

THEORETICAL BASES OF ADJUSTING INSURANCE SYSTEM IN AGRICULTURE

O.T. PROKOPCHUK, Candidate of Economic Sciences

Classification of risks is improved in accordance with the stage of their offensive in the process of production, and also grouping of risks inherent to the agricultural production is carried out, their influence on agriculture and the historical aspects of development of insurance are traced as to the type of activity.

The process of agricultural production represents combination and co-operation of human and nature, and it appears inwardly contradictory. Conformities to law of development of environment are studied not enough that is why it often comes forward as uncontrollable force, that able to violate the normal process of production and to result in unforeseeable consequences. Agricultural insurance developed in the whole world as a main instrument of management risks with the aim of reduction of negative influence of weather and natural risks. Therefore appears a necessity of applications of economic measures, that would allow to renew the injured objects and recover the losses inflicted to the enterprise. Under this conditions the necessary constituent element of market infrastructure is the system of minimization of agricultural risks, that is the complex of effective mechanisms and instruments of the state and private sector and one of the base parts of steady development of industry.

The situation prevailing today in Ukraine concerning agricultural insurance, at least slows progress and could be recognized by the crisis of the system sevelopment. Government officials of various government structures, heads of insurance companies and even specialists of agriculture and traditional insurance lack knowledge of various functional and operational aspects that are essential for development of agricultural insurance. The available insurance products in Ukraine are not fully respond to modern requirements, based on diversity of producers of agricultural products, crops or directions of animal husbandry and the need to respond to the feature needs of industry and new opportunities that are opened by innovative processes.

In such circumstances, a large number of theoretical and methodological issues of insurance of agricultural producers needs comprehensive study and reasoning, further detailed study that causes the relevance of the study.

Some theoretical and practical aspects of the problem highlighted in the works of domestic and foreign scolars. In particular, to the questions of the theory and practice of risk-management and insurance, devoted their works Ukrainian scientists: V. Bazylevych, V. Vitlinskyy, K. Vobluy, N. Vnukova, V. Hrushko, O. Hudz, M. Dem'yanenko, S. Navrotskyy, S. Nakonechnyy, S. Osadets, N. Prokopenko, P. Sabluk, L. Khudoliy, A. Chupis, D. Babella, A. Vil'yams, V. Grouz, D. Dikson, R. Yuldashev and others.

Although a large number of scientific papers on the study of property insurance

system of agricultural producers, a significant amount of theoretical and methodological issues require thorough research and detailed study, that causes the relevance of the study.

Methods of research. To address the issues of the article used general scientific methods of scientific knowledge and the study of economic phenomena. Theoretical and methodological basis of research is the work of domestic and foreign scholars and practitioners, and regulatory legal acts of Ukraine regulating relations in the sphere of insurance. In this article were used following methods: abstract-logical and economic-statistical, monographic, comparison and graphic.

The purpose of this article – on the basis of the study of theoretical principles of the scientific substantiation of risk theory and its application to agriculture to improve risk classification according to the stage of their occurrence in the manufacturing process (*Process risks*), as well as to group risks inherent in agricultural production, to identify their impact on agriculture and to trace the historical aspects of development of insurance as type of activity.

Research results. Making a profit is the primary purpose of every type of commercial human activity. Thus there is a direct correlation between the level of potential income received from the implementation of one operation and the actual riskiness of such operation. Therefore, the vast majority of types of economic activities related to the production, based on the formation of an optimum combination of whole range of instruments of financial results stabilization, one of the leading places in which takes insurance.

In turn, insurance is a natural reaction of producers on the possibility of arising various threats in the process of production and sales. In the economic literature to denote such threats, common to use the concept risk. As the risk is the root cause of insurance, let us analyze the interpretations and distinguish between them, that the most successful reflect the essence of the term and the meaning for further processes.

In modern scientific literature a significant amount of works of economists can be found, where attention is paid to the concept of risk, its impact on economic processes and management decisions is studied and analyzed. In the basis of risk was laid one of the most important characteristics - uncertainty.

In the process of social development and deepening of relationships within the society, the risk began to attract more attention, its presence significantly impacted not only on economic results, but also on other results of human activities. And as a consequence, the theory of risk was singled out in the independent branch, after which it was explored and developed actively. Because of the necessity of invention of instruments to avoid uncertainty or prevent the occurrence of unforeseen events or minimize their negative impact, were established a number of theories (game theory, probability theory, etc.) and theoretical approaches. So, now we can meet “risk” in dictionaries of almost all social sciences, and each of them has their own interpretation and reasoned conceptual-categorical apparatus. Common to all is the essence of the concept, which is defined as the possibility of arising danger or failure.

