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Agriculture, Food and Environment

**Contemporary Issues and Future of
Agriculture and Farming Villages
-Focusing on Family-run Farming-**

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Issues in quality coordination in a local vegetable “*Okabu*” trade

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Key words: Quality coordination, material defects, local vegetables, traditional food product, food system

1. Objective

The food system of traditional food product has unique quality coordination problems unlike with that of more industrial and major product.

In the case of “*Okabu*” (an ingredient root crop of local and traditional food product in Kyoto), a problem of material defects becomes serious in 2000s, especially in contract trades [1].

This paper will first clarify why the problem in quality become worse and then discuss effectual quality coordination systems for these kind of product.

2. Why the problem become serious

Commodity characteristics influence the difficulty of quality coordination in a food system. In the case of *Okabu* trades, *Okabu*'s characteristic prevents farmers from practicing the sufficient selection and from founding technical solutions for improving *Okabu*'s

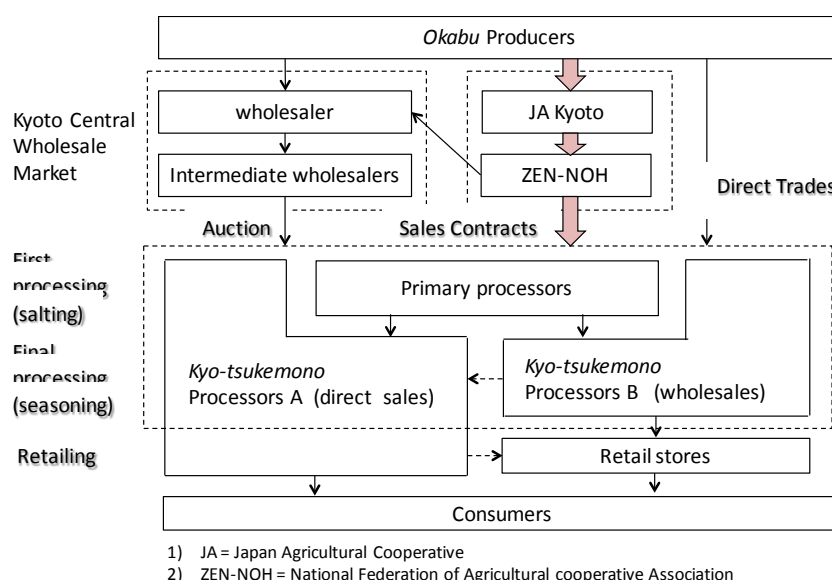


Fig.1. An outline of the *Okabu* and *Senmaizuke*'s food system

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quality.

Additionally, in the form of contract trades, the price reflects results of evaluation by *tsukemono* processors and the reasons for reductions is provided, but these are not personally .

Both in contract trades and in auction, the quality is coordinated mainly by the price. The price in contract trades and in auction, the former price is lower and fails to drive farmers lost their motivations for additional voluntary actions.

Collective actions to improve the situation like as surveys, instructions for farmers or processors are insufficiency.

3. Institutionalized quality coordination systems

The quality coordination needs more complicated and longer process than the price coordination. Therefore, the institutionalized quality coordination system seems to be effective.

The problem of material defects become serious because of lack of “place” for sharing the problem, making a program which can be effective and concrete approach.

In this case, horizontal institutions like a producer’s cooperative or processor’s cooperative do not sufficiently perform. There is a possibility that vertical institution for a commodity work more sufficiently. However, further analysis is desired for detail actions taken by this type of groups before conclude.

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Urban agriculture and agrifood system governance

— How different types of agriculture contribute to meet urban demands for food products and services?—

Nabil Hasnaou¹⁾

My research is focused on urban agriculture and questions the conventional governance of agrifood system regarding the urban food supply by farmers operating within the urban and peri-urban framework.

My research considers three levels of organizations:

- The farm level focusing on the diversity of organizational forms around cities that often result from the combination of agricultural and non-agricultural activities;
- The territorial authorities (Commune, Department, Region) were not historically so much concerned by the issues and policies regarding agricultural development. The governance was exclusively ruled by the professional organizations of the sector, but decentralization and society change regarding local food supply open new initiatives spaces, notably for their support to collective equipment provision.
- Within these local authorities the Commune has a specific role to play since it has the responsibility on land use planning and can therefore support or not the development of farming activities.

