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EFFECTS OF MAIZE POLICY REFORM IN NORTHEAST CHINA

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National macro-policy is an important factor affecting the adjustment of farmers' livelihood strategies. It is necessary to analyze the impacts of agricultural change on farmers' income and livelihood strategy adjustment when new policy is issued. The Northeast Chinais a strategic region that guarantees China's national grain security and is also an important pilot area for implementing national agricultural policies. As a breakthrough point in the present agricultural supply-side structural reform implemented by Chinese government, the reform of maize purchasing and storage system in Northeast China has played a significant role in adjusting the maize price and also exerted a significant influence on the income and family livelihood strategies of some farmers. Given the shifts in maize policy, the purpose of this research is to model farmers' income change and their livelihood strategy adjustment in Northeast China. In consistence with the macro statistical data, the survey results of 125 questionnaires indicate that the reform of maize purchasing and storage system implemented in 2016 led to the drop of maize price in Northeast China by more than 30% in 2017, and the net income of maize growers in most areas of Northeast China declined by more than 60% compared with the previous year. Faced by the sudden drop in the maize price, 24.2% of maize growers in the surveyed farmers planned to adjust their livelihood strategies in a short term. The changes in livelihood strategies are mainly affected by the indicators of "comparison between income and expenditure" and "satisfaction with income from farming". Finally, this paper puts forward some suggestions from the aspects of supporting subsidies, guidance for adjustment of family livelihood strategies and training of farmers' vocational skills.

Key words: Farmers' income, Livelihood strategies, Northeast China, Reform of maize purchasing and storage system.
JEL Codes: Q11, Q18.

1. Introduction

Keeping stable grain price is an important policy goal of every country, especially China with a large population. The grain purchase price has a strong transmission and amplification effect, and it will cause a series of chain reactions in the welfare of farmers, consumption of residents, and costs of enterprises. Due to the impact of global financial crisis, the sharp fluctuation in grain price in 2008 has attracted many scholars to study the causes of price fluctuation of agricultural products.

Through extensive studies, the sharp increase in grain demand and climate change in developing countries is considered to be an important cause, but there are still big controversies and disputes. Some scholars believe that the growth of demands for agricultural products in developing countries is relatively gentle, and it cannot explain why grain price will increase rapidly in the short term (Li, 2017; Wang, 2014; Guo, 2015). Existing studies about the effects of grain price fluctuations are mainly concentrated on two aspects: (i) the effects of grain price fluctuations on the grain production, farmers' income and consumer price index (CPI), and (ii) effects of grain price fluctuations on welfare of urban and rural residents, or specifically the effects on different subjects (Gu, 2017; Fan, 2016; Li, 2016; Zhang, 2018; Wu, 2016).

With the rural demographic change and rising wages, there are divergent changes in input mixes and output choices across agricultural products in China during the last decade (Li, 2017). In order to encourage maize planting in the main producing areas, guarantee national grain security, and increase farmers' income, China implemented the temporary maize purchasing and storage policy in Northeast China (including Heilongjiang Province, Jilin Province, Liaoning Province and Inner Mongolia Autonomous Region) in 2007, *i.e.* the minimum purchase price policy. Since 2011, the prices of international agricultural products including maize slumped, while the price of China's maize purchasing and storage has increased year by year, leading to constant accumulation of domestic maize stock and serious oversupply (Braun, 2007; Banse, 2008). According to the data of State Administration of Grain of China, the price of temporary maize purchasing and storage soared from 1.38 yuan/kg in 2007 to 2.22 yuan/kg in 2014. By 2015, the price difference between domestic and foreign maize was around 600 yuan/t, and domestic maize not only lost its competitiveness in the international market, but also lost its domestic market competitiveness. As a result, there appeared problems of continuous increase of maize yield, high stock, and high increase of imports. In response to the new situation, in the general context of implementing supply-side structural reforms, the Chinese government adjusted the previous temporary maize purchasing and storage policy to the new mechanism of "market-based purchasing" plus "subsidies" on the principle of market-based prices with separate subsidies in 2016. The purpose of this important reform is to realize the market-based price of maize, market regulation of supply and demand relationship, sales of maize according to market conditions, and purchasing of maize by various market entities independently. The reform of maize purchasing and storage system has brought about many changes. (i) Maize price fluctuates according to market conditions. When the temporary maize purchasing and storage policy was implemented, the state issued the quality and price policy; now, the maize price is based on the market, and the maize growers should sell maize according to market conditions. (ii) The state implements subsidy policy for maize planting. In the past, the state protected the interests of maize producers through temporary purchasing and storage, but now the central government provides direct subsidies for maize growers. (iii) Purchasing subjects are changed. In the past, the