In economic terms, any failure is viewed through the prism of property loss. One of the first who drew attention to the existence of uncertainty in the economic activity and its impact on outcomes was F. Knight, who in his book “Risk, uncertainty and

profit” expressed the view that “ ... the uncertainty is a source of net income or loss...» [1, p. 53]. Later, almost all economists during the study of risk, concentrated their attention around the assessment impact of uncertainty on decision making and the outcomes of economic activity. In economics, reasoning the theory of risk falls on the development of classical economic theory.

In turn, insurance is a natural reaction of producers on the possibility of arising various threats in the process of production and sales. In the economic literature to denote such threats, common to use the concept risk. As the risk is the root cause of insurance, let us analyze the interpretations and distinguish between them, that the most successful reflect the essence of the term and the meaning for further processes.

The expediency of conducting activity under the conditions of market economy is defined only obtaining a positive financial result (profit). However, due to unprofitable farms for a number of years their own financial resources are significantly reduced, and state support measures that are designed to ensure the stability of economic activity, often are not sufficiently effective. In such circumstances, there is a need to find other ways to achieve financial stability, minimizing losses and damages. That is why, insurance coverage is regarded as one of the most important elements of financial and credit support of farmers.

In modern law, insurance risk is treated as an event, for which insurance is conducted and which has features of probability and chance occurrence [2].

Insurance risk is one that can be evaluated in terms of probability of occurrence of insurance event and quantitative dimensions of a possible loss [3, p. 46]. Based on the works of individual scientists, we dare to give the basic, in our opinion, criteria for determining risk, as insurance risk, and to describe their individual characteristics (Figure 1).

Often risk is considered as an event or circumstances concerning which, a person does not have sufficient understanding and knowledge and can't keep their accounting and computing. «Reasons suspense of accidental events causing variability, irregularity and unevenness of their occurrence» [4, p 35]. This is due to the fact that today the risk is interpreted wider: in terms of the theory – as the probability of occurrence of an event or set of events, in terms of production - as the possibility of death or damage of property from fire, flood, earthquake and other distress [4, p. 36].

Among the various human activities are those which are simultaneously affected by a large number of risks. One of them is agriculture. Therefore, it is extremely important within our study to identify and characterize the risks inherent in the manufacturing sector.

Agriculture is accompanied by a combination of various factors both natural and anthropogenic. This is specific field, which effectiveness depends on the availability of material, financial and human resources, and processes are occurred under the conditions of variable environment. The influence of certain risks on the industry depends on direct specialization of the enterprise (in crop growing – vegetable growing, fruit growing, potato growing, sugar beet growing, fodder production, grain farming, seed growing etc.; in stockbreeding - beef and dairy cattle breeding, swine breeding, poultry breeding, sheep breeding, etc.). In terms of the assessment of the

risk level, the highest level in agriculture can be characterized by the process of growing. Seasonality of production and significant dependence on climatic fluctuations, operational changes inherent of this type. It is clear that not all factors are inherent in long-term perspective predictions (eg climatic), but they often have the greatest impact on a product, and therefore actual results. Furthermore, we sum up only at the end of the season or calendar year, while agricultural enterprise bears the cost of production during the production cycle, so we should pay attention to the fact that the traditional tools of avoiding cash gaps (intensification, logistics, etc.) for this activity have no relevant impact. In addition, the specific risk characteristics of agriculture is that animals and crops belong to nature, which causes an objective need to distinguish risk factors specific to this sphere.

