen Journal of Life Sciences 2001, Vol. 49, Issue 4, p. 343-356.

²¹⁵ *Act of 28 March 1952 on Public Insurance* (Journal of Laws Dz.U. of 1952, No. 20, item 130); E. Stroiński, *Ubezpieczenia majątkowe i osobowe w rolnictwie (Non-life insurance in agriculture)*, Publishing House of the Academy of Finance, Warsaw 2006, p. 134-151.

²¹⁶ *Act of 2 December 1958 on Non-Life Insurance* (Journal of Laws Dz.U. of 1958, No. 72, item 357).

²¹⁷ *Act of 20 September 1984 on Non-Life Insurance* (Journal of Laws Dz.U. of 1984, No. 45, item 242).

²¹⁸ *Regulation of the Council of Ministers of 25 July 1975 on Compulsory Insurance of Farmers against Accidents and Civil Liability* (Journal of Laws Dz.U. of 1975, No. 28, item 145).

²¹⁹ *Act of 28 July 1990 on Insurance Activity* (Journal of Laws Dz.U. of 1990, No. 59, item 344).

²²⁰ (Journal of Laws Dz.U. No. 59, item 344, as amended).

Until 1989, insurance of buildings, moveable property and agricultural cultivations belonged to the so-called Statutory insurance (execution of protection after proving the circumstances defined in the Act, without the need to enter into an insurance contract). The insurance amount was determined by the State Insurance Company within 14 days from receipt of a notice²²¹.

The Act of 28 July 1990 on Insurance Activity revoked this solution (repealed the Act of 20 September 1984 on Non-life Insurance). The only remaining compulsory insurance in agricultural activities was the insurance of buildings comprising farms against fire and other unforeseeable events, as well as civil liability insurance of farmers in connection with conducting agricultural operations. This solution was maintained in the Act of 22 May 2003 on Compulsory Insurance, the Insurance Guarantee Fund and the Polish Motor Insurers' Bureau (i.e. Journal of Laws Dz.U. of 2013, item 392). Pursuant to this Act, a farmer is a natural person owning a farm, which is an area of arable land, land under ponds and land classified as arable land under buildings, exceeding a total area of 1.0 ha, if it is subject – in whole or in part – to agricultural tax, as well as an area of such arable land and land, regardless of its surface area, if agricultural production is conducted thereon, of special production type, as defined by regulations concerning income tax from natural persons.

Due to the compulsory character of insurance of agricultural cultivations and farm animals being revoked, as well as due to deterioration in the financial situation of farmers, the number of insurances of agricultural cultivations after 1989 has radically decreased. In order to popularise the increasingly significant, but underestimated by farmers insurance of agricultural cultivations, on 7 July 2005, the Act on Subsidies to Insurance of Agricultural Crops and Livestock was adopted²²². Since 1 July 2008, on the basis of amendment of 7 March 2007, insurance of agricultural cultivations, within the scope that will be mentioned in this paper, has been obligatory²²³. On the basis of the Act (Article 10c of the Act of 7 July 2005 on Insurance of Agricultural Crops and Livestock, i.e. Journal of Laws Dz.U. of 2015, item 577), a farmer – as it was already mentioned – is obliged to insure at least 50% of crop area, for which he/she received direct payments in the preceding year, a minimum from one of the following risks: flood, drought, hail, adverse effects of wintering, spring frosts. However, in this

²²¹ *Regulation of the Minister of Finance of 5 December 1989 on statutory insurance of buildings and property in an agricultural holding and plots not comprising agricultural holdings* (Journal of Laws Dz.U. No. 68, item 412).

²²² *Act of 7 July 2005 on Subsidies to Crop and Livestock Insurance* (Journal of Laws Dz.U. of 2005, No. 150, item 1249).

²²³ *Act of 7 March 2007 amending the Act on Subsidies to Crop and Livestock Insurance and Certain Other Acts* (Journal of Laws Dz.U. of 2007, No. 49, item 328).

case, in accordance with Article 4 (1) letter a of the Regulation No. 1307/2013, a farmer is a natural or legal person or a group of natural or legal persons, regardless of the legal status of such a group and its members in the light of national law, whose farm is located within the area covered by the territorial scope of Treaties, specified in Article 52 of TEU, in connection with Article 349 and 355 of TFEU, and who conduct agricultural activities. A farm (according to Art 4 (1) letter b of this Regulation) means all units used for agricultural activities and managed by a farmer, which can be found on the territory of the same member state. On the other hand, agricultural activity is (according to Art 4 (1) letter b of this Regulation):

1. production, breeding or cultivation of agricultural products, including harvest, milking, breeding of animals, as well as rearing of animals for the purposes of the farm;

2. maintaining arable land in a condition, in which it is suitable for pasturing or cultivation, without the need to undertake preparatory works going beyond regular agricultural methods and regular agricultural equipment, based on the criteria defined by Member States on the basis of the framework established by the Commission, or

3. conducting minimal actions, determined by Member States, on arable land naturally maintained in a condition fit for pasturing or cultivation.

Because a farmer was defined not only as a natural person or a farm without a minimum size threshold, in this case, the number of people potentially obliged to be insured is higher.

In order to further popularise insurances, the amendment of 2015²²⁴ increased subsidies to premiums (they are paid out by the minister competent for agriculture), which currently amount to (Article 5 (2)):

- 1) 65% of premium for insurance of crops, referred to in Article 3 (1) point 1, if insurance tariff rates determined by insurance companies do not exceed:

- a) in the case of insurance of cultivations of cereals, corn, spring rape, turnip rape, potatoes or sugar beet – 3.5% of the crop insurance amount; in the case of separating kinds of risk, the insurance amount of a given crop applies to all kinds of risk,

- b) in the case of winter rape, outdoor vegetables, hop, tobacco, fruit trees and shrubs, strawberries or legumes²²⁵ – 5% of the insurance amount; in the case of

²²⁴ *Act of 24 April 2015 amending the Act on Crop and Livestock Insurance* (Journal of Laws Dz.U. of 2015, item 892).

²²⁵ Increase in, among others, the threshold tariff rate with regard to outdoor vegetables, as well as fruit trees and shrubs will probably contribute to the increase in the area of crops covered by the insurance protection.

separating kinds of risk, the insurance amount of a given crop applies to all kinds of risk;

2) 65% of premium for insurance of animals, referred to in Article 3 (1) point 2, if insurance tariff rates determined by insurance companies do not exceed 0.5% of the insurance amount.

It should also be emphasised that, in accordance with the Act (Article 5 (2b)), insurances companies can set higher insurance tariff rates than those specified above (3.5% and 5%). In the case, when insurance tariff rates are higher than those stated above, but do not exceed 6% of the insurance amount, the amount of the granted subsidies to premiums remains unchanged, namely in the amount of 65% of the premium.

At this point it is worth noting that the abovementioned provisions are constantly modified. In the primary wording of the Act adopted in 2005, subsidies were supposed to amount up to:

- 1) 40%, but not less than 30% of the premium for crop insurance,
- 2) 50%, but not less than 40% of premium for animal insurance.

At the same time, the subsidies were to be used, if the insurance tariff rates:

- 1) of crops – did not exceed 3.5% of the insurance amount;
- 2) of animals – did not exceed 0.5% of the insurance amount.

