EFFECT OF INSURANCE ON AGRICULTURAL PRODUCTS:

THE CASE OF RICE FARMERS WORKING IN THE FERGANE PLAIN

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Abstract

Agricultural insurance is one of the most important management strategies to tackle agricultural risks, climate change and other unavoidable natural hazards. Therefore, the aim of this study is to examine the effective components of production risk management in agricultural insurance acceptance among rice farmers in the Fergane plain. The statistical population of the study included all 915 rice farmers, the sample size was calculated by the multi-stage sampling method and then (SFR) was determined as 278 people. The risk aversion coefficient was determined by the logistic regression of the effective components of risk management in insurance acceptance using the Yamane model of the First Trust Rule (Yamane) formula. According to the findings, most rice farmers (10/65%) avoid risk. In addition, insured rice farmers with insurance have a significantly lower degree of risk aversion than non-insured farmers. The results of the binary logistic regression are among the component types, risk management components (Wald = 0/382), economic risk management and marketing (Wald = 0/492), agricultural and technical infrastructure risk management (Wald = 0/617), risk sharing management. (Wald = 0/447) had a positive and significant effect on adoption of agricultural insurance. Also, variable effects of age, education level and number of agricultural risks were important in distinguishing the two groups of participants.

Keywords: Agricultural Products Insurance, Risk Aversion Degree, Fergane Plain, Rice Farmers, Risk Management

Introduction

What is clear is that the nature of agriculture is fraught with dangers. In this activity, all kinds of natural, social, economic and general risks go hand in hand and provide a fragile and vulnerable set for farmers; This results in reduced revenue, reduced productivity, and the quantity and quality of their production. Therefore, in the face of environmental conditions and various natural and unnatural risks, farmers have to decide on the allocation of resources for their agricultural production; However, they do not feel sufficient stability and confidence in the environmental conditions, the status of prices of inputs and products, and their agricultural performance. In the end, this issue affects farmers 'agricultural decisions, and under these conditions, agriculture and natural resources, the consequences of farmers' agricultural decisions differ from the results of decisions made under reliable conditions. In addition, in the presence of agricultural and risk-free risks (confidence conditions), the input consumption is different from each other and this depends on other factors such as the quantity, the price of output and inputs and the level of production, as well as the product price difference, the degree of risk aversion and the final share of inputs in the production variance. Also, under risky conditions, farmer decisions can affect productivity, agricultural income, use of various inputs, expert advice, the marketing process and supply of agricultural products and fluctuations in production prices; It may also hamper the adoption of new agricultural technologies and sciences. In this context, one of the most important support mechanisms for reducing instability and dealing with the unpredictable nature of these risks is the use of agricultural insurance, which secures production and investment, thereby balancing farmers' incomes, including the effects of crop insurance. Agricultural crop insurance can be considered as one of the appropriate support tools to protect the financial resources of producers and investors in this sector in compulsory and natural disasters.

In fact, agricultural insurance is a measure for farmers' broad participation in sustainable agriculture, creating a safe environment for attracting capital in the agricultural sector, creating and mobilizing rural resources, increasing the effectiveness of risk management in the agricultural sector, optimum allocation and efficiency of capital in the agricultural sector, as well as poverty and It is the fight against the vulnerability of smallholder and smallholder. It is one of the ways to increase the productivity of the factors of production and increase the efficiency of the crop system by making the right decisions to know about the environment and risk factors and indeed control risk factors and resources; Therefore, the main strategy in dealing with agricultural risks is the extensive use of management components in agricultural risks. In other words, risk management involves identifying, estimating, evaluating, monitoring and controlling risk and involves a range of precautionary measures, specific reactions, and non-organizational processes. Generally, production risk arises from processes that affect the natural growth of the product and cause changes in the quantity and quality of the product. Of course, the sources of agricultural production risk were vast and climatic conditions (drought, floods, temperature changes, hail, storms, frosts, hurricanes, earthquakes, etc.), pests and diseases, weeds, soil conditions, history cultivation, production method and financial and technical risks.

Agricultural insurance is one of the effective risk management programs that can increase the degree of risk taking by farmers in investment flows for the use of new technology, thus increasing the efficiency of inputs and at the same time creating safety in the production of agricultural products.