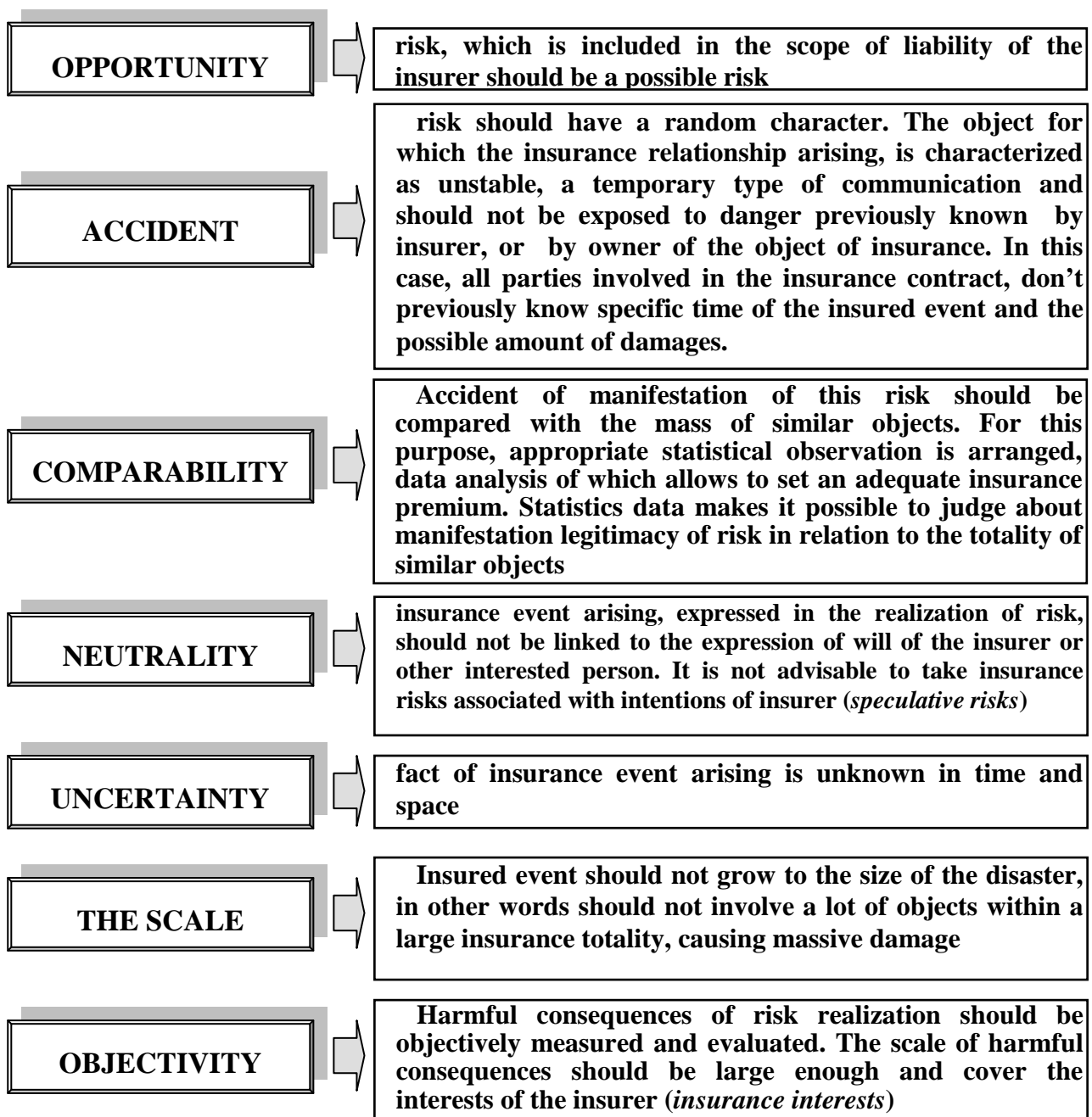


Figure 1. Insurance risk criteria and its characteristics

[Generalized from sources 3; 4].

Based on materials of R. Shynkarenko [5], risk factors are divided into five main groups and are characterized by indicators and possible consequences (table 1).

Based on the classification of risks and the sources of their origin shown in Table 1, advisable to divide the process of crop production on the cultivation and realization of production. Each of these stages could be characterized by the corresponding economic result: during growing – it is incurred expenses, which are presented under the guise of cost, during realization - received income; the final result of enterprise activity is making profit.

1. Risk factors and factors in agricultural production

Factors	Factors	Sources of occurrence	Consequences	Ability to insurance	Type of insurance
Natural	Natural and climatic	Climate changes and the impact of natural phenomena on the conduct and activity results in agriculture	From medium to catastrophic	Yes	Weather risk insurance
Anthropogenic and natural	Production	Accompany the process of growing agricultural products, agrotechnical requirements, use of scientific and technical progress, providing machinery.	Small, Insignificant, medium	No	–
Anthropogenic	Institutional and political	Changes in the legislative field relating, for example, the conclusion of international agreements (Ukraine's accession to the WTO), the use of administrative instruments of state regulation	Medium-large	No	–
	Financial and economic	Related to the level of financial support of the industry, the availability of state financial support, fluctuation of prices, features of pricing and taxation, the impact of foreign economic factors (fluctuation of rate)	Medium-large	Yes (partially)	Hedges, credit risk insurance
	Personal	Related to human activities (moral threat, asymmetry of information), including health and efficiency	Small, Insignificant, medium	Yes (partially)	Life insurance

Generalization of the author on the basis of [2, 5].

To classify risks that arise at each stage and could have a direct impact on the outcome, we grouped the risk factors and distinguished them in the «process risks» (Figure 2).