In the case of insurances of crops, two key elements important for farmers should be pointed out. Firstly, (Article 10c (4) points 2-3) – the insurance company's liability with regard to compulsory insurance of crops begins, if these crops are insured from the risk of damages caused by:

- flood, drought, hail and spring frosts – after 14 days from conclusion of the compulsory insurance contract;
- adverse effects of wintering – from the date of signing the compulsory insurance contract, provided that it should be concluded by 1st December.

Secondly (Article 6 (2)), in the case of crop insurance, the insurance company is liable for damage caused by:

- 1) hurricane, flood, heavy rain, hail, lightning, landslide, avalanche, adverse effects of wintering, and spring frosts, if damages to the main crop amount to at least 10%;
- 2) drought, if damages to the main crop amount to at least 25%.

As it was already mentioned, the Act has been amended a couple of times. The first change was made already in 2006²²⁶, when two risks were removed from the Act in question: fire and explosion, and the scope of crops (hop, vegetables, fruit trees and shrubs, potatoes) and animals (poultry, fish) covered by this in-

²²⁶ *Act of 27 April 2006 amending the Act on Subsidies to Crop and Livestock Insurance* (Journal of Laws Dz.U. of 2006, No. 120, item 825).

insurance was broadened. However, the most important changes were made by the amendment of 7 March 2007²²⁷, which introduced the abovementioned mandatory insurances and changed the name of the Act, from "on Subsidies to Insurance of Agricultural Cultivations and Livestock" to "on Insurance of Agricultural Cultivations and Livestock". The Act also broadened the scope of plants, which may be covered by subsidised insurance, and introduced tobacco, strawberries, and legumes; introduced the possibility of separating particular risks in the insurance contract, as well as this insurance of crops against "a certain risk" (Article 3 (1a)), e.g., usually occurring in a given area. This amendment also increased subsidies to premiums – up to 60%, but no less than 50% of the premium for insurance of crops. It also changed the definition of drought and spring ground frosts.

Another amendment of 25 July 2008 introduced a change in the definition of spring ground frosts (in wording binding to this day – they may occur from 15 April, rather than from 1 May), changed – reduced – the subsidy to premiums (50%, but not less than 40% of the premium), as well as clarified several provisions related to obtaining subsidies by insurance companies²²⁸. Under this Act, since 1 September 2008²²⁹, provisions are in force, concerning integral franchise and own contribution (Article 6 (2) and (3)).

The amendment of 19 December 2008²³⁰ applied only to the principles of inspection of the minister competent for agriculture in insurance companies, with regard to execution of contracts for subsidies and insurance contracts. The amendment of 25 March 2011, like the previous amendment, changed the provisions concerning relations between the minister competent for agriculture and the insurance company with respect to selection of companies providing insurance with subsidies to premiums²³¹.

²²⁷ Act of 7 March 2007 amending the Act on Subsidies to Crop and Livestock Insurance and Certain Other Acts (Journal of Laws Dz. U. of 2007, No. 49, item 328).

²²⁸ Separation of risks to a greater extent allows for adjusting the insurance offer to the needs of farmers R. Stempel, *Ubezpieczenia rolne w gospodarstwach rolników indywidualnych Polski północnej (Agricultural insurance in holdings of individual farmers in northern Poland)*, *Wiadomości Ubezpieczeniowe (Insurance News)* 2010, no. 2, p. 33.

²²⁹ Act of 25 July 2008 amending the Act on Crop and Livestock Insurance and the Act on the National System of Producer Records, Farm Records and Records of Aid Applications (Journal of Laws Dz.U. of 2008, No. 145, item 918).

²³⁰ Act of 19 December 2008 amending the Act on the Freedom of Business Operations and Certain Other Acts (Journal of Laws Dz.U. of 2009, No. 18, item 97).

²³¹ Act of 25 March 2011 on Overcoming Administrative Barriers for Citizens and Entrepreneurs (Journal of Laws Dz.U. of 2011, No. 106, item 622).

The last amendment was the aforementioned amendment of 24 April 2015²³², which among others:

1. increased subsidies to the premium up to 65% of the premium for crop insurance (Article 5 (2) point 1),
2. introduced the possibility of applying, for outdoor vegetables, fruit trees and shrubs, tariff rates higher than 6% of the insurance amount (Article 5 (2c)),
3. introduced the possibility to conclude a "co-insurance agreement", namely allowed insurance companies to jointly provide insurance protection to agricultural producers and participate in insurance risk on the terms agreed thereby and in the agreed proportions (Article 7 (2a)),
4. shortened from 30 up to 14 days the deadline (grace period), on which the insurance company becomes liable after concluding the contract, in the case of floods or drought (Article 10c (4) point 2).

The above changes demonstrate the evolution of legal regulations, which were supposed to lead to popularisation of insurances. The possibility of insurance companies to increase premiums (depending on risk known thereto), as well as the increase in subsidies to premiums undoubtedly affects the increase in the number of concluded contracts or/and the insured acreage.

The changes in the compulsory character of insurance introduced in 1 July 2008 assumed insurance of 50% of crops, for which subsidies were paid out, namely approx. 7 million hectares. However, these numbers were shaped completely differently (although the compulsoriness affected the popularity of insurance), i.e. in 2006 – 311 740 ha, 2007 – 575 029 ha, 2008 – 1 832 036 ha, 2009 – 2 808 104 ha, 2010 – 2 845 777 ha, 2011 – 3 032 634 ha, 2012 – 2 751 438 ha, 2013 – 3 398 811 ha.

When amending the Act in 2015, it was assumed that the changes will result in the area of the insured agricultural cultivations in the period of 2015-2020 amounting to²³³: in 2015 – 3.8 million ha, 2016 – 4.0 million ha, 2017 – 4.2 million ha, 2018 – 4.5 million ha, 2019 – 4.5 million ha, 2020 – 4.5 million ha.

On the other hand, in the case of livestock, it was assumed that the insurance will cover 5 million heads of animals, mainly poultry. In order to monitor implementation of the objective, a measure was used – the area of the insured crops in relation to arable land (%)²³⁴, which is assumed to reach the following level in the

²³² *Act of 24 April 2015 amending the Act on Crop and Livestock Insurance* (Journal of Laws Dz.U. of 2015, item 892).

²³³ Substantiation of the Draft Act amending the Act on Crop and Livestock Insurance (No. 3247), <http://www.sejm.gov.pl> (15.10.2015).

²³⁴ The surface area of arable land in Poland in 2013 amounted to approx. 13.82 million ha. Statistical Yearbook of Agriculture 2014, GUS, Warsaw 2014, p. 84.

particular years: in 2015 – 27.4%, 2016 – 28.8%, 2017 – 30.2%, 2018 – 32.4%, 2019 – 32.4%.

In 2013, applications for direct subsidies were submitted by 1.35 million²³⁵ agricultural producers. The applications covered 14.1 million ha, so the mandatory insurance of agricultural cultivations covered, similarly to 2008, approximately 7 million hectares²³⁶.

Growth in the popularity of insurances is correlated with the state subsidy level to premiums. Within 10 years, these subsidies increased from about PLN 9.86 million up to PLN 164.4 million in 2013, which indicates significant growth in popularity of these insurances. In 2011 and 2012, the sum of the benefits paid out on account of insurance of crops several times exceeded the amount of subsidies to premiums. This undoubtedly contributed to the increase in financial security of agriculture, and, at the same time, also positively affected the whole economy.