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maize purchasing was implemented mainly by China Grain Reserves Corporation for temporary purchasing and storage on behalf of the state, but now the maize is purchased by diversified market subjects, no longer purchased and stored by the state (He, 2012; Bai, 2012). In the short-term, it directly leads to substantial drop of direct income of maize growers from planting maize, dampens the enthusiasm of farmers for planting maize to a certain extent, and promotes some farmers to shrink the crop planting area and adjust the planting structure (Zhang, 2016; Wang, 2012), some farmers give up farming and do migrant work in cities. The existing literature lacks a systematic analysis of the effects of the temporary maize purchasing and storage system reform on farmers' income and their livelihood strategies adjustment, especially using questionnaires from the micro perspective of farmer.

In the context of the reform of maize purchasing and storage system, we undertook an extensive field survey in Jilin Province, Liaoning Province, Heilongjiang Province and Inner Mongolia Autonomous Region, and visited more than 200 maize growers in Changtu County, Fuxin County, Dehui City, Changling County, Taonan City, Zhenlai County, Jarud Banner, Horqin Left Middle Banner, Kedong County, Tailai County, Nenjiang County, Beian City, Hailun City, and Tieli County in 2016. Based on the 125 valid questionnaires and interview data obtained from this survey, we will analyze the changes in the maize purchase price caused by the reform of China's maize purchasing and storage system and the impact on farmers' income and the possible changes in farmers' livelihood strategy selection, and analyze the main influencing factors and differences of farmers' choice of different livelihood strategies in the context of policy changes. Through the analysis of first-hand survey data, we intend to expound the impacts of changes in agricultural macroeconomic policies on farmers' income and their family livelihood strategies, and provide scientific references for government formulating and adjusting agricultural policies.

2. Effects of the reform of maize purchasing and storage system on the maize purchase price

According to the weekly monitoring data of China National Grain and Oils Information Center for the maize purchase price in Northeast China during October 24, 2016 and March 19, 2017, we sorted out and calculated the average purchase price of maize in 40 cities (leagues) in Northeast China, and assessed the direct effects of the maize purchasing and storage system on the purchase price of maize in Northeast China.

After the reform of the maize purchasing and storage system, the maize purchase price in Northeast China has declined and there are significant regional differences. The regional average purchase price is represented as Liaoning Province > Inner Mongolia Autonomous Region > Jilin Province > Heilongjiang Province. There is little difference in the maize purchase price between counties and cities in Liaoning Province, Jilin Province, and Heilongjiang Province, while there are

significant differences (from 1.332 yuan/kg to 1.646 yuan/kg) between areas in Inner Mongolia Autonomous Region. Specifically, the average maize purchase price in Liaoning (1.522 yuan/kg) and Inner Mongolia Autonomous Region (1.516 yuan/kg) is close to each other, it is about 1.41 yuan/kg in Jilin Province and about 1.306 yuan/kg in Heilongjiang Province. Through comparison with the maize purchase price obtained from our field survey, it can be found that the published data is generally higher than the survey data. In the survey, the maize purchase price in Fuxin of Liaoning Province, Tongliao City of Inner Mongolia Autonomous Region, Dehui City of Jilin Province, and Suihua City of Heilongjiang Province is about 1.16 yuan/kg, 1.4 yuan/kg, 1.16 yuan/kg, and 0.8 yuan/kg, respectively; in many areas of Heilongjiang Province, the maize purchase price is even as low as 0.66 yuan/kg.