So there is appropriate separation of the following groups:

1. Process risks that arise on the stage of cultivation - a complex of natural-climatic, industrial, financial-economic and personal factors.

2. Process risks arising on the stage of realization - a complex of institutional and political, financial and economic, personal factors.

3. Process risks that arise on the stage of formation of final economic result (profit) depend on the results of the two previous stages, but are characterized by the probability of occurrence of institutional and political, financial and economic risk factors.

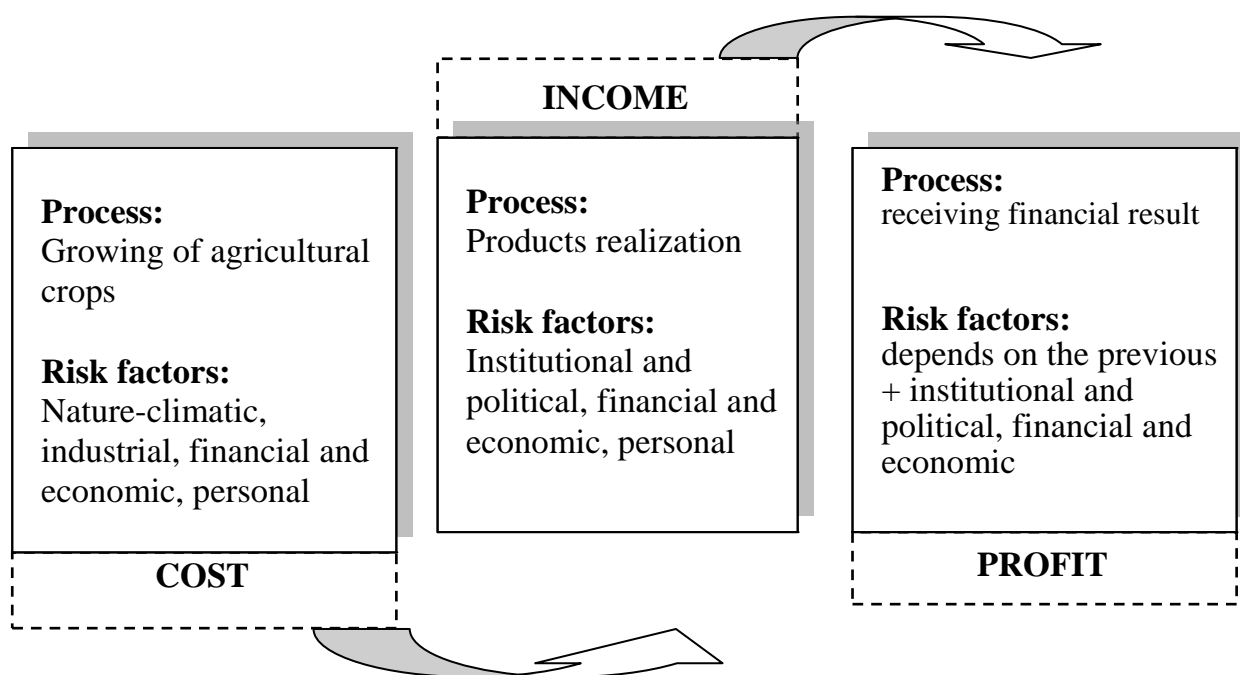


Figure 2. Process risks in agriculture

Note that the occurrence of certain risks often reduce the probability of occurrence of others. Often there are cases when the losses, due to the impact of nature-climatic risks, are compensated by the additional revenues from increase of prices due to market response to changes in supply volume (for example reducing expected yields). Furthermore, since all steps are conducted with the participation of human, it should be noted that human activity causes three main threats which are present during the implementation of insurance relations in agriculture, namely information asymmetry, moral hazard and anti-selection.

Leading scientists such as R. Bokusheva and A. Haydelbakh [6] adhere the view that anti-selection and moral hazard are part of the concept of asymmetry of information.

In our opinion, these concepts should be separated. Thus, the risk of asymmetry of information lies in the fact that the farmer always knows more about his farm than the representative of the insurance company, so during the insurance extensive list of documents is required, on the basis of which the decision to provide insurance services is accepted.

Moral hazard can appear in the behavior changes of farmers regarding the insured object, intentional (non-intentional) violation of agro-technologies, implementation (not implementation) of precautions, non-compliance of fire prevention, etc.

There are several models of attitude to risk. The main behavioral strategies to minimize the effects of risk are measures to reduce risks and its transmission (Figure 3).