Table 27

Amounts disbursed on insurance of agricultural cultivations and livestock in 2006-2013

Year	Amounts disbursed on insurance of agricultural cultivations and livestock, including:				Amount of compensations paid out on account of crop insurance (in PLN thousand)
	Subsidies to insurance premiums:			subsidies to compensations on account of damages caused by drought*	
	total	agricultural cultivations insurance	livestock insurance		
2006	9 861.3	9 810.2	51.1	–	–
2007	31 437.7	31 332.4	105.3	–	–
2008	97 637.6	10 728.3	54.3	86 855.0	193 390.59
2009	132 360.0	130 913.9**	59.1	1 387.0	120 803.86
2010	99 121.2	99 043.3	77.9	–	97 648.30
2011	124 711.0	124 166.7	89.7	454.6	361 838.83
2012	162 412.2	162 248.8	123.2	40.2	718 705.93
2013	164 407.1	164 245.5	161.6	–	151 435.31

*The amounts of subsidies to compensations reported in particular years also include subsidies to compensation paid by insurances companies as a result of drought in December of the previous year.

**Including the amount of PLN 50 578 200, relating to the contracts concluded in 2008, for which subsidies to premiums were transferred from the funds for 2009.

Source: own preparation by D. Walczak.

²³⁵ In 2004, 1.4 million farmers submitted applications for direct payments. In the subsequent year, 2005, the maximum number of people, who submitted such applications was 1.48 million. *Report on operations of the Agency for Restructuring and Modernisation of Agriculture 2014*, Warsaw, ARMA 2015, p. 29.

²³⁶ *Report on operations of the Agency for Restructuring and Modernisation of Agriculture 2014*, op. cit., p. 42.

Tables 29 and 30 present the amount of compensation paid in particular years, taking account of different types of risk. As presented in Table 29 and in the previous part of the paper, the weather risk is variable, which can be proven on the basis of the risk "adverse effects of wintering", on account of which more than PLN 587 million was paid out in 2012, while the year before – PLN 160 million, and a year later – PLN 13 million (Table 29), with a similar number of concluded insurance contracts (Table 30).

Table 28

Amounts of compensations paid out in 2008-2013 by insurance companies, which have entered with the Minister of Agriculture and Rural Development into contracts for subsidies to insurance premiums of agricultural cultivations and livestock on account of particular risks

Risks	Amount of compensation paid out in particular years (in PLN thousand)					
	2008	2009	2010	2011	2012	2013
Drought	157 832	1 357	604	2 313	116	39
Flood	304	1 567	4 362	1 894	1 081	1 697
Adverse effects of wintering	898	2 268	31 487	160 644	587 776	13 033
Spring frosts	2 910	32 922	8 049	137 249	7 386	3 322
Hail, hurricane, heavy rain, lightning, landslide, avalanche	31 445	82 688	53 144	59 736	122 345	133 342
Total	193 390	120 803	97 648	361 838	718 705	151 435

Source: as in Table 27.

Table 29

Structure of insurance of agricultural cultivations according to risks in 2008-2013

Risks	Number of risks – contracts, in which insurance covers particular risk					
	2008	2009	2010	2011	2012	2013
Drought	14 714	9 001	1 494	648	274	117
Flood	13 729	1 863	2 064	610	348	427
Adverse effects of wintering	71 738	44 646	50 770	54 204	63 030	65 620
Spring frosts	72 182	67 834	73 631	69 896	77 672	75 063
Hurricane	13 679	1 369	4 623	4 970	6 468	11 328
Heavy rain	13 679	1 352	4 623	4 970	6 468	11 328
Hail	88 437	174 465	188 008	171 835	169 950	181 256
Lightning*	13 613	1 340	4 597	4 882	4 851	5 492
Landslide*	13 613	1 340	4 597	4 882	4 851	5 492
Avalanche*	13 613	1 340	4 597	4 871	4 728	5 492
Total	328 997	304 550	339 004	321 768	338 640	361 615

*risks considered jointly.

Source: as in Table 27.

While presenting the next insurance in detail, it should be mentioned that, in the case of civil liability insurance of farmers, according to the Act of 22 May 2003 on Compulsory Insurance, the Insurance Guarantee Fund and the Polish Motor Insurers' Bureau, the insurance company is not liable for damages:

- 1) to property, caused to a farmer by people working in his/her agricultural holding or remaining in the farmer in a common household, or to individuals remaining with the farmer in a common household or working in his/her agricultural holding;
- 2) caused by transfer of infectious diseases not spread by animals;
- 3) to property, caused by a defect of goods supplied by a person covered by the insurance or by provision of services; if personal injury was caused as a result of these defects, the insurance company does not bear any liability only if the person covered by the insurance was aware of these defects;
- 4) arising as a result of damage, destruction, loss or disappearance of items borrowed or received by a person covered by civil liability insurance of farmers for use, storage or repair;
- 5) consisting in loss of cash, jewellery, works of art, securities, any kind of documents and stamp, coin collections and others;
- 6) consisting in pollution or contamination of the environment;
- 7) arising from cash fines, court and administrative fines, as well as penalties or fines related to amounts due for the state budget.

Each of the abovementioned exclusions may have financial effects for farmers if they cause damage. It is worth noting the exclusion related to excluding damages related to contamination or pollution of the environment, which is very likely to appear in the case of farmer's operations, and, considering the increasing benefit amounts, may be financially straining for the perpetrator (in this case – the farmer)²³⁷. The insurance protection covers only damages caused in connection with the farmer owning the particular farm²³⁸ (Article 50 (1)), and thus, e.g. according to the ruling of the Supreme Court of 12 April 2013, the use of an animal rearing in an agricultural holding, outside of that holding in order to pursue the hobbies of the farmer or his/her household member, is not covered by the guarantee liability of the insurer²³⁹.

²³⁷ Similar exclusion can be found in the civil liability insurance of motor vehicle owners, which may also, in certain situations, apply to a farmer, who often (mainly) uses motor vehicles in direct contact with soil, the environment.

²³⁸ In the Act of 20 September 1984 on Non-Life Insurance (Journal of Laws Dz.U. of 1984, No. 45, item 242), the statutory civil liability insurance of a farmer also covered damages caused in private life (Article 6 (5)).

²³⁹ Judgement of the Supreme Court of 12 April 2013 (file ref. no. IV CSK 565/12).

In the case of civil liability insurance of farmers, it is also worth emphasising the scope of liability of this insurance. In accordance with the ruling of the District Court in Słupsk of 26 July 2013, if damage caused by a farmer is related to "operation" of the farm ... and thus with operation of any device (machine), driven by the forces of nature, the liability of the farmer will be based on the principle of risk, in the case of damage caused during works without use of machines and devices driven by the forces of nature, this responsibility will be based on the principle of fault (which has to be proven) or equity²⁴⁰.

Just as the number of insurance contracts concluded in the case of crop insurance should be analysed in the context of the number of agricultural producers, who applied for direct subsidies, the civil liability insurance and building insurance should be analysed in the context of the number of individual agricultural holdings in Poland. As indicated by the numbers presented in Table 31, the popularity of these insurances is very high, and – due to the definition of the Central Statistical Office, which refers to farms with the total area of over 1 ha, which actually conduct agricultural activities – we may even formulate a hypothesis that the number of insurance contracts concluded in this scope is greater than the number of agricultural holdings actually conducting agricultural activities.

