INDEX INSURANCE AS A MEANS OF FINANCIAL PROTECTION OF AGRICULTURE IN CLIMATE CHANGE

Yadgarov Akram Akbarovich*

*Associate Professor
Tashkent State University of Economics,
Tashkent, UZBEKISTAN
Email id: ayadgarov79@mail.ru

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ABSTRACT

This article examines the impact of climate change on agricultural activity worldwide and the scientific and practical importance of index insurance in insuring against various unforeseen natural risks in order to support it financially. The situation with agricultural insurance was analyzed and proposals and recommendations on financial protection through the introduction of new alternative index insurance were developed.

KEYWORDS: *Index Insurance, Climate Change, Insurance Events, Insurance Premiums, Insurance Premiums, Two- And Three-Phase Index Insurance.*

INTRODUCTION

Global climate change is a concern for the world community today. Most importantly, the impact of climate change, along with direct man-made phenomena, poses food security and various other social problems to the population.

On the implementation of the "Year of Youth Support and Public Health" of the President of the Republic of UzbekistanstatesoftwareDecree PF-6155 of 03.02.2021 was adopted. According to this decree, in agricultureissues of increasing crop yields and efficiency are highlighted. At the same time, the program of practical measures includes the use of the most advanced technologies, resource-saving and biological methods in agriculture, the provision of high-generation seeds of agricultural crops, the widespread introduction of scientific advances and innovations in agricultural production; Introduce water-saving technologies on 160,000 hectares of cotton fields and take measures to increase yields by 8-10% in cotton and grain, and by 15-20% in fruits and vegetables; cultivation of ecologically clean, high-quality export-oriented fruits and vegetables through the cultivation of organic agricultural products; introduction of mechanisms to financially support the cultivation of rice and vegetables in addition to cotton and grain; Introduce a mechanism for the state to cover 50% of the cost of purchasing high-yielding seedlings and obtaining international certificates (Global GAP, Organic) and 50% of the cost of leasing agricultural machinery; Cooperatives will be established to purchase, grow and export crops.

Based on the requirements of the State Program for the long-term development of the country, it is necessary to prioritize the activities of agricultural enterprises and the introduction of new varieties in agriculture, the cultivation of organic agricultural products and the production of quality export-oriented fruits and vegetables.

In the context of climate change, it is important to protect the activities of agricultural enterprises from natural and man-made disasters. One of the priorities today is the financial support and development of agricultural enterprises on the basis of insurance protection.

Designed to protect against the effects of climate changeThe index type of insurance is mainly developed in the USA, Canada, Spain, Mexico, India, China and other countries and is used in the process of global climate change. In this regard, the CIS countries are also working effectively to prepare for climate change and the widespread introduction of index insurance to cover financial losses.

The article discusses in detail what needs to be done in Uzbekistan in this regard, as well as the goals and objectives of the introduction of index insurance. The attention to the development of agriculture in our country is growing from year to year. It is important to increase the export of agricultural products on the basis of agricultural development. However, the impact of climate change is precisely natural disasters and unforeseen natural disasters that directly affect the sustainable development of agriculture. Improving the mechanism of insurance protection on the basis of index insurance is of particular importance in the timely compensation of losses incurred on the basis of protection against risks affecting agricultural development.

Analysis of the relevant literature

Studies on the risk of hydrological drought related to climate change in the regions**Gómez-Limón JA**considered by. The direct researcher has examined issues related to the negative consequences of water supply disruptions, mainly on irrigated agricultural lands, which are also of great concern, especially in water supply enterprises. Accordingly, a new index type of insurance has been proposed to cover the risk of water supply interruptions due to drought in irrigated agricultural lands. The recommended index type of insurance is a promising tool to help effectively manage the risk associated with hydrological drought.[2]

ResearchersEze E.and others have studied the prevention of risks to the local population as a result of reducing the impact of climate change on crop yields through the introduction of index insurance. The study sought to assess the use of crop water requirements in assessing crop yields.[3]

Iissues related to climate changeBoyd M.and in the studies of othersmainly the impact of climate change directly on crop yields has been studied and index insurance as a new alternative type of insurance has been studied. Index insurance is currently undergoing a pilot phase over traditional crop insurance. Therefore, it was noted that index insurance should be widely introduced, as climate change poses a significant risk to agricultural enterprises. The study relied on Canada's daily weather data and data on crop yields at the regional level.[4]