The issues I will address are:

- how different types of agriculture (business-type, socially oriented farming, family-run) contribute to answer urban demands for food products and services;

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- the relationships between farmers and the different levels of organization with a focus on the Commune within the framework of “Montpellier-Méditerranée-Métropole (MMM)”, which includes Montpellier (about 200 000 inhabitants) and 30 surrounding communes (about 400 000 inh.).

To do so, I will observe how family-run farms create links with the city through a wider bunch of services going beyond food provision (local markets, waste and fertility management, management of social and cultural activities, etc) and framed by the Local Food and Agriculture Plan developed by the MM Metropole with attention to the role of the public mass-catering sector (schools, hospital and public services in general).

A Study on the Business Development of Small to Mid-Sized Winery in Japan

— From the viewpoint of Product Portfolio and Collaboration with
Community —

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Key words: wine business, product strategy, regional agriculture, local revitalization

1. Consumption and production of wine in Japan

Wine production in Japan started during the 1900s. Since then, with the rapid economic growth and westernization of foods, wine consumption in the country has steadily increased. In 1998 when health benefits of polyphenols contained in red wine were reported, wine consumption in Japan spiked, reaching as much as 300,000kL. Despite the fall-off after 1998, the consumption resumed growing, and 2012 and 2013 witnessed Japanese drink up record-high volumes of over 320,000kL. It should be noted, however, that over 60% of wine consumed in Japan are from imported sources.

As to production, the number of wineries in Japan also has increased, and today more than 200 wineries are registered as licensed breweries¹⁾. Most of the registered wineries, however, are small- or mid-sized. Wines from the small- and mid-sized wineries are usually consumed in the area where the wineries are located. Yet, the domestic wine is considered inferior to foreign products in production cost and quality. For production of *Vitis vinifera* (grape varieties especially suitable for wine making) is difficult in Japan because of the climate condition.

Thus, the Japanese small and mid-sized wineries face tough competition against foreign wineries. For small- to mid-sized wineries to achieve sustainable management in a competitive market, a product strategy plays critical roles. In what follows, I will examine product strategies of Japanese small- and mid-scale wineries with a specific focus on their product line-up.

2. Product strategies in small to mid-sized wineries

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A product strategy refers to strategic planning and marketing to identify the company's activities, including what and how to produce, and targeting consumers. A product strategy can be manifested as a product lineup. Examining a product lineup of wines can therefore lead to a better understanding of a product strategy of a winery.

A wine product is made possible as a combination of a variety of factors, such as ingredient (i.e., grape), type, price, or target consumers. In terms of business management, a lineup of wine products as a product strategy can be better analyzed by examining, among many, three key factors constituting a product-lineup portfolio, including: 1) source of supply of grape, 2) price zone and sales destination 3) sales composition and profitability. With the lens of the three key factors, wine products of small- and mid-size wineries in Japan can be categorized into three major types as follows.

The first type of products is superior-quality wine made from *Vitis vinifera* grown in the winery's own vineyards, and can be called "Flagship" as it can squarely contribute to raising the winery's brand image and status. The second type consists of wine products bottled or packed at a winery but originally purchased in bulk from other estates. As costly brewing equipment and processes are not involved in the production while enabling stable and mass supplies at reasonable prices, sales from this line of wine products can constitute a solid financial foundation of a winery. Hence this type can be called "Cash cow." The third type comprises wine products made from grapes that are grown by local farmers. This happens when small- and mid-size wineries with limited supplies of ingredients of their own have to procure grapes even though varieties other than *Vitis vinifera* are included. This line of wine products, however, can play significant roles in building local agricultural economies revolving around wine production, thus can be called "Local contributors."