The presented business insurance in agriculture is mandatory, thus lack thereof may result in some fees, in the case of:

1. insurance of buildings comprising agricultural farm against fire and other unforeseeable events – fine constitutes the equivalent of one fourth of the minimum remuneration for work (Article 88 (2) point 3 of the Act on Compulsory Insurance),
2. civil liability insurance of farmers in connection with conducting agricultural operations – the equivalent of one tenth of the minimum remuneration for work (Article 88 (2) point 3 of the Act on Compulsory Insurance),
3. crop insurance – the amount of fee is the PLN equivalent of EUR 2 per 1 ha, determined by using the average exchange rate announced by the National Bank of Poland, according to the table of exchange rates no. 1 in the inspection year (Article 10c (7) of the Act of 7 July 2005 on Insurance of Agricultural Crops and Livestock).

²⁴⁰ Judgement of the District Court in Słupsk of 26 July 2013 (file ref. no. IV Ca 357/13); J. Nawracała, *Ubezpieczenia OC rolnika. Odpowiedzialność na zasadzie winy czy ryzyka (Farmer's civil liability insurance. Fault-based or no-fault liability)*, Prawo Asekuracyjne (Insurance Law) 2009, no. 2, p. 98-105.

Table 30

The number of individual agricultural holdings with the total area of more than 1 ha, and the number of concluded contracts for mandatory civil liability insurance of farmers and buildings in agricultural farms in 2008-2013 (in thousand)

Specification	Individual agricultural holdings with the surface area of more than 1 ha*	Number of compulsory civil liability insurance policies of agricultural holdings of natural persons	Number of compulsory insurance policies of agricultural buildings of natural persons
2008	1806.5	1452.2	1640.7
2009	1765.9	1439.4	1627.9
2010	1480.2	1419.7	1609.9
2011	1614.9	1509.4	1688.4
2012	1452.9	1490.9	1508.8
2013	1391.1	1463.5	1929.2

*In 2010, the definition a farm has been changed. According to the binding definition, agricultural holdings do not include owners of arable land conducting agricultural activities, as well as owners of total area of arable lands smaller than 1 ha conducting agricultural small-scale activities. Additionally, due the research subject, the Table does not include farms of total area smaller than 1 ha.

Source: D. Walczak, *Conditions of functioning of the social security system for farmers in Poland*, TNOiK, Toruń 2011; *Biuletyn Roczny. Rynek ubezpieczeń (Annual Bulletin. Insurance market) 2010*, Polish Financial Supervision Authority, Warsaw 2011; *Biuletyn Roczny. Rynek ubezpieczeń (Annual Bulletin. Rynek ubezpieczeń 2011*, Polish Financial Supervision Authority, Warsaw 2012; *Biuletyn Roczny. Rynek ubezpieczeń (Annual Bulletin. Rynek ubezpieczeń 2012*, Polish Financial Supervision Authority, Warsaw 2013; *Biuletyn Roczny. Rynek ubezpieczeń (Annual Bulletin. Rynek ubezpieczeń 2013*, Polish Financial Supervision Authority, Warsaw 2014; *Rocznik Statystyczny Rolnictwa (Statistical Yearbook of Agriculture) 2014*, Warsaw, GUS 2014, 113; *Rocznik Statystyczny Rolnictwa 2013*, Warsaw, GUS 2013, p. 10.

Table 32 presents the entities obliged and authorised to control farmers with regard to possession of mandatory insurance. Article 84 (5) of the Act on Compulsory Insurance, the Insurance Guarantee Fund and the Polish Motor Insurers' Bureau additionally indicates that the obliged and authorised bodies carry out inspection on the terms and in the mode specified by provisions governing the activities of these bodies. In the case of crop insurance, lack of this insurance in the compulsory scope may also result in reduction in the state aid granted by the State Treasury on the basis of the Commission Regulation (EU) No.702/2014 of 25 June 2014 declaring certain categories of aid in the agricultural and forestry sectors and in rural areas compatible with the internal market in application of Articles 107 and 108 of the Treaty on the Functioning of the European Union (Article 25 (9)).

Table 31

Inspections of fulfilment of the obligation of concluding an insurance contract for agricultural buildings, civil liability of farmers and crops

Specification	Controlling entity		The beneficiary of the fees for failure to meet the obligation of concluding the compulsory insurance contract
	obliged	authorised	
Insurance of buildings	head of gmina (mayor or president of a city) competent with regard to the location of the farm or place of residence of the farmer	a) the governor of powiat competent with regard to the location of the farm or place of residence of the farmer, b) Insurance Guarantee Fund	the gmina competent with regard to the location of the farm
Insurance of crops			the gmina competent with regard to the place of residence or the registered office of the farmer
Civil liability insurance of farmers	head of gmina (mayor or president of a city) competent with regard to the location of the farm or place of residence of the farmer	a) the governor of powiat competent with regard to the location of the farm or place of residence of the farmer, b) Insurance Guarantee Fund.	Insurance Guarantee Fund

Source: own study on the basis of the Act on Compulsory Insurance (Articles 84 and 88) and the Act on Insurance of Agricultural Cultivations and Livestock (Article 10c (9) and (11)).

As a result of the compulsory nature of civil liability insurance of farmers, the Insurance Guarantee Fund (Ubezpieczeniowy Fundusz Gwarancyjny - UFG) satisfies claims for damages arising on the territory of the Republic of Poland under this insurance (similarly – on specified terms – it satisfies claims for civil liability of motor vehicle owners). In the case of civil liability insurance of farmers, this applies to situations, when a farmer, a person living in a common household or a person working in his/her household are obliged to compensate damage caused as a result of the farmer owning the particular farm, being a consequence of death, bodily injuries, health disorder or loss, destruction or damage to property, and the farmer was not insured under the compulsory civil liability of farmers. On the basis of data made available by UFG in 2013, there were 77 such damages, and in 2014 – 81, while the paid out compensations amounted to, respectively, 59 and 79. This proves popularisation of these insurances among

farmers²⁴¹. It is confirmed by the number of issued calls to pay the fee for failure to meet the obligation to conclude a contract for civil liability insurance of farmers. In 2013, such calls amounted merely to 1470, while in 2014 – 628.

Table 32

Number of damage claims submitted and paid by UFG under the lack of farmer's mandatory civil liability insurance and number of issued calls to pay the fee for failure to meet the obligation to conclude a contract for civil liability insurance of farmers

Specification	2013	2014
Number of damage submitted claims for civil liability insurance of farmers	77	81
Number of damages paid for civil liability insurance of farmers	59	79
Number of issued calls for civil liability insurance of farmers	1470	628

* Due to the fact that the entity authorised to collect fines on account of lack of crop insurance and lack of insurance of agricultural buildings is not UFG, preparation of a similar study for these insurances is practically impossible.

Source: *Annual Report of UFG, Warsaw 2015, p. 9-16.*

5.3. Review of proposals for the future

In 2015, a reform was conducted of subsidised crop and livestock insurances. However, it should not be forgotten that it is possible to completely change the scope of crop insurance, by introducing index insurances, aimed at mitigation of the effects of the risk of yield reduction as a result of adverse climatic conditions²⁴². Index is a specified parameter²⁴³, the level of which is monitored by an external independent institution. Payment of a benefit is executed on the basis of a specific index, when its level exceeds the fixed range. As a result, payment is made on the basis of realisation of the fixed parameter, rather than on the basis of real losses of a farmer. The advantages of this method may include limiting the phenomenon of adverse selection, reduction in operational costs related to execution of crop insurance, while its challenge is an objective determination of occurrence of specific events, by means of parameterisation. Table 34 presents potential advantages, disadvantages, opportunities and hazards resulting from introduction of index insurances, from the point of view of an agricultural producer. This Table also contains references to other entities on the insurance market. Index insurances may offer coverage of the effects of previously non-insured events or decrease in the price of

²⁴¹ *Annual Report of UFG, Warsaw 2015, p. 9-16.*

²⁴² A. Sarris, *Weather index insurance for agricultural development: introduction and overview*, *Agricultural Economics* 2012, Vol. 44, Issue 4-5, p. 381.