Issues of protection of agricultural enterprises in the regions, in particular, farmers' crops from various risksYu.A.Spletuxovstudied the goals and objectives of the introduction of insurance, mainly on the basis of the regional productivity index. The researcher stated that if the average yield of directly insured agricultural crops is lower than the insured yield limit, the indemnity will be compensated on the basis of insurance. Depending on this level, the amount of subsidies provided by the state for insurance premiums will also change, leading to an increase in insurance coverage depending on the amount of insurance premiums.[5]

Foreign scientists such as Sherrick BJ, Barry PJ, Clare Cannona, Kevin Fox Gothamb, Katie Lauve-Moonc, Bradford Powers, Sisse Liv Jorgensena, Mette Termansenb, Unai Pascual [6; 7; 8] in their research reduce the impact of climate change on agriculture, climate change put

forward theoretical and practical views on combating change and the widespread introduction of insurance in the protection of agriculture from various risks.

Research methodology

The study examines the issues of agricultural insurance from a theoretical and practical point of view, the introduction of climate change-adjusted insurance and its financial compatibility with environmental factors.

On the introduction of index-compliant insurance for climate changetheoretical and practical observations, proposals and recommendations on the introduction of index insurance in the insurance of agricultural enterprises using methods such as a systematic approach, generalization of statistical data, analysis and synthesis.

Analysis and results

Agricultural products grown by agricultural enterprises, in particular, farmers and other types of agricultural enterprises, not only supply the domestic consumer market, but also export to foreign markets.

It is no secret that our country is one of the countries with huge export potential.

Given the importance of agricultural exporters as one of the largest sectors of the economy in the supply of agricultural products to world markets, the issue of expanding the scope of direct insurance coverage of agro-industrial complex and its service enterprises is a long-term strategic focus of our government. is one of the issues.

AgricultureThe total volume of agricultural, forestry and fishery products (services) produced by enterprises in 2020 will amount to 260.3 trillion soums, including agriculture and livestock, hunting and services in these areas - 251.8 trillion soums, forestry economy - 6.7 trillion soums, fisheries - 1.8 trillion soums [17].

Uzbekistan is located in a climate-hazardous agricultural area, which is directly affected by drought or water scarcity, deterioration of land reclamation and high salinity, as well as other natural disasters. Agriculture is inextricably linked to the impact of natural disasters, and its impact on sustainable development is high. It is precisely today that the insurance system emerges as an effective solution to these problems in the priority development of agriculture.

AgricultureOne of the urgent tasks of enterprises is to provide the population with food products on the basis of timely planting of agricultural crops, timely implementation of agro-technical measures, development of agricultural production, processing and supply. In any case, it is advisable to provide reliable insurance services as one of the key factors in the sustainable development of agriculture.

The escalation of various environmental crises related to climate change is also having a significant impact on the activities of agricultural enterprises. The attention to the development of agriculture in our country is growing from year to year. In this regard, the issues of increasing the level of competitiveness of agricultural enterprises and the priority development of export potential are of great importance. Sustainable development of agriculture and timely coverage of the industry from any natural disasters and unforeseen natural disasters, as well as insurance protection are of particular strategic importance.

The financial losses of agricultural enterprises depend on all aspects of the climate. Therefore, the financial sustainability of agricultural enterprises is also directly related to climate. One of

the important factors is to mitigate the impact of adverse weather conditions on the activities of agricultural enterprises as a result of climate change, to provide funding to cover the financial damage caused by man-made or unexpected natural disasters.

70-80 percent of agricultural enterprises lose large amounts of financial income as a result of unexpected natural disasters due to climate change. Climate change will also directly affect the activities of agriculture, food industry, construction, trade, gas and electricity, tourism and transport.

Decrease in productivity of agricultural products grown by agricultural enterprises, various natural phenomena occurring in the process of growing agricultural crops (cotton, grain, rice and fruit and vegetable and melon crops), livestock products (meat, milk, wool and other products) (protection against climate change, rising temperatures, drought, hail, strong winds, severe and dry cold, sharp decline in precipitation, various fires, various pests and insect infestations, biological diseases, etc.).