Table 1. Average maize purchase price in Northeast China from October 2016 to March 2017 (yuan/kg) (Data source: monitoring data of China National Grain and Oils Information Center)

Area	Average purchase price	Area	Average purchase price
Hohhot City	1.584	Shenyang City	1.490
Baotou City	1.624	Dalian City	1.544
Chifeng City	1.542	Anshan City	1.566
Tongliao City	1.434	Fushun City	1.456
Erdos City	1.606	Jinzhou City	1.574
Hulun Buir City	1.356	Fuxin City	1.528
Bayannur City	1.646	Liaoyang City	1.482
Hinggan League	1.332	Tieling City	1.444
Inner Mongolia Autonomous Region	1.516	Chaoyang City	1.538
Harbin City	1.340	Huludao City	1.602
Qiqihar City	1.310	Liaoning Province	1.522
Suihua City	1.340	Changchun City	1.364
Mudanjiang City	1.266	Songyuan City	1.366
Jiamusi City	1.306	Baicheng City	1.392
Heihe City	1.278	Jilin City	1.380
Jixi City	1.292	Yanbian Korean Autonomous Prefecture	1.348
Qitaihe City	1.330	Siping City	1.390
Hegang City	1.250	Liaoyuan City	1.402
Shuangyashan City	1.292	Tonghua City	1.380
Daqing City	1.356	Meihekou City	1.364
Heilongjiang Farms & Land Reclamation Administration	1.300	Gongzhuling City	1.396
Heilongjiang Province	1.306	Jilin Province	1.378

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According to the data released by the Ministry of Agriculture, the maize sales price in Northeast China has been basically stable since January 2017. The wet maize price (price of maize in the field) is 1 yuan/kg in 30 cities of Northeast China, dropping by 4.4% compared with the end of 2016 and dropping by 30.5% compared with the same period of 2015, close to our survey data.

3. Effects of the reform of maize purchasing and storage system on farmers' income

Based on the calculation of maize planting production costs, sales price and sales income in Inner Mongolia Autonomous Region, Jilin Province, Liaoning Province and Heilongjiang Province, we analyzed the effects of the reform of maize purchase and storage system on farmers' income from planting maize. (i) Tongliao City of Inner Mongolia Autonomous Region: The costs for the whole process of maize planting is 6,600 yuan/ha, the average yield is 9,720 kg/ha, and the unit price is 1.4 yuan/kg; the gross income of maize grower is 13,608 yuan/ha and the net income is 7,008 yuan/ha. (ii) Dehui City of Jilin Province: The costs for maize planting is 6,495 yuan/ha, the average yield is 9,997.5 kg/ha, and the unit price is 1.16 yuan/kg; the gross income of maize grower is 11,599.95 yuan/ha and the net income is 5,100 yuan/ha. (iii) Fuxin City of Liaoning Province: The costs for maize planting is 5,576.25 yuan/ha, the average yield is 6,750 kg/ha, and the unit price is 1.162 yuan/kg; the gross income of maize grower is 7,843.5 yuan/ha and the net income is 2,267.25 yuan/ha. (iv) Nenjiang County of Heilongjiang Province: The costs for maize planting is 10,380 yuan/ha, the average yield is 6,150 kg/ha, and the unit price is 0.62 yuan/kg; the gross income of maize grower is 3,813 yuan/ha and the net income is -6,567 yuan/ha; only after adding the subsidies of 2,404.05 yuan/ha for growers, subsidies of 1,117.5 yuan/ha for agricultural machinery and tools, and average claim funds of 3,690 yuan/ha for agricultural insurance, may the net income become positive, 656.55 yuan/ha.