²⁴³ Such a parameter should be calculated on the basis of historical data, in the scope of probability of occurrence of a phenomenon and its effects.

these insurances. Low insurance price and extension of the scope of customers would directly reduce the potential costs incurred by the state in the event of a natural disaster²⁴⁴.

With regard to implementation of any future solutions, the causes of low popularity of crop insurance should also be specified. The reason why many farmers are not insured may relate to treating a farm as an additional source of income, which does not need to be insured. As indicated in the research, persons declaring farms as the basic source of income significantly more often own this insurance²⁴⁵. Meanwhile, more and more Polish farmers earn their income outside of agriculture. One of the proofs is the number of the farmers insured in the Agricultural Social Insurance Fund at the end of 2014, which amounted only to 879 761 people²⁴⁶. As compared to the number of agricultural holdings in Poland or the number of applications for direct payments, it suggests that a considerable part of farmers is not insured under social insurance of farmers, as they are covered by the common system²⁴⁷.

Of course, the lack of crop insurances is also caused by the trust bestowed in property insurance companies in Poland. The farmers' opinion on the companies is definitely worse than the opinions of employees or the self-employed. It is worth comparing the values presented in Table 35 with the trust, e.g., in very well assessed banks, trusted by ("yes, great" and "yes, moderate") 44.8% of self-employed, 39.8% of employees and 28.6% of farmers, which is several or over ten percentage points better than insurance companies.

²⁴⁴ M. Kaczała, K. Łyskawa, *Koncepcja polis indeksowych i możliwość ich zastosowania w systemie obowiązkowych dotowanych ubezpieczeń upraw w Polsce (The concept of index policies and the possibility of their application in the system of compulsory subsidised crop insurances in Poland)*, presentation, Polish Insurance Association Conference, Warsaw 5.11.2012; M. Kaczała, K. Łyskawa, *Stosunek do konceptu ubezpieczenia indeksowego suszy osób kierujących indywidualnymi gospodarstwami rolnymi w Polsce (The attitude towards the concept of index insurance against drought among people managing individual agricultural holdings in Poland)*, *Wiadomości Ubezpieczeniowe (Insurance News)* 2011, 4, p. 34-40.

²⁴⁵ D. Walczak, *Uwarunkowania...* op. cit., p. 207.

²⁴⁶ *Kwartalna Informacja Statystyczna (Quarterly Statistical Information)*, 4th quarter of 2014, Warsaw 2015, p. 25.

²⁴⁷ There are probably also other reasons for this difference, e.g.: the farm is managed by a pensioner or a retiree.

Analysis of properties of index products (SWOT analysis)
from the point of view of an agricultural producer

Advantages of index insurances	Disadvantages of index insurances
Low price arising from lower costs of security provision	Low benefit level
Possibility of securing against the effects of previously non-insured events	Benefit level independent from the size of the damage
Non-dependent on state aid in the event of a natural disaster	The presence of a basis risk, especially with regard to the precipitation index – possible lack of benefits despite actual damage, especially in the case of farmers with outstanding output
Extended scope of potential customers	Payment only after calculation of index – in fact, after the end of the insurance period
Simple liquidation, without a visit of a liquidator	It is essential to secure measurement instruments before any interference
Possibility for the agricultural producer to make a current assessment of whether the damage occurred	Early stage of development of such a solution involves: weather derivatives, probably hardly convincing for farmers
Reduced number of disputes	Difficult access to the product within a climatically diverse area, where historical data are of poor quality, available time series are short, and damage is catastrophic in size
Relatively simple product	Possibility of speculation
Possible trade on the secondary market	x
Opportunities	Hazards
Involvement of agricultural producers in the data collection process and in improvement of the index, also by imposing a top-down obligation of reporting certain data	Historically established habits of an agricultural producer to fully cover the damage
Subsidy to premium	Initial increase in the number of disputes
Easier to obtain other forms of support	Lack of trust towards index monitoring institutions
	Lack of understanding and acceptance of the correlation between the weather phenomenon and the damage
	<u>Imposing the obligation of insurance</u>
	Harder to obtain financial aid from the state budget in the case of some catastrophic events, or conditioning provision of aid in its full amount upon insuring a relevant part of acreage
	Benefit level will not be indexed and will not be enough for sustenance and resuming production
	The need to involve third party entities in assessment and trust them
	Legal doubts (excessive accumulation of wealth) that may result in the legal liability being borne by the agricultural producer
	Possible imposing onto an agricultural producer additional obligations with regard to collecting and sharing data, in order to improve the index
	Introduction of the legal obligation may result in protests of agricultural producers

Source: J. Handschke, M. Kaczala, K. Łyskawa, *Koncepcja polis indeksowych i możliwość ich zastosowania w systemie obowiązkowych dotowanych ubezpieczeń upraw rolnych (The concept of index-based policies and the possibility of their application in the system of compulsory subsidised crop insurance)*, Polish Insurance Association, Warsaw 2015, p. 71.

Table 34

Trust of particular professional groups in property insurance companies

Specification		Trust in property insurance companies				In total
		yes, great	yes, moderate	no	no opinion	
Source of farm income	employees	1.2 %	27.2 %	34.2 %	37.4 %	100.0 %
	farmers	1.2 %	22.4 %	32.3 %	44.1 %	100.0 %
	self-employed	1.2 %	31.7 %	36.8 %	30.3 %	100.0 %
	retirees	1.3 %	20.9 %	30.7 %	47.0 %	100.0 %
	pensioners	1.8 %	17.4 %	29.0 %	51.7 %	100.0 %
	living on unearned sources	1.4 %	17.1 %	32.7 %	48.7 %	100.0 %
Total		1.3 %	24.4 %	32.9 %	41.4 %	100.0 %

Source: *Social diagnosis: integrated database*. <http://www.diagnosis.com> (25.08.2015).

Certainly, there are certain factors affecting only low popularity of crop insurances. These factors relate not only to farmers and insurance companies, but also the government. In order to limit these difficulties, changes are made in the functioning of insurances²⁴⁸.

A serious problem also affecting these insurances is the state assuming the role of an insurer. The statements of state authorities put them in the role of an insurer too often, effectively discouraging buying insurance by farmers. Politics often use phrases such as: the government will help the injured farmers, especially during the electoral campaign²⁴⁹. In 2015, the government decided to spend PLN 488 million on the aid for farmers, who sustained losses as a result of drought. Of course, the assistance covered the insured farms, the remaining ones – as it was already mentioned – could receive aid reduced by 50 percent.

The increase in popularity of crop insurances, on the one hand, is in the best interest of all businesses operating on this market – namely farmers, insurance companies and the government. On the other hand, the same entities are responsible for popularisation of these insurances. The legal changes introduced by the government result in greater acceptance of these insurances by insurance com-

²⁴⁸ Not all changes are beneficial, as it was presented in the previous part of the publication. The subsidy to premiums was reduced in 2008, which could negatively affect the popularity of these insurances.

