

ARAFE

The Association for Regional Agricultural and Forestry Economics

地域農林経済学会

The 8th International Workshop

第8回 国際ワークショップ

Meijo Koen Campus, Aichi Gakuin University (Nagoya, Aichi)

Bld: Castle Hall, Room 1201, 2nd floor (Hybrid with Zoom)

愛知学院大学 名城公園キャンパス(愛知県名古屋市)

建物：キャッスルホール

教室：2階 1201 教室 (Zoom とのハイブリッド開催)

Saturday June 29, 2024

2024年6月29日(土)

9:30 – 16:55 JST

The Association for Regional Agricultural and Forestry Economics

The 8th International Workshop

Meijo Koen Campus, Aichi Gakuin University, Castle Hall, Room 1201, 2nd floor

Saturday June 29, 2024

9:30 – 16:55 JST

Workshop Program

Saturday June 29, 2024:

Registration begins at 8:50.

9:30 – 9:35 5 min.

Opening remarks

Dr. Motoki AKITSU, ARAFE President and Professor, Kyoto University

9:35 – 9:40 5 min.

Welcome remarks

Dr. Kae SEKINE, ARAFE Executive Board of Internationalization and Professor, Aichi Gakuin University

9:40 – 12:00 140 min.

Session 1. Human Security and Rural Vulnerability

Session Chair: Dr. Hart FEUER, Kyoto University

Presentation 1.1 by Ritwika Dutta ROY, Ritsumeikan University

“Role of NGOs in Human Trafficking: A Case Study of West Bengal, India.”

Commented by Dr. Kenta SAKANASHI, Kyoto University

Presentation 1.2 by Meerim ESENKULOVA, Hiroshima University

“Impact of agricultural support on food security among vulnerable families in Kyrgyzstan”

Commented by Dr. Akihisa NONAKA, Mie University

Presentation 1.3 by Sho YAMADA, Tohoku University

“Conflicts and Agricultural Reconstruction: Challenges Faced by Formerly Displaced Farmers”

Commented by Dr. Niraj Prakash Joshi, Hiroshima University

Presentation 1.4 by Mohammed Asaduzzaman SARKER, Bangladesh Agricultural University

“Effect of Rohingya Refugee on Deforestation and Need for Revitalizing the Hill Forest in Teknaf Peninsula of Bangladesh”

Commented by Dr. Keshav Lall MAHARJAN, Hiroshima University

12:00 – 13:00 60 min. Lunch break

13:00 – 14:45 105 min.

Session 2. Agricultural Development of Sub-Saharan Africa

Session Chair: Dr. Nina TAKASHINO, Ritsumeikan University

Presentation 2.1 by Bebechou Mariam Adam DADE, Tottori University

“Japanese consumers perception of imported tropical fruit: A case study of Benin Republic dried pineapple.”

Commented by Dr. Hiroki WAKAMATSU, PRIMAFF

Presentation 2.2 by Bertha Lilian MKANDAWIRE, Kyoto University

“The seasonal variations in women’s time use patterns, health outcomes, and food security among Malawian agricultural households”

Commented by Dr. Kana MIWA, Nagasaki University

Presentation 2.3 by Rejoice Anne MEBO, Kindai University

“Analysis of Economic Shocks and Coping Strategies by Households in Nigeria”

Commented by Dr. Ken MIURA, Kyoto University

14:45 – 15:00 15min. Coffee Break

15:00 – 16:45 105 min.

Session 3. Rural Household Choices and Outcomes

Session Chair: Dr. Tadayoshi MASUDA, Kindai University

Presentation 3.1 by Dr. Koji YASUDA, Aomori Public University

“Empirical Analysis about Farm Intention on Agricultural Scale in Hilly and Mountainous Areas:
A Case Study of Yabu City, Japan”

Commented by Dr. Nobuyoshi YASUNAGA, Shimane University

Presentation 3.2 by Deepak Kumar, Hiroshima University

“The Impact of Hermetic Storage Technology Adoption on Storage Quantity
and Post-harvest Storage among Smallholders in Nepal: Evidence from Randomized Promotion”

Commented by Dr. Minakshi KEENI, Tohoku University

Presentation 3.3 by Khadija KAFFA, Kyoto University

“Gendered Access to Resources, Preferences, and Crop Choices in Arid Regions:
A Focus on Traditional Oases in Southeastern Morocco”

Commented by Dr. Seiichi FUKUI, Kobe University

16:45 – 16:50 5 min.