The effects of the reform of maize purchase and storage system are significant on farmers' income from planting maize. The net income of maize growers in Tongliao City of Inner Mongolia Autonomous Region, Dehui City of Jilin Province, and Nenjiang County of Heilongjiang Province declined about 6,000 yuan/ha compared with the previous year. At the maize purchase price of 2.04 yuan/kg, 1.84 yuan/kg, 1.56 yuan/kg and 1.78 yuan/kg in Tongliao City of Inner Mongolia Autonomous Region, Dehui City of Jilin Province, Fuxin City of Liaoning Province and Nenjiang County of Heilongjiang Province in the previous year, the net income of maize growers declined 6,220.8 yuan/ha, 6,800.4 yuan/ha, 2,686.5 yuan/ha and 7,134 yuan/ha, respectively.

Table 2. Changes in maize planting costs, yield, unit price and income in Northeast China (excluding subsidies) (yuan) (Data source: survey data.)

	Cost	Yield (kg)	Unit Price (yuan/kg)	Gross income	Net income	Lower net income than 2015
Tongliao City	440	648	1.40	907.2	467.2	414.7
Dehui City	433	667	1.16	773.3	340.0	453.4
Fuxin City	371.75	450	1.16	522.9	151.2	179.1
Nenjiang County	692	410	0.62	254.2	-437.8	475.6

For the reform of the maize purchase and storage system, the central government formulated the subsidy policy for maize growers to make up for their direct losses incurred from maize price decline. The subsidy standards for the three provinces and one region in Northeast China are as follows. (i) For Heilongjiang Province, there is no division of superior and non-superior production areas, and the whole province implements a unified subsidy standard, namely, 2,308.8 yuan/ha. (ii) For Jilin Province and Liaoning Province, the subsidy standard takes a county as the unit. The subsidy funds are concentrated on superior production areas, and the average subsidy standard is 2,250 yuan/ha. According to the searched information feedback, Gongzhuling City has the highest subsidy amount (3,135 yuan/ha) in Jilin Province, and Nanpiao District in Huludao City has the highest subsidy amount (3,000 yuan/ha, as stated by some maize growers) in Liaoning Province. (iii) For Inner Mongolia Autonomous Region, 88 banners (or counties) implement the subsidy policy for maize growers. Take Chifeng City as an example, the total subsidy for the first batch and second batch maize growers is up to 1.48 billion, benefiting 520,000 maize growers, and the average maize subsidy is 3030 yuan/ha.

According to the above standards, the average subsidy amount for maize growers in the three provinces and one region of Northeast China is 3,030 yuan/ha in Inner Mongolia, 3,000 yuan/ha in Jilin Province, 2,250 yuan/ha in Liaoning Province, and 2,308.8 yuan/ha in Heilongjiang Province. Combined with the results of the survey data, the net income of maize growers in Tongliao City of Inner Mongolia Autonomous Region, Dehui City of Jilin Province, Fuxin County of Liaoning Province and Nenjiang County of Heilongjiang Province will be increased from 7,008 yuan/ha, 5,100 yuan/ha, 2,267.25 yuan/ha, and –6567 yuan/ha to 10,038 yuan/ha, 7,350 yuan/ha, 4,517.25 yuan/ha and -4258.2 yuan/ha; the reduction will decline from 6,220.8 yuan/ha, 6,800.4 yuan/ha, 2,686.5 yuan/ha and 7,134 yuan/ha in the previous year to 3,190.8 yuan/ha, 4,550.4 yuan/ha, 436.5 yuan/ha and 4,825.2 yuan/ha.