In the context of climate change, at a time when the impact of weather factors on the activities of agricultural producers is growing from year to year, index insurance is becoming an optimal solution for agriculture, index insurance ensures the stability and profitability of agriculture.

Index insurance is designed specifically for agricultural enterprises, and is carried out in the event that the impact of natural disasters specified in the insurance contract exceeds the agreed threshold value.

In order to protect against the effects of various risk indicators related to agriculture, the index type of insurance today is a specific approach to different climate change in the regions, resulting in the yield of agricultural crops in a given period of rainfall, air temperature, wind speed, humidity or sun during the growing season. provides insurance protection against crop failure as a result of reduced light.

The index insurance type serves to cover the damage incurred in the event that the risk of unforeseen events in the event of an accident exceeds the threshold value in respect of pre-determined payments.

In the event that the risks associated with climate change exceed the parameters of a traditional insurance contract, index insurance payments, in turn, will provide customers with a quick and undisputed settlement of damages.

If the index type of insurance exceeds the amount of damage covered in accordance with the contract with the agricultural enterprise, the payment is covered by index insurance. In this case, the index insurance is aimed at covering the damage caused by the amount of precipitation or temperature limit for a certain period.

An index insurance contract is valid regardless of the condition of the object for which the insurance contract is concluded. In other words, the payment of insurance coverage under the index contract is made only without taking into account the actual losses assuming the status of the index.

If the agricultural enterprise's field crops are traditionally insured against freezing, then the insurance staff will go to the field and calculate the proportions of dead or surviving plants to confirm that the insured event has occurred and the amount of loss. If the agricultural enterprise insures the crop from freezing, under an index-type contract, the insurance indemnity paid to cover the damage is directly related to the air temperature at the time of payment. If the

temperature falls below the temperature specified in the traditional insurance contract, in this case the index will be the basis for payment of insurance premiums.

The following main types of indices are used in agricultural insurance: based on yield index and weathertwo- and three-phase index insurance.

The productivity of agricultural enterprises, as a rule, takes into account the average productivity of each region for a long time (10 - 30 years). Yield is calculated at the level of the administrative regional unit (district), which requires the purchase of long-term statistics on yield. Financial seen by the agricultural enterprisefor the purpose of indemnification the insurance indemnity is paid according to the insurance contract.

Weather indicators as a result of climate change include established temperatures, precipitation, wind strength, and other meteorological parameters that affect productivity. If the rainfall level exceeds the set parameters, there is a risk of “drought” and “swamping”. If the precipitation exceeds the specified amount, the index is applied in excess of the temperature limit under the insurance contract. In fact, with high temperatures and no precipitation, crop loss or no precipitation becomes much more important.

In the context of global climate change, at a time when the impact of weather factors on the activities of agricultural producers is increasing year by year, index insurance is becoming an optimal solution for agriculture, index insurance ensures the stability and profitability of agriculture.

*How does index insurance provide financial support to agriculture?*Index insurance is designed specifically for agricultural enterprises, and is carried out in the event that the impact of natural disasters specified in the insurance contract exceeds the agreed threshold value.

The index type of insurance used in the world is a specific approach to different climate change in the regions today in order to protect against the effects of various risk indicators related to agriculture. level or provide insurance protection against crop failure as a result of a decrease in sunlight during the growing season.

The index insurance type serves to cover the damage incurred in the event that the risk of unforeseen events in the event of an accident exceeds the threshold value in respect of pre-determined payments.

In the event that the risks associated with climate change exceed the parameters of a traditional insurance contract, index insurance, in turn, will ensure that claims for damages to customers are settled quickly and without controversy.

In 2021, the company JSC "Uzagrosugurta" will produce 260.9billion UZS, the share of the insurance market was 6.9%.One of the important indicators of agro-insurance activity is the compensation of losses of agricultural enterprises operating in the agro-industrial complex, in particular, farmers and other agricultural enterprises as a result of natural disasters and other natural disasters. In 2013, the total coverage by insurance companies operating in the insurance market amounted to 66.9billion UZS, of which 10.7% or 7.2 bln. UZS falls to the share of Uzagrosugurta JSC insurance company.