Acknowledgements by Dr. Tadayoshi MASUDA, ARAFE Executive Board of Internationalization and
Assoc. Professor, Kindai University

16:50 – 16:55 5 min.

Closing remarks

Dr. Yoshihiro ADACHI, ARAFE Vice President and Professor, Kyoto University

M.C. & Zoom operation by Dr. Nina TAKASHINO, ARAFE Executive Board of Internationalization and Assoc. Professor, Ritsumeikan University

17:30 – 19:30 Buffet party at SARU Café on the Campus

Venue Information

Room 1201, Bld. Castle Hall

3-1-1 Meijo, Kita-ku, Nagoya, Aichi 462-8739

The closest metro station: Meijo Koen station, Meijo Line, Nagoya City Metro

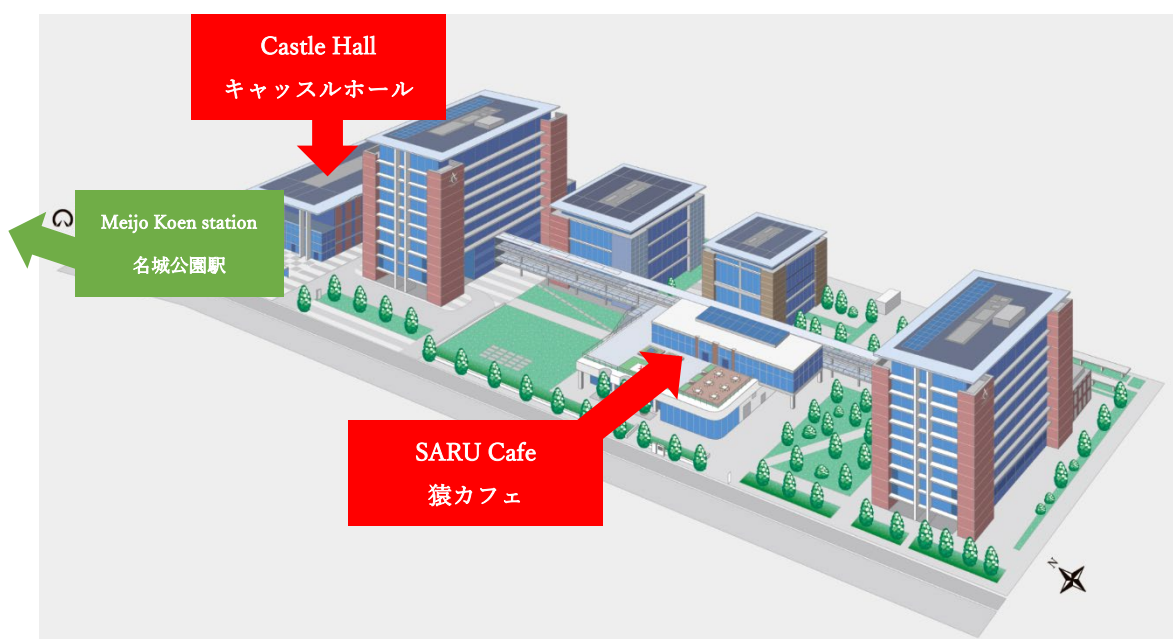
Access to Aichi Gakuin University

URL: https://www.agu.ac.jp/english/location_access/index.html#AccessMap

Campus map and floor guide

URL: <https://www.agu.ac.jp/guide/campus/>

https://www.agu.ac.jp/pdf/guide/campus/m_castlehall.pdf



会場案内

〒462-8739 愛知県名古屋市北区名城 3-1-1 キャッスルホール 1201 教室

最寄駅：名古屋市営地下鉄名城線「名城公園駅」

愛知学院大学名城キャンパスまでの交通案内

URL: <https://www.agu.ac.jp/access/meijo/>

キャンパスマップとフロアガイド

URL: <https://www.agu.ac.jp/guide/campus/>

https://www.agu.ac.jp/pdf/guide/campus/m_castlehall.pdf

Lunch info お昼ご飯情報

The cafeteria, canteen, and convenience store on the campus are closed on Saturday.