He explored the effects of agricultural insurance on farmers' risk reduction and income inequality. The results of estimating the degree of risk aversion of the members of the study sample showed that insurance affects farmers' attitude to risk and lowers their risk aversion. In addition, the calculation and comparison of the Gini coefficients shows the positive effect of agricultural insurance on reducing inequality of agricultural operators. The forecast of the demand function showed that the level of wheat cultivation, the compensation rate relative to the insurance premium rate, the degree of risk aversion, education, experience, age and farm ownership had a positive effect on agricultural insurance demand and acceptance. Finally, examining the factors affecting the risk-taking tendency of farmers in the study sample showed that full-time work of households, irrigation method used, agricultural insurance, loans and land ownership have a positive effect on risk trends. In this context, in another study examining the effects of crop insurance on production efficiency and risk management among potato farmers, it was concluded that being insured does not have a positive effect on the technical efficiency of potato farmers. In terms of agricultural production, it has been effective in reducing the risk aversion levels of agricultural workers as much as possible. In addition, personal and managerial characteristics of the insurer such as the degree of risk aversion, education, experience, age of operation and land tax also affected the acceptance of the insurance.

The results of another study showed that the average technical efficiency in the group of insured wheat farmers was not significantly higher than that of the insured group, but that insurance did not have a significant positive effect on the technical efficiency of potato farmers. The results of production functions and input demand functions (ratio of inputs) showed that potato fields were facing harmful selection phenomenon, but this phenomenon was not observed in the case of wheat farmers. The estimation of the wheat demand function shows the positive effect of risk aversion, wheat cultivation area, type of agriculture and agricultural product diversity on insurance demand. In addition, the estimation of the thirty-acre demand function has shown that the degree of risk aversion, area cultivated, product variety, business age and education have a positive effect on insurance demand.

In addition, the effect of agricultural insurance on the risk orientation and production efficiency of tomato farmers was also investigated. The results of this study showed that insurance had a positive effect on the technical efficiency of tomato growers, but not statistically significant. Among the individual and professional variable types and risk management components, only education level, agricultural experience, level of cultivation, rice avoidance rate and the ratio of compensation received to insurance premiums have a positive effect, and virtual variables of the type of agriculture, land ownership and insurance premiums. Impressed. Among the individual and occupational variable types and risk management components, only education level, agricultural experience, cultivation level, rice avoidance rate and the ratio of compensation received to insurance premiums had a positive effect, and virtual variables of agricultural type, land ownership and insurance premiums negatively affected the acceptance and claim of insurance. . It was generally accepted that while being insured was effective in promoting farmers' risk-taking attitude, it did not lead to an improvement in technical efficiency. In this context, in the study of the factors that differentiate the adoption of agricultural insurance based on the economic, social, lifestyle and livelihoods of wheat farmers in the region, it was concluded that the two groups were between acceptors and those who did not. Those who accepted agricultural products insurance had a significant difference in terms of economic control, income, savings, banking opportunities, access to information and public service resources, education, knowledge and information, social trust and marital status. When examining the effective components of using risk management tools in connection with the adoption of agricultural insurance, Wallandia et al. Concluded that farm size, non-farm income level, education level, age, and agricultural production risk level are important and the important components are known. Wallandia et al. Concluded in the study of effective components for the use of risk management tools in connection with the adoption of agricultural insurance. The size of the farm, non-agricultural income level, education level, age and the level of agricultural production risk are known as the most important components. In this context, Olarindeh et al. Investigated the factors affecting the risk aversion coefficient among the Savannah (Nigeria) rice farmers in their research with the help of econometric methods. In this study, based on the attitude to risk, rice farmers were divided into three groups: low risk aversion, moderate risk aversion, and very risk aversion. In this study, 348 rice farmers were selected using the multi-stage sampling method. The first (SFR) assurance rule model was used to calculate the return coefficient. The results showed that most farmers (48/56%) were risk averse. However, 42/53% of farmers were without risk and 8/91% of them were taking risk. Factors affecting the risk aversion of rice farmers include age, number of households, agricultural income, off-farm income, farmer financial security, agricultural extension and education, and marketing risk management. Solowski and Klozko Gojowska also conducted research on risk acceptance, risk aversion and production risk strategies among Polish farmers. According to the findings, the most important factor increasing the risk in farmers' crops was drought. Polish farmers were also largely unwilling. Another part of the findings included the amount of debt, the rate of crop production losses in previous years, soil quality and prioritization of financial independence (inappropriate risk-sharing management) among the factors that led to increased levels of agricultural risk aversion. Also, the most important risk management strategy among farmers was to insure agricultural products, which ultimately had a very effective impact on risk management indicators. Other findings have shown that factors such as improving farmers 'perceptions of risk factors, reducing the level of risk aversion, and using appropriate risk management strategies tailored to farmers' conditions and needs are effective strategies for agricultural risk management.