Notes

- 1) National Tax Agency "Number of licensed sites for manufacturing liquors"

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Diversification and Rural Livelihoods in Sub-Saharan Africa

—Evidence from the Literature—

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Key words: Livelihood diversification, family farming, Sub-Saharan Africa

1. Introduction

Farming in Sub-Saharan Africa (SSA) is mainly in the hands of small-scale family farmers (World Bank, 2007). Most of the family farmers derive their livelihoods partly from agriculture, utilise mainly family labour in farm production, integrating household production and consumption activities and decisions (Bosc et al., 2015); with partial engagement in often imperfect or incomplete input and output markets (Ellis, 1993).

This paper broadly examines literature relating to the nature and evolution of livelihood diversification in rural SSA, its causes and consequences for family farming, and the overall process of structural transformation.

2. Livelihood diversification and the Sustainable Livelihoods Approach

The Sustainable Livelihoods Approach has been used in understanding the concept of livelihood diversification (Ellis, 1998; Smith et al, 2001). It can be used to assess people's *livelihood assets* and how the *external environment* of social relations, institutions, organisations, policies, seasonality, trends and shocks modify access to and ability to convert livelihood assets into *livelihood outcomes* (Chambers & Conway, 1992). It takes into account that family farmers often adopt diversified livelihood and income strategies onfarm and/ nonfarm, mainly as a way to manage risk and smooth consumption, by engaging in activity portfolios with low covariate risk between activities in order to reduce vulnerability to fluctuations in agricultural production, and are subject to their external environment (Ellis, 1998; Bryceson, 1999).

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3. Structural transformation, family farming and livelihood diversification in rural SSA

The review shows that because of persistent low incomes and productivity, SSA's structural and agricultural transformation appears to move very slowly. In addition, the transformation path clearly differs from the one taken by developed economies in Europe, America or Asia. This is because population, urbanisation and rural livelihood diversification are increasing in the absence of industrialisation, and amidst declining farm sizes. Although this leaves family farming as the main employment option for the majority, there is an important role for the nonfarm sector in providing employment for those farmers that are forced to straddle between farm and nonfarm activities or to completely exit farming.

There is evidence of positive welfare impacts of livelihood diversification on income, wealth, consumption, nutrition (Bezu et al., 2012; Block & Webb, 2001), agricultural productivity (Lay et al. 2008; Ellis & Mdoe 2003) and food security (Andersson Djurfeldt et al. 2012). However, there are mixed findings about the causes and consequences of livelihood diversification on rural family farmers adopting this livelihood strategy. The poor are hindered by asset entry barriers, while those with sufficient assets can achieve successful livelihood diversification, mainly by exploiting synergies between farm and nonfarm activities (Barrett et al. 2001; Lay et al., 2008; Oya, 2007).

4. Conclusions and implications for further research

The wider implications of these findings are that increases of income and wealth based on livelihood diversification is not yet happening on a scale large enough to benefit a majority of small-scale family farmers. This is because livelihood diversification is wealth differentiated, with diverse effects on family farming and mixed outcomes regarding its impact on rural household welfare. In addition, the diversification patterns and determinants differ across geographical location and within specific contexts. Hence, due to wide heterogeneity in the rural economy, limited panel and longitudinal research on livelihood diversification, the medium to long term impacts on family farming & structural transformation in SSA remain to be fully understood.

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Roles of agricultural activities in rural family strategies

— Evidence of the importance of pluriactivity and mobility in northern department of Chinandega, Nicaragua —

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Key words: Family farming, mobility, Nicaragua, Pluriactivity

1. Issues

The principal issue of this doctoral research consists in recognizing the family pluriactivity as well as the spatial mobility of their members as structuring components for family farming and the rural territories. In this presentation, we focus on the relation between agricultural activities, non-agricultural activities and migration activities developed by families. Our objective is to document the various forms of family farming which coexist in a small-farmer area in Nicaragua and then, to identify the roles and functions assigned to agricultural activities in order to understand family farms' trajectories.

The empirical field of this research is a region located in the North of the department of Chinandega in Nicaragua with high level of poverty. Contemporary dynamics that drive this border region result in a strengthening of the diversification in non-agricultural activities and in a renewal of the mobility with recent changes in terms of intensity, pattern and incidence.