There are convenience stores and some restaurants in the walking distance from the campus.

キャンパス内のカフェ、学食、コンビニは、土曜は閉まっています。

キャンパスから徒歩圏内にコンビニやレストランがあります。

1. Tonarino at Meijo Park (Cafes and restaurant): <http://tonarino-park.jp/>
名城公園トナリノ(カフェ・レストランあり)
2. Kinshachi Shopping Arcade (restaurants and convenience stores): <https://www.kinsyachi.com/street/03025/>
金シャチ商店街(食堂・コンビニあり)
3. Convenience stores of Lawson, Family Mart, Seven Eleven are available.



Buffet Party Info 懇親会

17:30 – 19:30 SARU Café on the Campus (<https://tabelog.com/aichi/A2301/A230109/23053738/>)

Fee (per person): 5000JPY (full tariff), 3000JPY (student tariff) Free drink bar (90 minutes) included.

Parking Info 駐車場

Thank you for using the public transportation as Meijo Koen Campus has limited spaces for parking. If you have any special parking needs, please contact the organizer.

Wifi Info Wifi 情報

SSID: aguwan-guest, Password: mkc20240629

Collection of Abstracts

Presentation 1.1

Role of NGOs in Human Trafficking: A Case Study of West Bengal, India

Ritwika Dutta ROY¹

1. Ritsumeikan University

In 2000, the United Nations established the “Palermo Protocol”, which formalized the definition of Human Trafficking. The United Nation defines, Human Trafficking as the abduction, fraud, deception, abuse of power, or receiving payments or benefits to achieve obtain the consent exploitation. Human trafficking is primarily driven by the desires for greater economic opportunities. South Asia has experienced a surge in intra-regional trafficking and has recently become a notorious source of trafficked people. India is a country where, trafficking, especially among women, is a very common phenomenon. This study aims to review the scenario current state of Human Trafficking in West Bengal and the challenges they encounter addressing Human trafficking cases. The study also explores the deprived sections and communities in West Bengal that are more susceptible to Human Trafficking. The method of research primarily focused on NGOs in West Bengal assisting victims and survivors of trafficking and commercial exploitation in their protection and rehabilitation efforts.

The study was conducted in limited areas of West Bengal but the experiences gathered from the study are the naked truth of what needs to be done, studied and addressed. The research was conducted in February 2024 using qualitative methods, including, case studies, oral interviews and a structured questionnaire. The findings from the surveyed NGOs revealed that 300 cases have been reported in the last five years, including cross border trafficking. Furthermore, the results showed that fake marriages were the primary means of trafficking and many trafficked victims were victims of sex tourism. Most trafficked victims were female with 60%-70% under 18 and coming from extremely poor families. Human trafficking victims also face challenges from traffickers, who often blackmail or attack them. The study discovered that victims are transported to tourist destinations, such as Goa, where they exploited by visitors. According to the NGOs, there should be stronger laws and order, and an Anti-Trafficking Bill should be passed by the Parliament, which might combat trafficking in a long run. However, fund shortages are the biggest and most common challenge for all the NGOs in West Bengal.

Presentation 1.2

Impact of agricultural support on food security among vulnerable families in Kyrgyzstan