Rice is one of the strategic products that meet the rice needs of the country in the Fergane plain. This region has always been considered as one of the important agricultural centers of the country due to the existence of three important features (fertile soil, existing and existing water resources, heat and moisture suitable for agriculture); However, risk exposure to farmers has emerged as a major problem in the region due to the increasing incidents such as new climate change and drought and depletion of water resources, frost and the spread of pests and weeds. Under these circumstances, adoption of agricultural insurance is very effective and will have a significant impact on the production performance and income level and production risk of rice farmers. Obviously, the philosophy of agricultural insurance is to share agricultural risks. Risk sharing means that agricultural insurers share each other's risks by paying insurance premiums and provide the groundwork for increasing the adoption of innovations and strategies to reduce risk aversion and strengthen production among them. Most previous research on the impact of production risk management components on farm insurance adoption seems to have addressed at most one or two risk management components. However, the aim in this study is to make a comprehensive, coded and complete analysis of the impact of all different production risk management components (6 components) on the adoption of agricultural insurance. In this context, this study aims to investigate which of the various components of production risk management, which components may have a significant impact on the adoption of agricultural insurance among rice farmers.

Materials and methods

Research Area

The territory of the region referred to as the Fergana basin and located between the Tanrı Mountains and Alay Mountains is divided between Uzbekistan, Tajikistan and Kyrgyzstan; The name of the city in the part of the Republic of Uzbekistan is Fergana. The Fergana Valley covers an area of 23,000 km2 and roughly 300 km. long, 70 km. is wide; It is surrounded by the Çotkal range of Tanrı Mountains from the north, Fergana Mountains from the northeast, Alay and Turkistan mountain ranges from the south. 7 km in the west. An important part of the valley, which is a large depression area connected to the Hunger steppes with a wide passage, is agricultural land and the middle part is desert. The fertile lands irrigated by the rivers descending from the mountains around were added to the new agricultural lands acquired by the irrigation systems of the Soviet era. The region has a continental climate with hot summers and cold winters; Little rain falls, especially to the west. Siriderya is the main rivers, most of which are used for irrigation. Cotton, rice, fruit and raw silk production has developed in the Fergana valley, which is the most important agricultural center of Central Asia. The region is one of the most densely populated regions of Central Asia; There are important cities such as Fergana, Endican, Hokand, Hîve, Mergīnân, Nemengân, Hikon, Kuvasay, Rişton, Hamza and Yipan.

This study is a descriptive-correlational study designed and conducted in 2017 in terms of applied purpose, amount and degree of control of field variables, and data collection. Data collection on variables examined in the statistical population of the study was carried out using a questionnaire and structured interviews with rice farmers. The statistical population of the study includes all farmers in the Fergane plain with a total of 915 people. In this study, farmers with at least 2 years of agricultural crop insurance history are taken into account. With the help of sampling method, belief formula, 278 people from 9 villages (115 people accept insurance and 163 do not accept insurance) were statistically selected and analyzed according to the population ratio of multi-stage, repetitive farmers. Equation 1 is used as yaman formula.

(Relation 1) n = N / (1 + Ne2)

Sample size = n

Statistical population number = N

5% accuracy rate (0/05) = e

Research Tools

The research tool was a questionnaire consisting of 69 items in three parts (individual and professional characteristics, factors determining the degree of risk aversion, risk management components). Individual and professional characteristics of rice farmers (including age, agricultural background in 18 items), factors determining the degree of risk aversion (including expected income, amount of outstanding debt in 19 items), component risk management (including 32 items risk management, care, etc.). planting) components of risk management (including risk management in 32 items such as planting, operation, etc.) and other supplementary questions (7 items) were included. Risk management components (5 items), risk management (5 items), harvest risk management (4 items), economic and marketing risk management (5 items), management (agricultural and technical infrastructure risk), including risk management components placement (7 items) and risk sharing management (6 items). The risk management component measurement items were developed in a specific order and in equal weights on a five-part Likert scale (ranging from 1 to 5 very low to very high). A structured interview method was used to fill out each questionnaire to ensure that rice farmers' uncertainties were addressed, as it contained new questions.To determine the validity of the questionnaire, the first 30 questionnaires were distributed among the rice farmers within the statistical population but not the sample to be studied.