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The subsidy amount for maize growers can reach 50–100% of their net income from planting maize. Specifically, the subsidy amount for maize growers in Tongliao City of Inner Mongolia Autonomous Region, Dehui City of Jilin Province and Nenjiang County of Heilongjiang Province is about half of the net income of maize growers from planting maize. In other words, plus the subsidy, the net income of maize growers can be increased by 50%. In Fuxin County of Liaoning Province, the subsidy amount is basically equal to the net income of maize growers from planting one hectare of maize; in other words, plus the subsidy, the net income of maize growers can be increased by 100%. This has a significant effect on the income of maize growers and can fill the psychological gap of maize growers to a certain extent caused by the reform of maize purchase and storage reform.

4. Effects of the reform of maize purchase and storage system on farmers' livelihood strategies

Farmers' livelihood strategy selection is jointly determined by natural factors, socio-economic factors and farmer characteristics, and these factors have slow but long-term effects on farmers' livelihood strategies (Li, 2017; Wang, 2014). The reform of maize purchase and storage system is a policy factor and will exert a direct and significant effect on farmers' income. Therefore, farmers' livelihood strategies may make rapid response to this, and this is a main point of this study.

For the question "Will you transfer your land and go to cities to do migrant work within 1–2 years due to the decline of maize price?", 24.2% respondents selected "Yes", while 75.8% respondents selected "No". These results indicate that the reform of maize purchase and storage system may directly affect 24.2% of maize growers to adjust their livelihood strategies in the short term.

In the questionnaire, we classified factors influencing farmers' livelihood strategy selection into 10 types including policy factors, technical factors, etc. In each type, we assigned 1–3 points to different answers, the closer to 3 points, the better conditions for agricultural production.

Table 3. Questionnaire for farmers' livelihood strategy selection

Major indicators	Variable code	Specific description	Assignment criteria
Livelihood strategy selection		Will you transfer your land and go to cities to do migrant work within 1–2 years due to the decline of maize price?	Yes = -1; No = 1
Policy factor	PF	Are you satisfied with policies such as direct subsidies to grain producers?	Satisfied = 3; General = 2; Dissatisfied = 1
Technical factor	TF	Do you think agricultural books or technical guidance are useful?	Useful = 3; Not known or not matter = 2; No use = 1
Mechanical equipment	ME	How much agricultural mechanical equipment does your family have?	All = 3; Some = 2; No, completely rented = 1
Reserve fund	RF	Do you need to borrow money for buying seeds, chemical fertilizer, and pesticide?	Yes = 1; Just not need = 2; Not need at all = 3
Farming skills	FS	Do you know how to buy seeds, fertilize, and cultivate?	Yes = 3; A little = 2; Follow others = 1
Comparison between income and expenditure	CIA	Do you think that the income from farming is enough for the aily expenses such as clothing, food, lodging and transportation?	Enough and surplus = 3; Just enough = 2; Not enough = 1
Satisfaction with income from farming	SIF	Are you satisfied with the income from farming?	Satisfied = 3; general = 2; Dissatisfied = 1
Difficulty of land circulation	DLC	Do you think it is easy to circulate land?	East = 1; General = 2; Not easy = 3
External influence	EI	What do you think of the effects of family farms or cooperatives on your farming?	Good = 1; No matter = 2; Not good = 3
Residence selection	RS	Do you think that living in the city after working in the city is good?	Good = 1; No matter = 2; Not good = 3

At the early stage of the implementation of the reform of maize purchase and storage system, farmers who make adjustments to their livelihood strategies or do not adjust their livelihood strategies, their attitudes toward "direct subsidies to grain producers" and other agricultural policies, the effectiveness of agricultural technology, their farming skills, and their understanding of urban living are generally similar. In 24.2% respondents who selected changing the livelihood strategies, four factors have the average score higher than 2, specifically, policy factor (2.34), technical factor (2.52), farming skills (2.14), and residence section (2.21); in 75.8% respondents who selected not changing their livelihood strategies, five factors have the average score higher than 2, specifically, policy factor (2.03), technical factor (2.27), farming skills (2.11), external influence (2.09), and residence section (2.41).