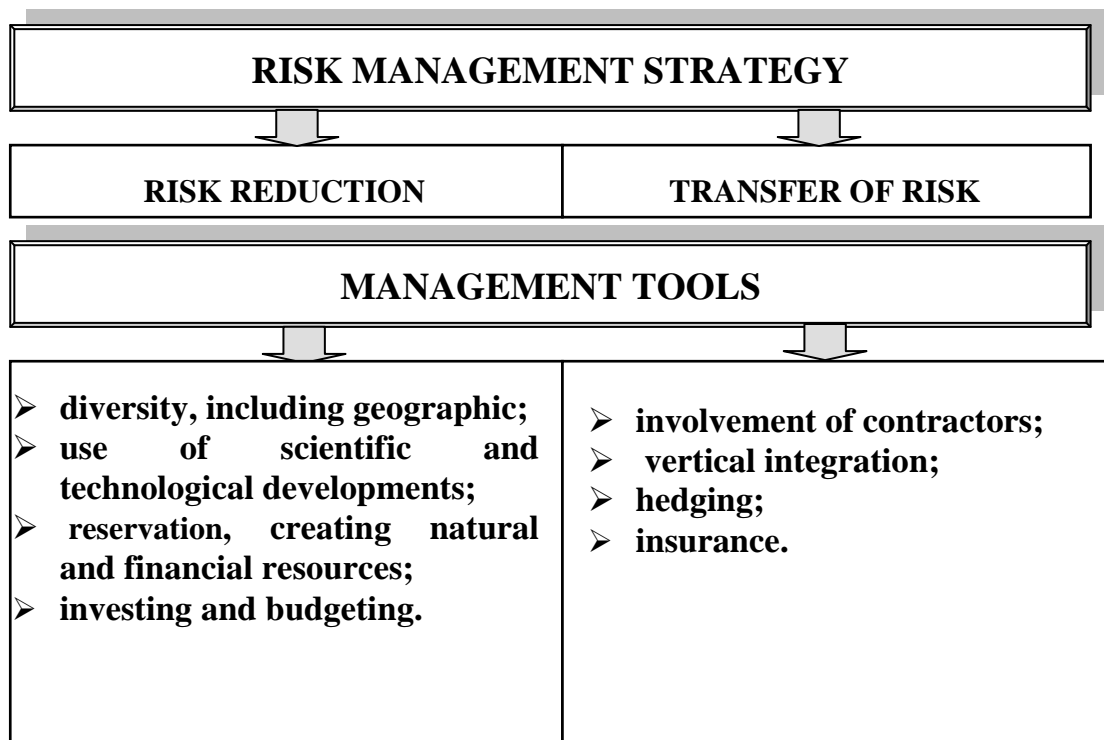


Figure 3. Risk Management Tools by the directions of agriculture
 [Generalization of the author based on source 5].

Strategy of risk avoidance that can occur in choose of the least risky (respectively less profitable) types of activity. However, it should be noted that the strategy of risk avoidance is not always justified, because through appropriate measures the effects of risk could be minimized, but to avoid the fact of its occurrence - is impossible.

Usually, the degree of readiness to take risks is crucial during choosing a risk management strategy. To minimizing the risks resort mainly large-scale agricultural enterprises, small and medium-sized farms are more willing for risk.

Among the various ways to minimize the negative consequences of occurrence of certain risks, insurance acquired the largest distribution. By its essence, insurance is a way to transfer risk (ie, uncertainty, incertitude, fear) to the third party. The origins of the history of insurance, as the sphere of realization of economic relations lay in Old Babylonian State (Hammurabi legislation), which stipulated agreement between the participants of trade caravan for redistribution of losses suffered by other members of the caravan due to an attack of robbers, robbery, theft, etc. between all participants. This period of insurance continued until 550 BC, when in Lidia appeared first gold coins [7, p. 48]. Also, in the ancient world began to emerge Accident Insurance - workers who were employed in the construction of the Egyptian pyramids, castle Solomon (970 - 931 BC), etc., organized mutual assistance cash desks in favor of those their colleagues or their families who suffered injuries or died in an accident at the construction [8, p. 71].

A characteristic feature of ancient insurance is the fact that at this stage there were not regular insurance payments made to the general cash desk. Moreover, the organization of the insurance fund based on commitment to indemnify damages in order of further distribution, in other words, money were brought in cash desk after the insured event. Henceforth insurance was improved, the basis became regular payments that helped to accumulate (collect) money and create an insurance fund [7, 8].