Meerim ESENKULOVA ¹

1. Hiroshima University

Food security in the Kyrgyz Republic is one of the main directions for ensuring the national security of the country from mid-term perspective, which is a factor in preserving its statehood and sovereignty. It is also the most important component of demographic policy and a necessary condition for the implementation of strategic national priorities, that is, improving the quality of life of citizens by guaranteeing high standards of life support. Inadequate nutrition and food instability are the main causes of poverty, damage to the health of the population, and destabilization of the cognitive and physical development of the population, all of which lead to a decline in the working capacity of the population, pushing human capital into poverty. The key to a country's food security is to improve the well-being of the population, as the poor spend most of their expenditure on food, making them vulnerable to rising food prices. Food security exists, as defined by the Food and Agriculture Organization of the United Nations, when all people have physical, social, and economic access to safe and nutritious food in sufficient quantities to meet their dietary needs and preferences for an active and healthy life. Household food security means applying the concept at the household level. This study examines the impact of agricultural support on the food security of vulnerable households. The study analyzed the Food Security Index and Household Dietary Diversity Score of vulnerable families who received and did not receive agricultural support under the Fair and Sustainable Development Solutions Community Fund Project using propensity score matching technique. The results can be used to the further development of effective food security programs and policies. Thus, the findings of this study will be instrumental to the Ministry of Agriculture of the Kyrgyz Republic in improving and modernizing the existing mechanisms of public policy, thereby formulating a strategy for the advancement and bolstering of the agro-food sector and food security of the country, while also contributing towards achieving Target 2 of the Sustainable Development Goals (SDGs), which aims to eradicate hunger by 2030.

Presentation 1.3

Conflicts and Agricultural Reconstruction: Challenges Faced by Formerly Displaced Farmers

Sho YAMADA¹

1. Tohoku University

Since World War II, many conflicts have occurred in developing countries, where many people live in rural areas and depend on agriculture for their livelihoods. Thus, conflict is likely to affect rural residents and cause them to become refugees. Some refugees may integrate into host communities after the conflict, whereas others may wish to return to their original homes. Therefore, agriculture in post-conflict settings is crucial for the livelihood recovery of formerly displaced people. However, few studies have been conducted on how post-conflict circumstances constrain agricultural activities.

In the northern and eastern parts of Sri Lanka, many people were displaced because of internal conflicts that lasted from 1989 to 2009. Muthur is one of the biggest communities in terms of the number of people displaced due to conflict. Muthur residents were forced to evacuate urgently because of the sudden artillery fire in 2006. After a prolonged period of displacement, they returned to Muthur around 2014.

The objective of this study was to identify factors constraining agriculture in post-conflict situations and consider the roles of the government and aid donors in enhancing rural reconstruction. Semi-structured interviews were conducted in December 2019 with farmers who had returned to Muthur.

The study revealed that physical disability, destruction of storage facilities, and changes in land rights caused by the conflict constrained agricultural activities, along with general agricultural problems such as an unstable water supply and nonfunctional crop insurance. Land rights issues also led to the exclusion of farmers from farmers' organizations and the inability to receive cash assistance.

Aid donors and governments can accelerate post-conflict agricultural reconstruction by clarifying land rights, even in refugee camps, and providing financial compensation for disabilities and loss of physical capital. However, in cases of intrastate conflict, where the government is one of the conflict actors, determining who should lead the reconstruction remains a problem. Without resolving land rights issues, normal development projects could harm the livelihoods of returnees from displacement.

Presentation 1.4

Effect of Rohingya Refugee on Deforestation and Need for Revitalizing the Hill Forest in Teknaf Peninsula of Bangladesh