The validity of the questionnaire indexes using Cronbach-alpha and theta, respectively, was higher than 0.7, which indicates the suitability of the research tool. The apparent validity of the questionnaire was confirmed on the basis of the consensus opinion of the members of the agricultural faculty in the Fergane Plain and some agricultural jihadists. Binary logistic regression method (step-by-step method) was used with the help of SPSS and Excel software to perform the main analysis of the study.

Method of Calculating Rice Farmers' Risk Avoidance Coefficient

The first assurance model (SFR) was used to measure the risk trends in rice farmers' decision making and to determine the degree of risk aversion in rice production (the dependent variable of the analysis). The basic premise of this rule is to minimize the likelihood that the purpose of exploitation will fall below a certain level in income (5, 16). According to this rule, when users feel calm and confident in meeting their livelihood needs, they choose technology and use its reliability in the production of a product. The first trust rule model has been used in many studies to calculate farmers' degree of risk aversion. According to Equation 2, 18, 15, 14, 5, 4, 5, 6, 14, 15, 18, 21 and 23 are as follows:

(Equation 2) $R\ i = [E * i - E\ i] / [\delta\ i], i = 1, 2…, n$

In this Equation:

Ri: The degree of risk aversion of rice farmers

E * i: Critical level of livelihood income for rice

Ei: expected income of a rice farmer

Δi: Recurring annual standard income deviation of farmers (from agricultural and non-agricultural fields in the last three years)

n: Number of rice farmers surveyed

To calculate the standard deviation of a rice farmer's annual income, (i) is obtained based on the approximate sum of household income from agricultural and non-agricultural areas over the average of the last three years. The reason to choose an average of three years is to avoid standard deviation and reduce the likelihood of error.

In the next step, the two remaining variables of critical income level (Ej) and expected income (E * j) and equation 3 are calculated to calculate the level (E * j) .17,15 14:

(Equation 3) E * = C min + COG + LAS + NAI

In this equation:

C min: The value of the minimum consumption requirement of a household farmer is the rice calculated in Equation 3.

COG: The amount of outstanding debts of rice farmers to official and unofficial institutions,

LAS: Cash and current asset income from agricultural activities of a rice farmer (income from product sales, hay sales, accounts receivable, cash in bank accruals related to agricultural activities, etc.)

NAI: Income from cash assets that a rice farmer derives from his non-agricultural activities.

The minimum consumption requirement value of a farmer's household (C min) is calculated as Equation 4 (14, 21, 23).

(Equation 4) C min = APF (FAM - (CHILR / 2))

In this equation:

APF: Minimum calorie value required for each person per year (23433000)

FAM: The size of a rice farmer household.

CHILR: The number of children in the family.

Equation 5 also applies to the calculation of expected income (Ei). (14, 15 and 18):

(Equation 5) E = VP (1 + DMG) - TC

VP: The value of the total rice crop produced, including all crops harvested from the Estate and from the leased land.

TC: Total costs of rice production in each growing season (costs of irrigation, fertilizer, pesticides, machinery, labor, etc.),

DMG: Percentage of damage to the rice crop due to waste and abnormal events, calculated as average weight according to Equation 6. (5, 14, 21 and 23):

(Equation 6) DMG = Σ (Ki. DMGi) / (Σ Ki)

Ki: Rice crop prices in the im period.

DMGi: The percentage of damage done to the rice farmer in the current period (as a percentage of total yield).

The more negative the obtained Ri value is, the higher the risk of risk aversion for the rice farmer. Because in this case, rice can try to minimize a certain bad luck in order to accept a risk (E) or maximize the amount of income it expects (5, 18). To define the different levels of risk aversion among rice farmers, the standard deviation from the mean (ISMD) method was used, accordingly, respondents were divided into four risk groups; Neutral risk; Risk aversion is divided into low and high risk aversion. In this study, the dependent variable includes the degree of risk aversion of rice farmers (8, 14, 26, 25, 25, and 29), and the independent variables depend on the background of various studies (individual and occupational characteristics (1, 22, 25, 8, 26, 1, 29). and 27), economic variables (1, 13, 14, 24, 25, 22, and 26), Risk management (1, 23, 24), plant risk management (1, 23 and 24), risk method (1, 23 and 24), harvest risk management (1, 23 v 24), economic and marketing risk management (24, 25, 14 and 1), agricultural and technical infrastructure risk management (27, 22, 14 and 1), risk sharing management (24, 25, 14 and 1) were determined for analysis.