CONCLUSIONS AND RECOMMENDATIONS

Republic of Uzbekistanagricultural enterprisesimproving the regulatory framework for business insurance;agricultureWhen introducing an index type of insurance, it is advisable to pay attention to the following:

- study of various natural phenomena and natural disasters in agriculture based on the characteristics of the regions and the formation of the agricultural insurance index insurance on the basis of a regional approach;
- agricultural enterprises in particular, peasant farms i.e.increase the focus on insurance of farm activities, in this regard, the development of index insurance definitions;
- introduction of index insurance policies in index insurance on the basis of Uzhydromet data;
- In the context of climate change, it is advisable to widely apply indes insurance in the insurance of crops (grain and rice products) aimed at meeting the needs of the population.

REFERENCES:

1. Resolution of the President of the Republic of Uzbekistan No. PP-4412 "On measures to reform the insurance market and ensure its rapid development." 2019 y.
2. Gómez-Limón, JAHydrological drought insurance for irrigated agriculture in southern Spain.Agricultural Water Management. Volume 240, October-2020.https://www.sciencedirect.com/science/article/pii/S0378377420304492
3. Eze, E.,Girma, A.,Zenebe, A.,Kourouma, JM,Zenebe, G.Nachalo formyExploring the possibilities of remote yield estimation using crop water requirements for area yield indexinsurance in a data-scarce dryland. Journal of Arid Environments. Volume 183, December 2020.
https://www.sciencedirect.com/science/article/pii/S0140196320301609?via%3Dihub
4. Boyd, M.,Porth, B.,Porth, L.,Seng Tan, K.,Wang, S.,Zhu, W.The Design of Weather Index Insurance. Using Principal Component Regression and Partial Least Squares Regression: The Case of Forage Crops.North American Actuarial Journal.Volume 24, Issue 3, 2-July 2020, Pages 355-369.
https://www.scopus.com/record/display.uri?eid=2-s2.0-85079726988&origin=results
5. Yu.A.Spletuxov. Selskoxozyaystvennoestraxovanie in Rossii and for the roof: sravnitelnaya characteristics. Finansovyyzhurnal №1 2018.
https://www.nifi.ru/images/FILES/Journal/Archive/2018/1/statii2018/fm2018107.pdf
6. AA.Yadgarov. (2020). AgroInsurance-As A Mitigating Financial Lever For Climate Change In Agriculture. International Journal of Advanced Science and Technology, 29 (7), 2251 - 2258.http://sersc.org/journals/index.php/IJAST/article/view/17501
7. A.Yadgarov, A. Rakhimov. Reforms on the development of the livestock sector and insurance protection in Uzbekistan. Published online: 19 March 2021. E3S Web of Conferences 244, 12012 (2021)https://doi.org/10.1051/e3sconf/202124412012
8. A.Yadgarov, I.Khotamov, H.Uktamov, M.Mahmudov, R.Najmiadinov, G.Yuldashev. Prospects for the Development of Agricultural Insurance System. Web of science. Alinteri Journal of Agriculture Science (2021) 36 (1): 602-608 / e-ISSN: 2587-2249.https: //info@alinteridergisi.com

9. A.Yadgarov.The importance of using the agricultural insurance system in increasing the volume of agricultural production in pandemic conditions. SAARJ Journal on Banking & Insurance Research (SJBIR) ISSN: 2319-1422 Vol.9, July 2020, Impact Factor: SJIF 2020 = 7.126. 31-37 page.https://saarj.com/wp-content/uploads/sjbir-july-2020-full-journal

10. A.Yadgarov.Issues of food safety on the basis of agricultural insurance. The American Journal of Agriculture and Biomedical Engineering ISSN: 2689-1018. JULY 2020. Page No .:43-52 Volume-II Issue-VII PUBLISHED: 30 JULY 2020. https://usajournalshub.com/index.php/tajabe/article/view/576/539

11. http: //www.mf.uzMinistry of Finance of the Republic of Uzbekistan.

12. http: //www.stat.uzBased on data from the State Statistics Committee of the Republic of Uzbekistan.

13. http: // www.agros.uzAnnual reporting data of Uzagrosugurta JSC.