Mohammed Asaduzzaman SARKER ¹, M. R MOMIN ¹ and Osamu KOZAN ²

1. Bangladesh Agricultural University, 2. Kyoto University

The world is facing the most severe refugee crisis in history with an average of 28,300 people per day forced to flee their homes every 20 minutes due to war, violence, or persecution of race, religion, ethnicity, or political opinion, and the numbers are growing every day (UNCHR, 2022). In August 2017, armed attacks, massive violence, and serious human rights violations forced thousands of Rohingyas to flee their homes in Myanmar's Rakhine State. Currently, more than one million people are safe in Bangladesh, with the majority living in the Teknaf Peninsula of the Cox Bazar region (IOM, 2018). The Teknaf Wildlife Sanctuary (TWS) is a protected forest on the southern coast of Bangladesh. The TWS also faces a high rate of deforestation, largely owing to the over-reliance of local people on forest resources. Moreover, illegal settlement establishment by the Rohingya refugees, agricultural cash crop cultivation (betel leaf), and fuel-wood collection were the main drivers responsible for deforestation. Tani and Rahman (2018) mentioned that the increased number of Rohingya refugees have led to a 9.58% decrease in forest area. Several empirical studies suggest that deforestation driven by anthropogenic activities can have multiple negative impacts on the environment, including the loss of wildlife habitat, soil erosion and desertification, loss of traditional livelihoods, and increased ecological risks from forest fragmentation. Changes in forest cover further affect the capacity of forest biomass to store carbon, disturbing the local climate by modulating diurnal temperature variation, and thus increasing the risks of global climate change (Morales-Hidalgo et al., 2015). To overcome the negative impacts of deforestation, it is possible to reduce, to some extent, the innovation capacity development of forest dwellers involve in community-based forest resources management. Considering this reality, this study aims to analyze the effect of Rohingya refugees on deforestation in the TWS. The findings of this study show that due to the massive refugee influx in August 2017, the rate of deforestation was massive and reduced by 25.78%. However, because of this Rohingya refugee influx, the agricultural land area was also reduced by approximately 16.3%. In contrast, settlement increased by approximately 189%. This was due to the accommodation of one million new settlers, as well as a huge number of INGOs and Donor agencies serving the refugees. However, this rapid deforestation, as well as changes in land-use patterns, has extensive impacts on the lives and livelihoods of host communities, along with environmental consequences. Thus, it is essential to enhance the capacity of host communities to participate in social forestry programs to restore forests in the TWS. However, a holistic approach is needed by the Forest Department and other concerned agencies to allow this to happen.

Presentation 2.1

Japanese consumers perception of imported tropical fruit: A case study of Benin Republic dried pineapple.

Bebechou Mariam Adam DADE ¹

1. Tottori University

In the tropical country of Benin Republic (Benin), agriculture plays a key role in employment and represents roughly 70% of the working population. After cashew and cotton, pineapple is the third most important crop fruit in the country, with 472,514 tons produced annually in 2022. Pineapple fruits are mostly used to make juice and for fresh consumption. Pineapple syrup, pineapple jam, and dried pineapple are only minor products. Even though the fruit is widely available in European and African countries, its market share in Asia is non-existent. Developed nations of the North Asia subregion, including Japan, rely primarily on imports to supply their tropical fruit markets. According to several studies, Japan is one of the world's leading importers of fresh pineapples. Still, it is also one of the most difficult food markets to enter due to strict food regulations and fierce competition. In addition, there has been no empirical research on the import-export relationship between the Benin and Japan pineapple markets. To expand into a new market, Benin dried pineapple stakeholders must first understand how consumers perceive the product's food quality. Japanese consumers usually have high standards and a strong preference for high-quality goods. This study sought to investigate Japanese consumers' quality perceptions of Benin dried pineapple based on sensory and non-sensory factors. Consumer experiences during and after consumption will influence his acceptance for a product and future purchases. This study utilized a sensory analysis survey (N = 281), which was carried out from October to December 2023 at four supermarkets in Shimane Prefecture. Respondents tasted and expressed their opinions about sugarloaf pineapple, which is the most grown variety of pineapple in Benin. Multivariate logistic regression analysis was used to analyze the results. The following are the principal findings: (1) Consumers value the sensory attributes of sweetness, acidity, taste, texture, and odor in both varieties. (2) Consumers value the non-sensory attributes of food processing (environmental reasons) and food credence (repeated purchase). In the future, Japanese customers are willing to purchase dried pineapple from the Benin and recommend it to others. They are attracted to the products due to their taste and because they are thought to be organic food certified by the European Union. The results offer compelling evidence that Japanese consumers have a positive perception of Benin Republic dried fruits and are enthusiastic about them. The research result represents a further step towards developing agricultural exchanges between developing and developed countries. It provides stakeholder insight into a possible new market for Benin and Japan's agricultural cooperation.

Presentation 2.2

The seasonal variations in women’s time use patterns, health outcomes, and food security among Malawian agricultural households

Bertha Lilian MKANDAWIRE¹

1. Kyoto University

Agricultural labor demand varies seasonally, affecting labor supply and gender roles. In addition, intense farming seasons correspond to the “hunger season,” with heightened food insecurity owing to seasonal food scarcity, which further complicates the link between health, nutrition, and work. Due to these seasonal fluctuations, women face challenges in managing their nutrition, workload, and health during the farming season. Thus, the complex link among health, nutrition, and work emphasizes the need for a holistic approach to women’s welfare. Despite seasonality and its consequences as a fundamental problem in rural areas, descriptive evidence is still scarce owing to the high data requirements of frequent surveys across seasons. Using household panel data collected four times within the same season in the Mchinji district, Malawi, this study investigates seasonal variations in women’s time-use patterns, health outcomes, and food security among Malawian agricultural households.