Results and discussion

Personal and Professional Characteristics of Participants

According to the first data set, the average of the variables was age (176.46 years), education level (5,500 years), agricultural background (903.21 years), number of households (4,540 people), rice field size per hectare), rice crop yield per hectare (17/043 tons), average annual agricultural income (2627/2627 million), average non-agricultural income (1410.023 million), average annual cost (1548.054 million), the number of agricultural machinery ownership (3.541) and the number of agricultural risks (921.4.4. risk) has been obtained.

In addition, age variables (49 years), education level (12 years), agricultural history (45 years), number of households (5 people), size of rice fields (29.5 hectares), rice yield (31 tons / hectare), Average annual agricultural income (17.5268 million), Average non-agricultural income (3750 million), average annual agricultural expenditure (4000 million), number of ownership of agricultural machinery (4 units) and number of agricultural risks (10 risks) were determined.

Prioritize Components of Production Risk Management Among Respondents

According to the second data set, participants' first priorities for planting risk management components (taking into account the appropriate planting time of rice); risk management owner (due to proper irrigation schedule); harvest risk management (taking into account appropriate rice harvest time); risk management economics and marketing (selling products through intermediaries); agricultural and technical infrastructure risk management (participation in extension programs for the implementation of rice cultivation and pressurized irrigation methods) and risk sharing management (crop insurance). However, the last priorities of the respondents for components of planting risk management (use of disinfected and threshed seeds); there was risk management (weeding); harvest risk management (arrangement of harvesting equipment); economic risk management and marketing (access to unofficial sources of credit); risk management, agricultural and technical infrastructure (fallow use) and risk sharing management (desire to grow by participating in agricultural machinery).

Determination of Risk Avoidance and Comparison of Two Groups of Participants

According to the third data set, using the ISDM method, rice farmers with varying degrees of risk aversion found four risk groups (15.1% of respondents), neutral risk (19.8% of respondents); It is divided into low risk aversion (4.37% of respondents) and very risk aversion (27.7% of respondents).

According to the results of the 4, there was a significant 1% difference between the farmers' refusal to accept insurance and their acceptance, depending on the degree of risk aversion. In other words, unemployed rice farmers were significantly higher in risk aversion than insured rice farmers.

Estimating the Logistic Regression Model to Determine the Effective Components

In order to determine the components that affect the adoption of agricultural insurance, a step-by-step method, double logistic regression was used. The dependent variable was divided into two groups: those who do not accept agricultural products insurance (code: 0) and the buyer (code: 1). According to the regression model, 17 independent variables are age, education level, agricultural background, number of family members, rice field size, rice yield, agricultural income, non-agricultural income, agricultural cost, number of agricultural machinery, agricultural number risks, Planning risk management, risk management, Board of Directors entered into risk management, economic and marketing risk management, agricultural and technical infrastructure risk management and risk sharing management model. 5. The data set results show the evaluation of the overall strength of the logistic regression model in 87 group classifications of working rice farmers. The overall forecast percentage for this model was 87.4%. This means that 87.4% of the observations are correctly separated and the model can accurately estimate the desired percentage of the dependent variable's values according to the variables entering the equation.

8 steps were obtained in the logistic regression analysis. 6. According to the data set, the chi-square value (logarithm statistic of closing lesson 1) increased from 312/202 in the first step to 112,492 in the eighth step. And this decrease showed an improvement in the chi-square quantity and well-being of the model. In addition, the values of the Cox and Snell statistics and Nigel Crack statistics, representing the coefficient of determination and the adjusted modification coefficient, show to see the changes that the independent study variables can predict the total of the dependent variable from 0.603% to 0.682%.

The constant value, coefficients of the logistic regression equation of the Wald Test (Constant), the odds ratio or (Odd ratio) ratio of B and the (Wald Test) significance level are given in Table 7. After fitting the model showing the fit of the general model of the analysis, the significance of the effect of the variables was determined by master statistics (distinguishing the two groups of rice farmers) to identify important variables. According to the results of Table 7, out of the 17 independent variables in the eighth step, only 8 variables explain and predict the probability of acceptance and rejection of agricultural insurance significantly. Education rate variables, (B = 0.425), average annual agricultural income, (B = 0.068), number of agricultural risks, (B = 0.361) and risk management (B = 0.447) at 5% level Planting risk management variables (B = 0.382) Economic and marketing risk management (B = 0/492) agricultural and technical infrastructure risk management (B = 0/617) had a significant positive impact at 1% level. However, for the age variable (142) and a significant level of 5% was obtained.