²⁴⁹ D. Walczak, *Wybrane determinanty rozwoju rynku ubezpieczeń gospodarczych w Polsce (Selected determinants of the business insurance market development in Poland)*, [in:] *Problematyka współczesnych ubezpieczeń (The issues of contemporary insurances)*, collective work edited by A. Organiściak-Krzykowska, J. Bak, Warsaw-Olsztyn 2013, Institute of Labor and Social Affairs - University of Warmia and Mazury, p. 9-20.

panies, e.g. through changes in calculation of subsidies to insurances. These changes also affect the possibility of offering a more market-like offer, which will be positively received by farmers. At the same time, insurance companies and the government should to a greater extent work towards popularisation of these insurances, as well as towards increasing insurance awareness among farmers.

Table 35

Difficulties perceived by farmers, the government and insurances companies, relating to insurance of agricultural cultivations and livestock (state as at 2012)

FARMERS	
Opinion of clients	Details
Insurance obligation	No justified character of introducing the obligation, not having the policy causes lack of disaster loan, lack of inspection of compliance with the obligation
High insurance price	No acceptance for an insurance price higher than 2.5% of the insurance amount paid by the farmer*
Unavailability of subsidies to premiums for groups of clients	Applies to “large” entities, producers of vegetables and fruit
No possibility of insuring specified risks	No insurance protection against damages caused by game, inland birds, diseases and pests
No attractive livestock insurances	Limited insurance offer for animals against death or slaughtering out of necessity as a result of disease or accident
GOVERNMENT	
Small number of insurance companies dealing with insurance subsidised from the state budget	
Underspending funds for subsidies to premiums	
Expecting even greater involvement agricultural communities in legislative processes related to insurance of agricultural cultivations and livestock	
Problems with assessment of the scale of financial commitment in the contribution of the state budget in compensations	
Limited possibility of helping farmers in the case of catastrophic phenomena – tension between insurance and social aid	
INSURANCE COMPANIES	
No profitability of crop insurance	
Anti-selection of risk	
Handling conclusion of a very high number of insurance contracts within a short time (October – November)	
Many clients perceiving insurances only through the prism of price	
Settlement of subsidies to premiums for the 4th quarter should take place until 15th December of each year	
The need to quickly adjust General Terms of Insurance to the changing law (seasonality of entering into insurance contracts)	
Handling claims in the case of unforeseeable catastrophic events – accumulation of claims within a very short time	
Restrictions in using subsidies to premiums*	
Detailed problems with crop insurance against adverse effects of wintering, spring ground frosts, draught and flood	

*changed by the amendment of 2015

Source: A. Janc, *Trudności w funkcjonowaniu ubezpieczeń upraw i zwierząt gospodarskich w Polsce w latach 2006 – 2012 (Difficulties in the functioning of crop and livestock insurances in Poland in 2006 – 2012), Presentation, Conference of the Polish Insurance Association, Warsaw 5.11.2012.*

With regard to the two remaining insurances, already existing in an almost unchanged form for a few dozen years, the question should be answered, whether both insurances should still be mandatory. Undoubtedly, civil liability insurance of a farmer is supposed to defend the interests of the farmer and the injured party, however, as it was already mentioned, insurance of buildings is just a property insurance introduced to protect farmers. Therefore, three options remain for consideration in this respect in the long run: whether to remove the compulsoriness, at least for insurance of buildings, which is one of the few mandatory insurances, in which the insurer is also potentially the only injured party²⁵⁰. Obviously, the existing *status-quo* can be maintained, namely the compulsoriness of all three business insurances in agriculture. Keeping these insurances is supported by FADN statistics for the years 2007-2013; from among the farmers participating in this survey, most of them received benefits resulting from the insurance of buildings (389 farmers) with average value of PLN 11 813.02. On the other hand, the farmers received the highest amounts (99 farmers) under production-related insurance (e.g. crop and animals insurance) – PLN 12 348.02²⁵¹. The theoretical discussion can also be initiated – third option – over increasing number of mandatory insurances (at least for some farmers), e.g., to include environmental insurance²⁵².

5.4. Assessment of the effects of regulations

The indicated insurance are primarily supposed to protect material interest of the farmer. Thus, it is necessary to show how important it is for these insurances to function efficiently. With regard to crop insurance, farmers receive more funds than the annual average state subsidies to these insurances. The highest difference occurred in the already mentioned year 2012, when the State Treasury paid an additional PLN 162 million, while farmers received more than PLN 700 million on account of damages.

²⁵⁰ J. Orlicka, M. Orlicki, *Obowiązkowe ubezpieczenie budynków rolniczych w świetle nowej regulacji - wybrane zagadnienia (Compulsory insurance of agricultural buildings in the light of the new regulation - selected issues)*, *Ubezpieczenia w Rolnictwie. Materiały i Studia (Insurance in agriculture. Materials and Studies)* 2003, no. 4, p. 79-80.

²⁵¹ Polish FADN (Farm Accountancy Data Network), Database.

²⁵² We may also consider extending the obligation of insurance of buildings onto the whole population. M. Orlicki, *Zasady projektowanego obowiązkowego ubezpieczenia budynków mieszkalnych od skutków ryzyka katastroficznego – kwestie prawne i techniczno-ubezpieczeniowe (The principles of the designed compulsory insurance of residential buildings against the effects of catastrophic risk – legal and technical-insurance issues)*, (in:) collective work edited by E. Kowalewski, *Ubezpieczenie budynków od ryzyk katastroficznych. Aspekty prawno-ekonomiczne (Insurance of buildings catastrophic against risks. Legal and economic aspects)*, Toruń 2013, p. 261–272.

Table 36

Average annual efficiency of the granted subsidies to crop insurance premiums

Year	Subsidy amount (in PLN thousand)	Amount of compensations paid out (in PLN thousand)	Subsidy efficiency (%)
2008	61 306.50	193 390.59	315.45
2009	80 335.70	120 803.86	150.37
2010	99 043.30	97 648.30	98.59
2011	124 166.70	361 838.83	291.41
2012	162 248.80	718 705.93	442.97
2013	164 245.50	151 435.31	92.20

Source: as in Table 27.

With regard to the civil liability insurance, as well as the insurance of buildings, the presented amounts of compensations indicate the significance of these insurances. As indicated in previous part of the publication, these insurances are very popular, therefore, the premium written is relatively stable. On the other hand, farmers (or injured persons, in the case of civil liability) every year receive a few hundred million PLN of compensations under the insurance contracts concluded in this respect. Undoubtedly, these insurances affect the stability of the agricultural sector, which, as a whole, thanks to the insurance amounts, is able to compete with foreign markets. At the same time, particular farms, thanks to the received benefits, maintain financial stability, and therefore they do not expect assistance from the state (or local government). On the contrary, they often, e.g. by reconstruction of destroyed buildings, generate the demand (financed from the received funds) for specific products and services²⁵³.

Crop insurance and insurance of buildings is supposed to ensure financial security of a farmer, while civil liability insurance of a farmer protects him/her against the effects of compensation claims of a person, towards whom the farmer is liable under civil law. Therefore, the role of insurances, which are to directly affect financial situation of more than 1.5 million of agricultural holdings, namely over 2 million people, is indeed great. At the same time, it is impossible not to appreciate the role of civil liability insurance of farmers, protecting also the interest of the injured party, namely any person, who may suffer damage caused by agricultural operations of a farmer. However, the effect of business insurance in agriculture is much more widespread, as it affects sustainable development of the whole country.