It is believed that most clearly in comparison with other nations of antiquity, mutual insurance was developed in ancient Rome. It is widely used in various professional unions and collegiums. After joining such board, was paid one-time fees, and then monthly fees. By collected funds were conducted funeral in case of death of member of the collegium, was provided material support in case of illness, injury, etc. Mutual insurance in Ancient Rome gained considerable distribution among craft and other professional colleges, military and even religious organizations [9].

Since that time began to form the state's role as a guarantor during the conclusion of separate trade agreements. Significant dispersion of forces of the Empire demanded additional government actions for life support of their colonies (some of which were removed from administrative centers and major trade routes), and therefore it was necessary to encourage vendors in supplying food and arms. Not surprisingly that the government compensated losses of merchants in case of the ships death with goods.

The modern theory of insurance also owes the Roman Catholic Church in distinguishing and in formation of such concepts as «reasonable rate» (ie, understanding that the received fee should be adequate to the volume and scale of provided service or borrowed funds, etc.). Biblical premise that «... you can't borrow money to your close relative...» was reflected in a quite mundane decisions of the Church, which recognize the importance of such way of loans for economic development. Through such actions we are able to positively evaluate the role of religion in the development of trade and, consequently, the formation of an effective system of protection against risk - the insurance contract.

The development of insurance encompassed other spheres of business activity. Along with trade and related sectors (transporting, storage, etc.) insurance began to develop also in agriculture. But in this case, the most important role played not the desire to ensure financial results but the desire to redistribute the possible negative consequences of unforeseen events. Thus, in the early thirteenth century in Iceland arised first insurance companies among villagers who united for mutual protection against losses due to fire or death of livestock. Over time, insurance in agriculture began to take classical features - were established insurance contracts, were improved relations between insurers and underwriters, and the transition of agriculture in quality of business activities, insurance began to be considered as a financial instrument for stabilizing incomes of subjects of economic activity [10].

On the territory of modern Ukraine insurance came almost simultaneously from different countries. On the one hand - the promotion of insurance in the Russian Empire, and the other - enough active development of financial institutions in Western Ukraine, which belonged to the Austro-Hungarian Empire [3-6, 10]. At the same time lets pay tribute to such modern concept as integration. The integration of

Russian trade houses in the European financial system contributed to the formation of the respective approaches in trade, in particular, using the latest, at that time, financial instruments included insurance. Concerning the role of Austro-Hungarian financial system in the development of insurance in Ukraine, at that period it was the first attempt on the territory of our country to use insurance in agriculture. At first insurance concentrated on the risks, associated with damage or loss of property from fires - the biggest problem of contemporary society, but eventually it spreaded also on other risks.

Traditionally insurance at different stages of development was characterized by both principle of voluntariness and obligatoriness. Herewith history of insurance knows cases of simultaneous use of both principles due to the object of insurance [8]. Obligatoriness can be explained by existence of mutual responsibility, or a desire to spread risks in society. In such cases, insurance often become the only way to satisfy the interests of all stakeholders [8, p. 15-17].

Each of above stages of development of insurance was marked on the evolution of insurance in agriculture. Gradually it acquired certainty. Were developed insurance regulations, insurance rates were calculated with acceptable limits of their fluctuations, were identified rights and obligations of the insurer and the insured [8, p. 40-42].

An important step by researches of V. Alenychev [11], B. Shakhov [12] and G. Tahiyev [13] was the reformation of economic relations in agriculture of the middle of the last century, when the state and economy faced the problem of the transfer of all relations between the state, producers and citizens in financial dimension (wages, availability of investment resources, including credit, government support and funding, etc.). Under these conditions, in different economic systems were implemented various steps, but insurance become a common feature for both the market and the planned economy. Inherent to the capitalist countries were voluntariness of insurance and government support of business entities. At the same time, the planned economy used the principle of compulsory insurance, in which all who was indirectly connected with agriculture, had to insure their risks [3-6]. However, the insurance of agricultural production by planned economy provided agricultural production and was close to the principles of modern insurance.

After separation of Ukraine from the Soviet Union, national policy was aimed at the development of a market economy including agriculture. Under these conditions, effective system of insurance played not the last place in agriculture as an element of financial stability and investment attractiveness of the industry.

In our opinion, the insurance market can be defined as an economic space, which is formed, satisfied and implemented supply and demand for insurance protection by means of nundination of insurance service. However, we consider it appropriate to use the term «insurance system» because it covers not only the process of buying and selling insurance service but also combines the relationship of all participants for the successful realization of the goals of each of them on financial services market.

We believe that the current system of insurance of agricultural crops can be described as a two-level (Figure 4).