Finally, according to the results of the 7th data set, the optimal logistic regression equation (logarithmic superiority) is as follows:

Logarithmic superiority = 17 / 471- 0/142 (X1) + 0/254 (X2) + 0/068 (X3) + 0/361 (X4) + 0/382 (X5) + 0/492 (X6) + 0 / 617 (X7) + 0/447 (X8)

Therefore, according to the results obtained, the logit analysis model is the age, education, average annual agricultural income, number of agricultural risks and planting risk management components of the two groups of participants, economic risk management and marketing, agricultural and technical infrastructure and risk sharing management.

Results and Recommendations

Increased risk aversion and inappropriate long-term risk management among rice farmers can have a negative impact on the economic, social and cultural conditions of farmers and on key management decisions for the production and adoption of new production technologies, and can reduce areas of production reduction. The findings lay the groundwork more than ever for the adoption of innovations and technologies, as well as identifying the components of production risk management that provide the basis for increasing production and income, reducing poverty and migration conditions among rice farmers. Research findings, according to the results of the research numbered 20, 27 and 28; Most rice farmers (1.65%) avoid risk, and farmers who do not accept agricultural insurance have a higher risk aversion factor. However, farmers who accept agricultural insurance have a lower risk aversion rate, and in this context, having agricultural insurance encourages farmers to adopt new farming methods and technologies and face production risk risks. Also, due to the absence of many drought events in the region in recent years, rice farmers have faced many financial, production and psychological shocks while having sufficient experience and knowledge to manage drought risk. Thus, the effects of this phenomenon seem to have caused most rice farmers to be more cautious and conservative in the face of agricultural risks, and to be more risk averse. Another important point is that the majority of rice farmers in the region are small hepa (average rice land area: 5/0054 hectares). Smallholder farmers are much more vulnerable to agricultural risks than other farmers. Therefore, this has led to an increase in risk-averse rice farmers in the region compared to other rice farmers. Under these circumstances, a consistent and versatile support program is recommended (training-extension courses on drought risk management, strengthening state and non-government support loans, and strengthening facilities for duplicate and damaged farmers, support for the use of the following programs:

drought conditions and agricultural More suitable seeds with insurance of crops) will be compiled. Since most older and less educated rice farmers do not have agricultural insurance (according to the results of 19), the crop risk management variable was also one of the variables that influenced the adoption of agricultural insurance among rice farmers (contrary to the findings) The training and extension methods in the region were not required to improve the risk management component of rice cultivation. It is suggested that it should be oriented towards providing training. Also, the desired training is less theoretical and auditory and tends to be more visual and practical methods (result display method, method demonstration method, setting up demonstration farms and visiting sample farms, etc.) to be more effective.

In another part of the findings, technical and agricultural infrastructure management and components of economic and marketing risk management (along with research 14) were among the variables affecting the adoption of agricultural insurance among rice farmers. Also, according to the primary results of this component, technical and credit support programs are proposed to support the insurance fund of rice farmers in the region and to strengthen extension programs to ensure insurance benefits, marketing skills, and positive exposure to agricultural activities with the agricultural economy area should be considered further. According to the research findings, it is recommended considering the significant impact of the risk sharing management component (together with research 5) on the adoption of agricultural insurance and the prioritization results of this component. Efforts should be made for policies and programs to encourage greater cooperation and participation of rice farmers in the form of rice farmers associations and cooperatives. In the field of research, considering that participatory agricultural activities that develop spontaneously have a weak position, it is observed that the agricultural organizations in the region can take the leading role in the form of dissemination and incentive programs; However, once the development and prosperity of participatory activities has been achieved, the leadership of the activities should be left to the rice farmer. In this context, it is also recommended to encourage more rice farmers to join cooperatives and to encourage the adoption of agricultural insurance. In general, logistic regression analysis results, individual and occupational variables (age, education level and number of agricultural risks) and risk management components (management Wald = 0.38) Economic and marketing risk management (Wald = 0/492) Agricultural and technical infrastructure risk management (Wald = 0.617) and risk sharing management ((Wald = 0.447)). In other words, the results of the sequential logit model mean that insured rice farmers are younger, more educated, more educated than farmers. He predicts that he has income and greater agricultural risk. In addition, insured rice farmers must have better planting risk management, better economic and marketing risk management, better agricultural and technical infrastructure risk management, and better risk-sharing management.

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