²⁵³ The purpose of this publication is different, but it is worth mentioning the surplus premium for the civil liability insurance and insurance of buildings comprising agricultural farm over the paid benefits, namely the potential (considering other costs related to these insurances: acquisition, claim settlement, management costs, etc., the income will no longer be so significant) income tax resulting from the generated income, which fuels the state budget thanks to these insurances.

Table 37

Gross paid compensations and benefits under civil liability insurance of farmers and buildings in agricultural holdings (in PLN thousand)

Years	Civil liability insurance of farmers		Insurance of buildings in agricultural holdings	
	Gross premium written (in PLN thousand)	Gross paid compensations and benefits (in PLN thousand)	Gross premium written (in PLN thousand)	Gross paid compensations and benefits (in PLN thousand)
2010	50 803.34	25 151.59	388 789.06	511 527.85
2011	54 057.02	27 543.18	421 594.93	200 850.34
2012	53 199.31	31 015.91	418 775.95	142 994.24
2013	58 030.62	29 480.15	434 101.53	146 627.10
2014	57 028.10	38 911.10	447 298.50	117 442.63

Source: as in Table 31; *Biuletyn Roczny. Rynek ubezpieczeń 2014*, the Polish Financial Supervision Authority, Warsaw 2015.

Sustainable development is related to the coexistence of social, economic, environmental, institutional and political order. Integrity of these orders is implemented through balanced protection of the natural, human, social and anthropogenic capital (namely capital generated by man: economic and cultural capital)²⁵⁴, which is directly influenced by business insurance in agriculture. The compulsory nature of these insurances²⁵⁵, as it was already mentioned, is important, not only for farmers, but also for the state as a community²⁵⁶. Social costs, related to the effects of changes in weather conditions, remain significant for sustainable development. After all, natural disasters affect not only farmers, e.g. the largest floods in Poland caused numerous social and economic losses, such as damage to infrastructure, death of animals and water contamination²⁵⁷. Institutionalised aid may also help one of the injured entities to reconstruct other damages.

Undoubtedly, business insurance can minimise the risk in its financial aspect, both for the state, as well as for the insured. Civil liability insurance of farmers may affect financing of costs associated with damage to someone else's property done by a farmer. Insurance of buildings significantly affects resuming

²⁵⁴ *Wskaźniki zrównoważonego rozwoju Polski (Sustainable Development Indicators for Poland)*, Central Statistical Office, Katowice 2011, p. 16.

²⁵⁵ *O innych ubezpieczeniach obowiązkowych w Polsce (On other compulsory insurances in Poland)* (in:) *Stan prawny ubezpieczeń obowiązkowych w Polsce (Legal status of mandatory insurance in Poland)*, collective work edited by E. Kowalewski, Polish Insurance Association, Warsaw 2013.

²⁵⁶ This role has been noticed a long time ago, e.g.: in the United States, the first legal act related to creation of crop insurance of farmers – Federal Crop Insurance Act – was adopted already in 1938. National Crop Insurance Services, <http://www.ag-risk.org/whatscropins.htm> (21.10.2015).

²⁵⁷ D. Michałak, *Ubezpieczenia od katastrof naturalnych jako istotny element zrównoważonego rozwoju (Insurance against natural disasters as an essential element of sustainable development)*, *Ekonomia i Środowisko (Economics and Environment)* 2015, no. 1 (52).

production (workplace for the farmer and his/her family), place of residence, etc. while crop insurance directly affects the farm's income. The Food and Agriculture Organisation emphasises the role of insurance in ensuring food security of a given country, as well as financial stability of agricultural holdings and other people earning their living from farm work²⁵⁸. Table 39 presents a sample impact of business insurance in agriculture on sustainable development.

Table 38

Sustainable development indicators, which may be (are) positively affected by business insurance of farmers

Specification	Indicator	Nature of the impact
Social order	Risk of poverty or social exclusion	Ensuring income of farmers and persons from other economy sectors cooperating with agriculture; Creating jobs in rural areas; creating conditions for recreation and leisure;
	Inequality in income distribution	As above
Social order (cont.)	Indebtedness of households	Ensuring own income (without the need to incur debts) of farmers, by guaranteeing income regardless of random events
	Unemployment rate	Providing farmers with direct means for living by ensuring their income – without any need to change jobs; potentially without the need to sack persons working in the agricultural holding as a result of loss of income
Economic order	Growth in gross domestic product per 1 inhabitant	A farmer, by using insurance, generates demand for financial services (GDP growth); Maintenance of agricultural production
	Resource efficiency (productivity)	Maintenance of agricultural production
Environmental order	Emission of pollutions	Ensuring stabilisation of functioning of a farm in the long run (namely production of oxygen, protection of water, protection of biodiversity)
Institutional and political order	Level of trust in public institutions	A farmer, who purchases insurance with the help of the state and in the event of a random event receives benefits, will have greater trust in public institutions.

Source: own study on the basis of *Wskaźniki zrównoważonego rozwoju Polski (Sustainable Development Indicators of Poland)*, Central Statistical Office, Katowice 2011; M. Kaczala, K. Łyskawa, *Koncepcja polis indeksowych (The concept of index-based policies)* op. cit.; Walczak D., *Środki z UE w gospodarstwach rolnych jako element strategii zrównoważonego rozwoju obszarów wiejskich w Polsce (EU funds in agricultural holdings as an element of sustainable development strategy of rural areas in Poland)*, *Academic Papers of the Wrocław University of Economics* 2013, no. 297, p. 328-331.

²⁵⁸ FAO, *The impact of disasters...* op. cit.

In the light of the potential effect of insurance in agriculture on sustainable development, presented in Table 39, as well as the report of the Food and Agriculture Organisation, which emphasises the relationship between unforeseeable events in agriculture and the losses of the whole agricultural sector and other people living in the countryside, it would be a good idea to also reflect on how to solve this issue²⁵⁹. Drought in agriculture, even if the farmer was insured, will result in, among others, decrease in sale of means for agricultural production (fertilisers, spraying, etc.). The decreased yield will also cause the seller of agricultural products, exporter or carrier not to obtain any revenue. Deterioration in the financial situation of these persons affects the functioning of the agricultural sector²⁶⁰, as well as income and expenses of the state budget and the general level of consumption. Therefore, it is also important to truly limit the size of damage and introduce broadly understood aid schemes (maybe insurance schemes): not only for farmers, but also for the whole agricultural sector of nationwide importance. However, the potential development of these solutions, which, on the one hand, will help these persons, and thus also the whole economy and, on the other hand, will not be too costly for the budget, is probably not easy.

²⁵⁹ FAO, *The impact of disasters...* op. cit.

²⁶⁰ Particular elements of the supply chain in agriculture directly affect one another. Krupa D., Walczak D., *Investing in the agribusiness value chain and changes in GDP*, Scientific Annals of the Association of Agricultural and Agribusiness Economists 2014, vol. XVI, no. 3, p. 165-167.