2. Theoretical and methodological approach

In order to capture these new reconfigurations, we are working on the construction of a specific analytical approach named the family multi-located system (Cortes et al., 2014) as a model centered on the socio-spatial logics of the rural families across time and places. We based our reflection on the agrarian system concept (Cochet, 2012) to adopt a systemic analysis of the livelihoods of family located in an agrarian region. To implement our approach, we also mobilize the concept of activity system (Gaillard & Sourisseau, 2009; Gasselín et al., 2014) and the one of mobility system (Cortes, 1998) to be able to

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characterize i) the family in terms of links, circulations and organization and ii) the different activities and the resources and capitals which are necessary for their realization within specific contexts.

In that way, we develop a qualitative methodology based on semi-structured interviews with 205 people (all ages) and their families (26 group family) living in the study area.

3. Results and discussion

Dealing with family farming, means attaching importance to the concept of family, which “family” are we talking about? We demonstrate that inside a family, individuals are not all engaged in agricultural activities and some migrated. This analysis reveals the importance of pluriactivity and mobility in individual and collective strategies and demonstrate that agricultural activities play various roles and functions. Indeed, we show that in some situations agricultural activities are dominant. On one hand, it reflects strong forms of insecurity where the farm is maintained only through diversification in migration or non-agricultural activities such as the sale of its labor force work. Family tries to ensure food security and to cope to sudden shock, such as crop failure or a migration debt. On the other hand, it demonstrates that agricultural activities are the center of socio-economic reproduction of the farm and the family. When non-agricultural activities are central, agricultural activities constitute either a safety net or the base of strong investment depending, in particular, the size of herd or land access.

In Nicaragua, taking into account family farming is relatively recent through Census data, but pluriactivity and mobility still lack in this official recognition. This would help designing public policies more in line with the realities

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Hierarchical Agglomeration Bonus for Private Land Conservation

Kohei Suzuki¹⁾*, Yohei Mitani¹⁾

Key words: Agglomeration bonus, Biodiversity conservation, coordination game, laboratory experiments

1. Introduction

Voluntary incentive schemes have been increasingly used for private lands conservation. However, landowner's voluntary decision leads to small, fragmented reserves, which can reduce ecological value for many species compared to large, connected reserves. Local-level coordination among landowners is required to overcome the problem.

2. Theoretical Framework

We propose a hierarchical agglomeration bonus (HAB) mechanism in which landowners' payoff depends on their decision and on whether or not successful coordination is achieved in each hierarchy. Suppose that landowners belong to a hierarchical spatial structure where three local groups of three landowners are nested in a global group. The HAB mechanism allocates the fixed total agglomeration bonus (AB) between a local-level bonus and a global-level bonus. Landowners can earn the local-level bonus and the global-level bonus when they successfully coordinate with neighbors in their local and global group, respectively. Theoretical analyses show that a locally-weighted payment scheme can facilitate local-level coordination. Furthermore, a higher portion of the local-level bonus to the fixed total AB increases the likelihood of landowners choosing the payoff dominant strategy.

3. Experimental Design

We employ a within-subject laboratory experiment design to explore the performance of the HAB mechanism. 12 sessions of 18 subjects each are conducted. All 216 subjects participated in three treatments

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with a counter-balanced, randomized order. Three treatments are determined according to a ratio of a local-level bonus to the fixed total AB: a globally weighted scheme (GWS) in which the global-level bonus exceeds the opportunity cost of high effort; a locally weighted scheme (LWS) in which the local-level bonus exceeds the opportunity cost; an equally weighted scheme (EWS) in which neither of global- nor local-level bonus exceeds the opportunity cost although the total AB exceeds the opportunity cost.

4. Results

The experimental results are consistent with theoretical conjectures. First, the LWS produces the highest probability of subjects choosing the payoff dominant strategy among all treatments. Second, the number of local communities reaching a consensus on choosing the payoff dominant strategy is much higher in the LWS than in the GWS and the EWS. Third, the number of global communities reaching payoff dominant Nash Equilibrium is much higher in the LWS than in the GWS and the EWS. Fourth, connectivity analyses shows that the LWS produces higher reserve connectivity at the local level compared to the GWS or the EWS. Finally, a random-effect panel probit regression analysis shows that our experimental results support the stylized fact in coordination games that the history of play matters.

Family-run Agropastoralism Against Desert?