We selected Mchinji District as our survey area because of the expected diverse time-use patterns of females, reflecting its proximity to the capital cities of Lilongwe and Zambia. After selecting two sites in the district, 300 households from 20 villages were randomly selected for the survey. As a unique feature, the survey interviewed female representatives (i.e., the spouses of the head or female household heads) aged 18–49 years in the sampled households. During the main agricultural season of 2022-23, each household was visited and interviewed four times: in November 2022, January 2023, March 2023, and June 2023. Each survey collected detailed information on demographics, the health status of each member, food security, and female time-use. We also measured body weight and left mid-upper arm circumference (MUAC) in female representatives and children under 14.

The results indicate that women’s work hours are inversely related to leisure time, with a notable drop in leisure time during periods of increased farm labor demand between November and January. However, the average time spent on household chores remained stable across seasons, reflecting the traditional responsibility of women in domestic work. The study reveals that seasonal health shocks, particularly during the cropping season from November to February, with an average of three sick days per month, reduce women’s hours of household production, even after controlling for seasonal dummies. By contrast, we detected no effect of illness on farm production work hours. Anthropometric outcomes (i.e., body weight and MUAC) also deteriorated during the lean seasons but reverted after harvest in June. This study also finds seasonal fluctuations in food security and dietary diversity, with households experiencing food scarcity during the “lean season” between planting and harvesting periods. The Household Dietary Diversity Score reveals that households typically consume only three food groups on average during the lean season, consisting primarily of staples (Nshima) and vegetables, without nutrient-dense foods such as meat, fish, and milk. These observations from the descriptive evidence still hold after controlling for household fixed effects and household-specific sickness shocks in the regression analysis. Overall, this study contributes to the literature by providing empirical evidence that seasonality remains a threat to rural households in Malawi, particularly women.

Presentation 2.3

Analysis of Economic Shocks and Coping Strategies by Households in Nigeria

Dr. Rejoice Anne MEBO¹

1. Kindai University

Globally, households are exposed to shocks that negatively impact their welfare. In Nigeria, households are vulnerable to economic shocks, which can have significant implications for their well-being and livelihood. This study analyzes the economic shocks experienced by households and the coping strategies employed to manage these shocks. Secondary data were obtained from the Nigerian Living Standards Survey dataset (NLSS, 2018-19). After data cleaning, 22,123 households were included in this study. Descriptive statistics were used to profile the economic shocks experienced by Nigerian households and to analyze the coping strategies applicable to economic shocks. Additionally, a probit regression model was used to determine the factors that influence the economic shocks experienced by households, and a multivariate probit regression model was used to investigate the factors that influence the coping strategies used by households.

The results showed that the majority (82.2%) of the households had male heads, and more than half (57.4%) of the household heads were farmers. Also, most households (69.2 %) reside in rural areas. In addition, the majority (81.3%) of household heads had education and wage jobs (82.3%). The major shocks reported by households were agriculture-related: i) an increase in food prices (23.5%), ii) theft of property (9.9%), iii) livestock deaths (7.6%), and iv) increased input prices (7.3%). The five major coping strategies adopted were i) doing nothing (63.2%), ii) receiving assistance from friends and family (18.8%), iii) reduced food consumption (9.8%), iv) reduced non-food consumption (8.2%), and v) engaging in additional income-generating activities (8.2%). The probit regression results show that the probability of a household being exposed to shock decreases when the male head is married and lives in an urban area. In addition, households that received income in the last year and those who engage in formal wage-paying employment are more likely to experience economic shocks. The multivariate probit regression results indicate that households with married male heads have a reduced probability of engaging in additional income-generating activities, receiving assistance from friends and family, reducing food consumption, and reducing non-food consumption as coping strategies for the shocks experienced. In addition, residing in urban areas significantly decreased the probability of households doing nothing as a coping strategy, whereas households who worked wage jobs showed a significant increase in the probability of engaging in additional income-generating activities. The covariance of the error term and likelihood ratio test indicate that receiving assistance from friends and family and engaging in additional income-generating activities are positively and significantly associated coping strategies, showing that the two variables are complements. However, these pairs of coping strategies; ‘doing nothing’ and ‘receiving assistance from friends and family’, ‘doing nothing’ and ‘reduced food consumption’, ‘doing nothing’ and ‘reduced non-food consumption’ are supplements.