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Table 4. Average score of factors for farmers selecting different livelihood strategies (points)

	PF	TF	ME	RF	FS	CIA	SIF	DLC	EI	RS
Adjustment of Livelihood Strategy	2.34	2.52	1.69	1.34	2.14	1.45	1.07	1.86	1.9	2.21
No adjustment of Livelihood Strategy	2.03	2.27	1.66	1.57	2.11	1.76	1.21	1.85	2.09	2.41

Through comparing the two livelihood strategies “continue farming” and “go to cities to do migrant work”, we obtained the self-scoring of respondents for 10 types of influencing factors. (i) For farmers who adjust their livelihood strategies to “go to cities to do migrant work”, the proportion of their scores in “policy factor”, “technical factor”, and “difficulty in land circulation” is significantly higher than those farmers who do not adjust their livelihood strategies. This indicates that most of these farmers have both experience of migrant work and rural farming, they have realized the importance of scientific and technological power for agricultural production. Besides, they do not stress the farmland value, so it can promote the circulation of contractual land. In addition, various rural subsidies are generally provided to “owners of land” and accordingly these farmers usually have higher satisfaction with the state subsidy policies. (ii) For farmers who do no adjust their livelihood strategies, namely, farmers who select “continue farming”, the proportion of their scores in “reserve fund”, “income and expenditure assessment”, and “satisfaction with farming income” is significantly higher than those farmers who adjust their livelihood strategies to “go to cities to do migrant work”. This indicates that farmers with agricultural production as main economic activities and economic sources of their families for a long term are higher in agricultural reserve fund, farming income and daily consumption expenditure assessment, and farming income satisfaction than farmers who adjust their livelihood strategies, so these may be key factors influencing farmers' selection of livelihood strategies. What’s more, the minimum purchase price policy implemented in several years ago provides farmers with certain family economic foundation due to farming, thus, farmers who do not have migrant work experience and are used to rural production and living conditions are unwilling to change their livelihood strategies.

Table 5. Proportion of farmers who adjust their livelihood strategies to "go to cities to do migrant work" in scores of various factors (%)

	PF	TF	ME	RF	FS	CIA	SIF	DLC	EI	RS
High	58.6	62.1	0	6.9	34.5	6.9	0	37.9	3.4	51.7
Medium	17.2	27.6	69	20.7	44.8	31	6.9	10.3	82.8	17.2
Low	24.1	10.3	31	72.4	20.7	62.1	93.1	51.7	13.8	31

Note: "high" represents the score of factor selected by farmers is 3, "medium" represents the score of factor selected by farmers is 2 and "low" represents the score of factor selected by farmers is 1.

Table 6. Proportion of farmers who select "continue farming" as their livelihood strategies in scores of various factors (%)

	PF	TF	ME	RF	FS	CIA	SIF	DLC	EI	RS
High	31.9	42.9	0	15.4	38.5	20.9	0	25.3	9.9	51.6
Medium	39.6	41.8	65.9	26.4	34.1	34.1	20.9	34.1	89	37.4
Low	28.6	15.4	34.1	58.2	27.5	45.1	79.1	40.7	1.1	11

Note: "high" represents the score of factor selected by farmers is 3, "medium" represents the score of factor selected by farmers is 2 and "low" represents the score of factor selected by farmers is 1.

5. Conclusions and discussions

The reform of maize purchase and storage system has a significant effect on the maize purchase price. After this reform is implemented, the maize purchase price in most areas of Northeast China dropped by 30%-50%, directly leading to income of maize growers from planting maize at the same proportion. Considering such situation, the state promptly issued the maize grower subsidy system, which has played a certain role in buffering the decline of maize growers' income. This subsidy system will remain unchanged in three years (2016–2018), thus most farmers are optimistic about the subsidy amount on the basis of the subsidy level in 2016, and some farmers still plan maize because of simple planting, production inertia, and geographical conditions(Lv, 2016; Xu, 2016), so as to save their family labors to obtain some income from migrant work.