Summary

Lack of fiscal solutions based on income of individual agricultural holdings in Poland has a historical background, which is a derivative of the role of agriculture in the economy, the policy of the state addressed to this sector, as well as implementation of the basic functions of the state by means of taxes. Literature studies indicated that agricultural holdings underwent a number of changes with regard to taxation of their operations: from material changes, through property taxes (land taxes), then various income-revenue (estimation-based) schemes and income-property schemes. None of these schemes took account of the actual agricultural income and the actual revenue. One of the main reasons of accepting such solutions was the lack of accounting records in agricultural holdings, that would allow for calculating tax on the basis of real data. They were used mainly to change the area structure of farms and transform the structure of Polish agriculture. To a small degree, they could have been used for realisation of fiscal or redistribution goals. Such a state is still present today, since the agricultural tax in Poland has not yet (apart from minor changes) undergone a fundamental reform.

It is necessary to conduct a fundamental reform of agricultural tax, which would be systemically connected with a reform of social insurance. This is indicated, among others, by the structure of the tax and insurance system, which does not correspond to the contemporary requirements of the market economy. Some disadvantages of past solutions with regard to income tax of farmers include: outdated and non-flexible calculation formula of agricultural tax, which prevents pursuit of fiscal and non-fiscal objectives, hindering free movement of workers to other economy sectors, delayed expansion process of agricultural holdings, inadequate impact on levelling the economic and natural conditions of farming, as well as lack of correlation with the economic output of a farm. Such solutions are treated as a privilege, as they do not constitute an element of the tax standard. These arguments indicate the need to change the system and should be the basis of development of other fiscal solutions in agriculture, corresponding to the contemporary circumstances.

Taking into account the specific economic and organisational nature of family farms in Poland, the previous regulations do not obligate the managers to keep detailed records for the purposes of tax accounting. However, it may be expected that a need will arise to create a system for simplified financial record-keeping, with its certain source being solutions functioning for some actions of the Rural Development Programme (e.g. "Restructuring small farms" or "Modernisation of agricultural holdings", in which beneficiaries are obliged to keep, in the form of a table, the so-called records of revenues and expenditures on a farm). Therefore, the basis for gradual introduction of burdens on farmers' incomes (with a large-scale production and, first of all, significant share of commodity production) may include income tax from special branches of agricultural production. On the other hand, fixed income

taxation (on the basis of estimation standards, simplified record-keeping) may constitute a model solution, favourable to semi-subsistence farms, which do not take full advantage of vertical and horizontal integration with the market. Attention should be paid to the fact that the simplified forms of record-keeping rely mostly on cash accounting, which, in consequence, leads to generation of reporting of limited information capacity. Nonetheless, the essence of these solutions refers to the income of business entities, which would be an important direction of changes in the agricultural tax system. Such a solution would also allow for a reform of the social security system, where premiums would be correlated with the level of the farmers' income. Furthermore, collection of accounting data (even in a simplified form) constitutes the basis for financial analysis, which in turn fosters development of the business entity.

The presented legislation proposals are not binding and may serve only as an announcement of further works on the structure of the taxation system of agricultural activities. Presently, there are no complex solutions, which would allow for introducing agricultural income tax. The issues of the proposed legislative solutions include omission of a progressive form of income taxation, as well as the level of the lump sum rate – 4%. The research of IAFE-NRI of 2012 shows that, from the point of view of tax neutrality, a rate of 2-2.5% would be sufficient. On the other hand, we should consider replacing the present agricultural tax with a land tax (following the German solutions) and taxation of farm income on similar terms to taxation of business operations (i.a. progressive taxation). The conducted theoretical discussion indicates the need for introduction of changes in taxation of agriculture, as the present solutions (archaic agricultural tax, no obligation of recording economic events) limits the possibilities of reliably diagnosing the condition of agriculture (both in micro and macro scale). This is tantamount to lack of possibility to create other policy instruments addressed at this sector.

The previous assessment of the social security system carried out by numerous interested communities is clear and indicates that, in a longer perspective, it is impossible to maintain the social security system for farmers applying the previous principles. The sizes of agricultural activities and the farmers' income have been changing, new sources of inflow to agriculture emerged as a result of Poland's accession to the European Union. Even so, the social security system for farmers still remains unaffected and unadjusted to these changes. Therefore, they are necessary, understandable and accepted by the farmers themselves.

However, it should be clearly emphasised (as suggested by numerous authorities dealing with this issue) that the system requires flexible adjustment to the changing socio-economic situation of agriculture, but not a radical dissolution of KRUS (which could be indicated by the level of expenses on KRUS that approaches the critical threshold of socially determined expenses).

Therefore, preservation of the autonomy of the agricultural social insurance system requires fundamental changes, not only due to the need to reform public finance, but also due to a number of other cases of ill-adjustment. The changes should begin (just like changes in the tax system) with introduction of agricultural accounting and income tax in agriculture, as well as the obligation of farmers to keep records of all economic events for tax purposes. Currently, there is no mechanism determining the actual farmers' income, which prevents differentiation of social insurance premiums depending on income of the insured. Other economic conditions of functioning of the social security system for farmers should also be taken into consideration, such as, among others, low and narrow diversification of not only premiums, but also benefits, high level of fragmentation of agricultural farms, lack of actions aiming at a significant change in the agrarian structure in Poland, scope of financial support of the agricultural sector from the European funds, the increasing state budget deficit.

The areas of operation of the agricultural social security system necessary to be reformed include those, which, among others, will increase the level of correlation between the premium amount and the benefit amount, eliminate abuse and reduce the costs of the system's operation, thus limiting transfer of funds from the state budget to the system.

The risk management system in agriculture remains a separate problem, as it also requires adjusting to the present farming conditions. Institutional conditions of risk management, and, as a consequence, the basis for the system of business insurance in agriculture, should be adapted to the specific nature of farms, e.g. expressed by separate "needs" of different types of farming. Emphasis should be put on increasing the availability of weather-climatic information, as well as popularisation of the so-called agri-technical reinsurance. The popularity of insurances, first of all, crop and livestock insurances, increased as a result of the increase in the size of subsidies to premiums on the part of the state. Although it is not without impact on sustainability of public finance, subsidising premiums to the abovementioned types of insurance stabilises the economic and financial situation of farms.

Undoubtedly, perspectives for development of business insurance in agriculture involve the necessity for a holistic and systematic evaluation of particular elements on sustainable development of the state. Currently, emphasis should be put on increasing popularisation of insurance (mainly crop and livestock insurance, but also civil liability insurance of buildings) in connection with increasing "insurance awareness" of farmers. In the long run, it is worth considering proposals of index insurances, the unquestionable advantage of which is the substantial limitation of the phenomenon of adverse selection and reduction in operational costs. Still, quite a difficult issue will remain, namely objective determination of index values, as well as difficulties concerning start-up of a comprehensive infrastructure.

A socially and economically sensitive problem is the determination, how should the state and the insurance sector respond to phenomena similar to natural disasters. Such phenomena affect a substantial number of farmers (the example of which is the drastic drought of the summer of 2015). In this case, the issue may be solved by well thought-out stabilising actions (e.g. based on ad-hoc disaster aid schemes, such as "disaster aid"), taking account of the balance between the sectoral situation, "the institutional and legal order", but also hindering some undesirable attitudes of farmers (e.g. moral hazard). Beneficial effects should be associated with proposals regarding start-up of a network structure of mutual insurance companies (MIC).

However, implementation of these solutions creates the need for a comprehensive reform of the financial system in agriculture: correlating the tax system with the insurance system (social insurance, as well as business insurance).

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