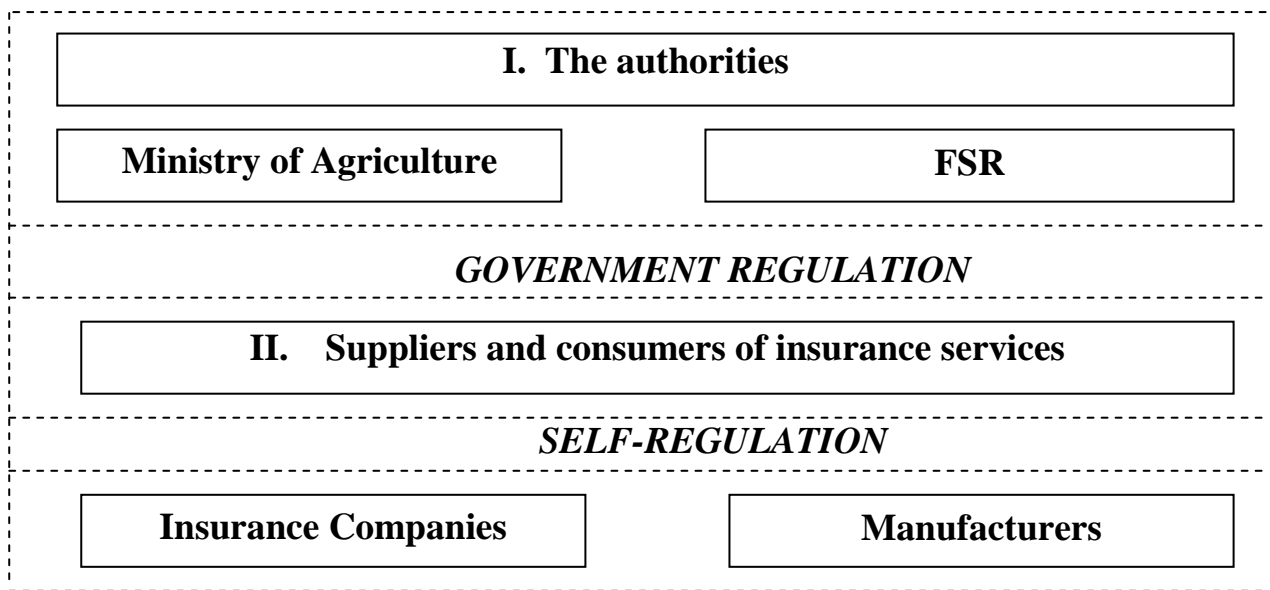


Figure 4. Agricultural crops insurance system in Ukraine

The first level is the authorities that carry out regulatory and supervisory activities. In the system of crop insurance it's the State Commission for Regulation of Financial Services Markets, which provides general supervision of insurance companies and the Ministry of Agrarian Policy and Food of Ukraine, which, in fact, represents the interests of agricultural producers. The second level consists of providers and consumers of insurance services in agriculture, such as agricultural producers and insurance companies.

System of crop insurance as part of the economic mechanism is also influenced by the state. In other words, government regulation of the insurance system is a set of forms established by the state, types, methods of external and internal influence, procedures of organization of agricultural crop insurance, intended to achieve strategic and tactical objectives of stabilizing agricultural production and to improve the efficiency of financial results of economic activity.

The main objectives of the regulation of insurance of agricultural producers is to provide an enabling environment for the development of relations in the field of insurance of risks in agriculture, removal of existing barriers through institution development, creation and improvement of its mechanisms. The ultimate goal is to implement civilized and guaranteed for all participants optimal insurance system, taking into account historical conditions of economic and social development of Ukraine. To achieve this goal should be used general control methods and tools of regulation, features and characteristics in terms of insurance.

General principles of functioning of insurance market in agriculture outlined in the «State Programme of the Ukrainian village development in the period till 2015» [14]. The above mentioned document also provides for the development and adoption of the Program of state support in the agricultural insurance sector.

As we can see, the regulation of insurance is rather complicated process, it requires an integrated approach and clearly formulated goals (and respectively

events) to meet all participants of the insurance process. The above mentioned information allows us to consider the regulatory system as a set of interventions of all participants influence on objects and processes with the purpose of a particular directional development to achieve these goals. Here, of course, a lot of things depend on the state, as it is one of its direct functions, and occurs through its institutions.