Apart from the specific influencing factors in the questionnaire, farmer's part-time job behavior is also a key factor influencing their adjustment of their families' overall livelihood strategies (Chen, 2013). According to our interviews, for farmers who intend to transfer out their land and change their livelihood strategies, 72.4% have migrant work experience, and their work is mainly non-heavy physical labor, such as chef, hairdressing, car maintenance, greening, and cleaning; for farmers who do not intend to transfer out land, namely, do not change their livelihood strategies, only 31.9% have migrant work experience, and their work is mainly heavy physical

labor in the construction industry. These indicate that in their change of livelihood strategies from farming to migrant work, their original migrant work experience and ability will play a great guiding role (Wu, 2016). Therefore, in the process of exploring the effects of policy changes on farmers' livelihood strategies, further analysis should be carried out on the differences in the individual characteristics of farmers (Li, 2012; Zhao, 2013).

The agricultural policy change is the important factor that drives the farmers' household livelihood strategy adjustment. By adjusting household livelihood strategies, farmers can protect themselves from damage or minimize losses. Therefore, based on the perspective of maintaining household income stability, we believe that (i) government needs to provide relevant subsidies to reduce the direct impact of policy changes on farmers' income; (ii) farmers should be guided to make a comprehensive measurement based on their own abilities, relevant experience and capital reserve, so as to avoid adjusting household livelihood strategies immediately because of the short-term decline of income from planting; and (iii) governments at all levels should carry out comprehensive skills training for farmers, including skills and vocational training, so as to enhance farmers' ability to choose strategies to adjust their livelihoods in response to changes in the external environment.

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KUKURŪZŲ AUGINIMO POLITIKOS REFORMOS PASEKMĖS ŠIAURĖS RYTŲ KINIJOJE

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Santrauka

Nacionalinė politika yra svarbus veiksnys, lemiantis ūkininkų išgyvenimo strategiją. Yra svarbu analizuoti žemės ūkio pokyčių įtaką ūkininkų pajamoms. Šiaurės Rytų Kinija (Heilongjiang, Jilin, Liaoning provincijos ir Vidinės Mongolijos autonominis regionas) yra strateginė vietovė, garantuojanti apsirūpinimą grūdais Kinijoje ir kurioje yra išbandomos naujos žemės ūkio politikos priemonės. Kukurūzų auginimo politikos pokyčiai Kinijoje lėmė kukurūzų kainos pokyčius ir ūkininkų pajamų mažėjimą. Šio straipsnio tikslas – atsižvelgiant į politikos pokyčius, modeliuoti kukurūzų auginimo pajamų ir kaštų pokyčius bei ūkininkų išgyvinimo strategijos pritaikymą Šiaurės Rytų Kinijoje. Anketinės apklausos (125 respondentai) rezultatai patvirtina makro lygmens duomenis ir rodo, kad kukurūzų supirkimo ir sandėliavimo sistema, pradėta įgyvendinti 2016 metais, lėmė kukurūzų kainų mažėjimą daugiau kaip 30 proc. 2017 m., o kukurūzų augintojų pelnas daugelyje vietovių sumažėjo daugiau kaip 60 proc. lyginant su ankstesniais metais. Dėl staigaus kainų mažėjimo, apie 24,2 proc. apklaustųjų kukurūzų augintojų planavo pakeisti išgyvenimo strategijas trumpuoju laikotarpiu. Pateikiami pasiūlymai žemės ūkio politikos tobulinimui ir ūkininkų įgūdžių didinimui.

Raktiniai žodžiai: ūkininkų pajamos, pragyvenimo šaltiniai, Šiaurės rytų Kinija, kukurūzų pirkimo ir saugojimo sistemos reforma.

JEL kodai: Q11, Q18.