— The case of *A. raddiana* woodland landscapes in south-western Morocco —

Julien BLANCO¹⁾

Key words: *Acacia tortilis* subsp. *raddiana*, agro-pastoral system, social organization, drylands, desertification, Morocco

1. Local populations and desertification challenges in Morocco

Drylands encompass more than 41% of the Earth's land surface and 38% of the global human population (MEA 2005). These regions are particularly vulnerable to desertification, *i.e.* irreversible land degradation resulting from climatic and anthropogenic factors. In Morocco, counter-desertification and forest conservation policies are designed on the basis of the regulation, or even exclusion, of human activities because of their potential deleterious effects (Aubert 2013). But few study support this assumption, especially in the Saharan ecoregion where research on the agro-pastoral systems and their influence on *A. raddiana* woodlands, the most widespread tree formation (Grouzis & Le Floc'h 2003), is lacking.

In order to better conserve this tree species and the associated livelihoods, it is crucial to better understand the organization of Saharan agro-pastoral activities and their influence on *Acacia* woodlands.

2. The family-run Saharan agro-pastoral system

An analysis of the Saharan agro-pastoral system was performed through a socio-anthropological approach in an *A. raddiana* landscape and two neighboring villages in south-western Morocco.

Our research showed that agro-pastoral activities were deeply embedded in the traditional social tribe organization. The access to the territorial resources (*i.e.* rangeland, arable lands and wood) was effectively defined from traditional social groups (inter-tribes, tribes, fractions, etc.). During wet years, people cultivate grains in flooded areas, and this activity deeply depends on the interactions within the community (especially at the tribe and family levels). These interactions pass through a pooling of productive means, and influence

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spatio-temporal pattern of the activities, while offering individual flexibility in this unpredictable environment.

3. Influence of agro-pastoral activities on *A. raddiana* woodlands

In order to assess the influence of agro-pastoral activities on *A. raddiana* woodlands, tree measurements were performed in contrasted land use modalities.

Despite occasional cultivation, the agro-pastoral plain harbored highest levels of small trees and contained biggest trees (Figure 1), and had similar tree densities than other land use. Furthermore, *A. raddiana* regeneration was significantly higher in the agro-pastoral plain. Finally, no indication of higher mortality of mature trees was found.

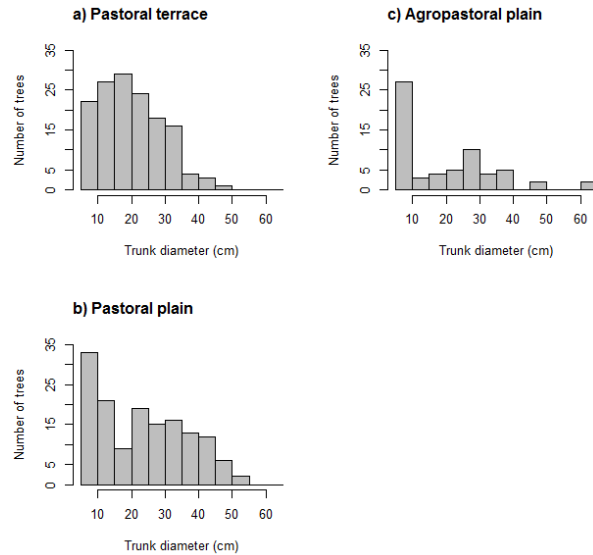


Figure 1: *A. raddiana* tree size distribution by land use

4. Conclusions and perspectives

Finally, our study indicates that agro-pastoral activities may have a positive role for *A. raddiana* woodlands, which contrasts the arguments of most Moroccan policies. Our results also indicate that such activities benefit from the flexibility allowed by the community. Given the high inter-annual variability, further study would be required to better address the Saharan agro-pastoral systems, but our results invite a rethinking of Moroccan forest policies in Sahara.

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The Development of Cattle Fattening Techniques

in Family Farm

: A Prehistory of *Wagyu*

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Key words: cattle fattening, marbling, feed, farming cattle

1. Introduction

This paper studies the development of cattle fattening in modern Japan. Japanese black cattle meat, known as *wagyu* beef, enjoys an excellent reputation for marbling in the world today. The fact is a bit strange in considering the history of cattle in Japan. In early modern Japan, beef was rarely eaten and cattle were kept only as means of production. After the restoration of Meiji, beef eating custom spread and cattle expected to also demand beef supply in addition to farming. In Japan, feedlot did not form till the mechanization of farming 1960's. Family farm stayed the center of cattle feeding thorough the concerned period.