Conclusions. Thus our study of the theoretical foundations of the scientific basis of risk theory and their application to agriculture, aspects of the formation and functioning of insurance system, considering specific needs of individual branches of economy and the basic principles of regulation of the development of insurance system of agricultural crops in Ukraine allowed to formulate a number of the following general conclusions:

- with the help of studying the evolution of insurance and the existing insurance in agriculture around the world, was suggested their classification according to the stage of their occurrence in the manufacturing process (process risks) and also were grouped risks inherent in agricultural production;
- were formed own approaches to the regulation of the insurance system as a set of interventions of all participants on objects and processes with the purpose of directional development to achieve these goals;
- the current system of insurance of agricultural crops can be described as a two-level. The first level is the authorities that carry out regulatory and supervisory activities. The second level consists of providers and consumers of insurance services in agriculture, such as agricultural producers and insurance companies.

REFERENCES

1. Найт Ф. Х. Ризик, невизначеність та прибуток / Ф. Х. Найт – М.: Дело, 2003. – 225 с.
2. Про страхування : Закон України від 07.03.1996 р. № 85/96 – ВР // Відомості Верховної Ради України (ВВР). – 1996. – № 18. – С. 79.
3. Базилевич В. Д. Страхова справа : монографія / В. Д. Базилевич, К.С. Базилевич // – 6-те вид. – К.: Знання, 2008. – 351 с.
4. Воблый К. П. Основы экономии страхования / К. П. Воблый // . – М: СО Анкил, 1993. – 228 с.
5. Факторы риска в аграрном страховании [Электронный ресурс] : – Режим доступа: <http://www.agroinsurance.com/ru/documents>.
6. Bokusheva, R., Heidelberg, O., Kussayinov, T. (2007): Strahovanie posevov v Kazahstane: Analiz vozmozhnostey effektivnogo upravleniya riskami. // IAMO Studies Reihe, Halle (Saale), Germany. Book of abstracts [«Multi-level processes of integration and disintegration»]. – 2009. – P. 22.
7. Райхерв К. Общественно-исторические типы страхования / К. Райхерв // – М. : АН СССР, 1947. – 348 с.
8. Реверчук С. К. Історія страхування : Підручник / С. К. Реверчук, Т. В. Сива, С. І. Кубів, О. Д. Вовчак [за ред. С.К. Реверчука]. – К.: Знання, 2005. – 213 с.
9. Казанцев С. К. Основы страхования : учебное пособие /С. К. Казанцев // –

Екатеринбург: изд-во ИПК УГТУ, 1998. – 553 с.

10. Карпентер Г. Обзор мирового рынка страхования и пере-страхования сельскохозяйственных рисков // Г. Карпентер [Электронный ресурс]: – Режим доступа: <http://www.agroinsurance.com/ru/practice>.
11. Аленичев В. В. Страхование дело России в XX веке / В. В. Аленичев // Страхование ревью. – 2010. – № 1. – С. 18 – 29.
12. Шахов В. В. Страхование дело России в XX веке / В. В. Шахов, В. В. Аленичев // Страхование ревью. – 2010. – № 5. – С. 14 – 17.
13. Тагиев Г. М. Развитие государственного страхования в СССР / Г. М. Тагиев – М.: Финансы, 1978. – 224 с.
14. Про затвердження Державної цільової програми розвитку українського села на період до 2015 року : Постанова Кабінету Міністрів України від 19.09.2007 р. № 1158 // Офіційний вісник України. – 2007. – № 73. – С. 2715. [Електронний ресурс]: – Режим доступу до документу: <http://zakon1.rada.gov.ua>.

Одержано 15.03.13

Прокопчук А.Т.

Теоретические основы регулирования системы страхования в сельском хозяйстве

В статье прослежена эволюция понятий «риск» и «страхование», исторические условия зарождения страхования как экономической категории и выявлено разнообразие рисков факторов ведения хозяйственной деятельности. Распределение производства сельскохозяйственной продукции на этапы дало возможность сгруппировать рисков факторы в зависимости от их влияния на финансовый результат каждого производственного процесса (процессные риски). Установлено, что возникновение некоторых рисков может существенно уменьшить вероятность возникновения других.

Ключевые слова: *риск, страховщик, страхователь, актуарные расчеты, страховой тариф, страховой продукт, страхование имущества, риски при страховании имущества сельскохозяйственных товаропроизводителей.*

Prokopchuk O.T.

Theoretical bases of adjusting of system insurance in agriculture

The evolution of concepts «risk» and «insurance» are traced in the article, historical terms of origin of insurance as an economic category and the variety of risk factors of conduct of economic activity is educed. Distribution of production of agricultural goods on the stages gave an opportunity to group risk factors depending on their influence on the financial result of every productive process (process risks). It is set that the origin of some risks can substantially decrease probability of origin of others.

Key words: *the risk, the insurer, the insurer, actuarial calculations, insurance rate, insurance product, property insurance, property insurance risks in agricultural commodity.*