The economic shocks experienced by Nigerian households are mainly agriculture-related, and most households do nothing or reduce food and non-food consumption. Investments in agricultural development projects, community-based projects, education, and skill development can assist households in additional income-generating activities to enhance their resilience to economic shocks.

Presentation 3.1

Empirical Analysis about Farm Intention on Agricultural Scale in Hilly and Mountainous Areas: A Case Study of Yabu City, Japan

Koji YASUDA¹, Tomoko KINUGASA² & Akifumi ETO³

1. Aomori Public University

2. Kobe University

3. Museum of Nature and Human Activities, Hyogo

This study empirically identifies the effects of farmers' subjective health expectancy on intention in terms of agricultural scale and farm exit in hilly and mountainous areas of Japan. We conducted an ordered probit analysis of farmers' intentions regarding agricultural size, based on a questionnaire survey of farmers in Yabu City, Hyogo Prefecture, in 2019. The dependent variable was the respondent's agricultural scale intention (the person in the household with the highest number of days engaged in agriculture). Regarding the agricultural scale intention, the analysis was conducted with 'expanding scale' as 4, 'maintaining scale' as 3, 'reducing scale' as 2, and 'want to quit already' as 1, and samples that answered 'don't know' were excluded.

As a variable for the farmer's subjective health expectancy, we used respondents' own perception of "how many years do you think you can live in good health?" as the actual number of years. We also used the number of family members and degree of attachment to the region (Yabu City) as explanatory variables. The results show that both subjective health expectancy and attachment to the region reduce 'farm exit' and promote 'maintaining' and 'expanding' the size of agriculture. The results revealed that the prolonged survival period increases the need for maintaining and expanding agriculture for livelihood maintenance, positively impacting agricultural scale intention. The study suggests that individuals with greater attachment to a region are more likely to contribute to regional agriculture and place importance on human relationships.

Furthermore, the study analyzed the effect of the number of family members in each farm household, and this variable also had positive effects on agricultural size. Having more family members means that support for farm work and household chores can be obtained from family members. Even if one has a job other than agriculture, it seems easier to balance agricultural and nonagricultural work by receiving support from family members for farm work while one is at work. Moreover, if there are more family members, there is a possibility that there will be more family members to support, but agriculture will continue to make a living from agriculture and support the family. Health improvement is more important for maintaining or expanding regional agriculture, and policies vis-à-vis, the awareness of health status are also important. Promoting cohabitation in farm households is crucial as it encourages family members' support for agricultural work. Furthermore, it is essential to not only provide support for farm work and daily life through family and local personal connections but also foster a sense of attachment to the region. Support and communication from local governments and the promotion of community interaction are particularly significant for solitary elderly farmers.

Presentation 3.2

The Impact of Hermetic Storage Technology Adoption on Storage Quantity and Post-harvest Storage among Smallholders in Nepal: Evidence from Randomized Promotion

Deepak KUMAR¹, Keshav Lall MAHARJAN¹

1. Hiroshima University

It is imperative to feed continuously growing populations by reducing post-harvest storage losses. Reducing food loss and enhancing food security are concerns in both developed and developing countries. Maize, a staple crop of 4.9 billion people, has estimated storage losses due to insect pest infestations ranging from 20 to 30% (Shiferaw et al., 2011). Studies have emphasized that hermetically sealed bags and metal silos are effective in controlling insect pest infestations, reducing damage, and improving grain quality (Murdock et al., 2012; William et al., 2017). Promoting the adoption of improved storage technologies is crucial for strengthening food availability and supply. Despite the introduction of such technology in Nepal, smallholder farmers in rural, hilly, and mountainous regions still rely on traditional storage methods with high insect pest problems. Therefore, encouraging smallholder farming households in Nepal to adopt improved storage systems is essential.

Despite the growing number of empirical studies, there is limited robust causal evidence regarding the impact of hermetic storage technology on storage quantity and postharvest storage losses. We evaluated the impact of Purdue Improved Crop Storage (PICS) hermetic bags by randomly promoting smallholder households with subsidy offers on the price of up to three PICS bags. We estimate the local average treatment effects (LATE) for 692 smallholder maize farmer households in Nepal. A total of 149 farming households were encouraged with a 100% subsidy offer, 196 households with a 50% subsidy offer, and 347 households in the control group did not receive any subsidies.

We found a statistically significant impact of PICS hermetic bags on storage quantity and postharvest storage losses. The adoption of hermetic storage technology increases storage by 72.52 kg and reduces postharvest storage losses by 9.5 kg to encourage households compared to the control group. Our results suggest that encouraging smallholders to adopt hermetic storage may enhance sustainable agri-food systems.

Presentation 3.3

Gendered Access to Resources, Preferences, and Crop Choices in Arid Regions: A Focus on Traditional Oases in Southeastern Morocco

Khadija KAFFA¹

1. Kyoto University

Male and female farmers often make different decisions regarding crop choices. Investigating the drivers of gender-differentiated crop choices has important policy implications for agricultural development. This study underscores gender disparities in access to production resources and taste differences to explain gender-differentiated crop choices and quantifies their relative importance in the Moroccan context. In doing so, we analyzed survey data from approximately 200 farmers in traditional oases within the Tata region of Southeastern Morocco.

The Tata region provides an excellent laboratory for examining crop choices from a gender-based perspective, for several reasons. First, female farmers play a significant role in agriculture and often make independent decisions. Second, females have limited access to resources, reflecting their sociocultural norms. Finally, several crops, ranging from annual to perennial, are available in the farmers' choice sets. Among them, date palm plantations require a longer growth cycle but promise higher profitability than other crops. Thus, time and risk preferences should significantly influence farmers' crop choices.

The survey results confirmed significant gender disparities in access to resources. First, the total size of the plots cultivated by female farmers is smaller by approximately 3.5 hectares than that of the plots cultivated by their male counterparts. These gender differences in land size may be rooted in traditional inheritance and marital practices, which are generally disadvantageous for females. In addition to land size, informal land-titling arrangements at the time of inherited land division were more frequently observed in male-owned plots than in female-owned plots. Second, female farmers have limited access to water, which is an indispensable input for date palm tree plantations in Moroccan oases. Consequently, they sometimes purchase water for production, whereas male farmers do not face such challenges. The data also report an inequitable distribution of irrigation infrastructure: males are more likely to use drip irrigation than females. These findings suggest that ownership does not confer full land rights, highlighting the interconnectedness between water and land access.

The survey also elicits risk and time preferences using hypothetical questions. The preliminary results revealed a notable gender disparity in attitudes towards risk and time, potentially influencing crop choices. The data show that female farmers are more risk-averse than their male counterparts.

Our regression analysis relates crop choices to production resource access, attitudes towards risk, and patience. The results showed that female farmers were less likely than male farmers to cultivate date palm trees within their plots. This finding is consistent with their high water and land resource requirements, which are limited to local females. This crop-choice pattern is also consistent with females' preferences for risk avoidance, given the higher upfront water and labor costs and drought risks in date palm cultivation. Conversely, given its longer growth cycle, the observed crop choice does not align with the time preference. While further analysis to quantify the relative importance is warranted, the preliminary results suggest that the required upfront investment in time, labor, and resources may deter risk-averse females who prioritize immediate returns from date palm cultivation, despite the long-term benefits.

ARAFE The 8th International Workshop Conveners:

Prof. Kae SEKINE, Aichi Gakuin University
Assoc. Prof. Tadayoshi MASUDA, Kindai University
Assoc. Prof. Nina TAKASHINO, Ritsumeikan University

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The Association for Regional Agricultural and Forestry Economics (ARAFE), Japan, 2024.

For more information on the Association for Regional Agricultural and Forestry Economics (ARAFE), see <http://a-rafe.org/2/0> or write to arfe@nacos.com