There are few early studies on these topics. Traditionally, studies of agricultural history in Japan have concentrated on wet paddy rice agriculture, and keeping cattle has been considered only as a means of production. Therefore, these studies do not shed light on concerns related to cattle meat. Studies on food history have dealt with the beef-eating custom in modern Japan either in relation to occidental culture or in terms of dietary improvement.

2. The development of cattle fattening techniques

Shiga prefecture led the development of cattle fattening. In Shiga prefecture, it had been common to keep cattle for barnyard manure, drafting and conveying in family farm before the restoration. Already in 1910s, fattening aimed not only to increase weight but also to improve beef quality, in particular marbling. Farming cattle were classified into 3 categories according their form before fattening, thick or thin. Feed and fattening period varied with the category. That is, the condition in which cattle were kept greatly affected their worth as beef cattle. Keeping cattle for farming was

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considered as preparation period rather than be contrary to fattening. Once fattening began, breeders adjusted the variety and quantity of feed according to condition of cattle and stage of fattening. Feeding fattening cattle needed high-maintenance.

3. The profit of cattle fattening

The development of fattening brought to family farm new income, although keeping cattle brought expenditure before introduction of fattening. To keep a head of cattle, family farmer beard buying cost, feed cost and shed cost, and also had to make payment of balance when replace a head of aging cattle with new one. The additional cost required for fattening can be presumed much less than the increase of sale price. Cattle fattened in Shiga prefecture were received well by consumers in Tokyo for their marbled meat.

4. Import of cattle and carcasses

After the Russo-Japanese war, domestic cattle farming could no longer support Japan's growing demand for beef. Cattle fattening contributed to size up each carcass but number of cattle did not increased enough. Domestic cattle farming proceed to provide high quality beef, and not to provide sufficient amount of beef. The expansion of Japanese empire permitted to compensate the lack of beef by import from Korea and China.

5. Conclusion

The fattening techniques were labor intensive and resource intensive. The small scale of family was suitable for the techniques, because it permitted detailed care on each head of cattle. Marbled beef produced in this way fetched good price and family farmers gained new income.

Fattening contributed the increase in quality and imports contributed to fill increasing demand for beef.

Could agricultural diversification improve the quality of food consumption within family farms?

— Evidence from Burkina Faso—

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Key words: Agriculture, family farming, production, diet diversity, nutrition

1. Introduction

It is a common belief that increased agricultural production leads to better nutrition. However, recent studies and literature reviews show ambiguous effects of higher agricultural productions on overall diet and nutritional outcomes of the members of family farms (Masset et al, 2012; Berti et al, 2003).

These results raise questions considering that at the macro level, food security policies commonly recommend boosting agricultural production. Agricultural research and policies have focused on increasing yields, with little attention put on improving nutritional outputs (Miller, 2013).

In the study presented here, we investigate more precisely the relationship between agricultural production in family farms and the quality of food consumption.

2. Methods

A randomly selected sample of 580 agricultural households was followed over one year in Western Burkina Faso. This region was chosen because despite good average of agricultural production and surplus of cereals, children chronic malnutrition rate remains high (from national nutrition survey, stunting prevalence was 39% in 2014). To capture seasonal variations, the survey was repeated at three different periods: dry season (May 2013), lean season (August 2013) and post-harvest season (February 2014). Indeed, agricultural outputs, stocks, monetary resources or energy needs vary significantly according to seasons.

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Data included socio-demographic characteristics of the household (members who eat together), farm and agricultural production characteristics, farm and non-farm income of farm heads and women.

Qualitative 24-hour recalls were used to compute Dietary Diversity Scores (DDS) for both children 6-24 months old and their mothers. nutritional status of children has been measured using anthropometric indicators.

The originality of our study is to create a “Production Diversity Score” which computes the number of crop groups produced within the farm (cereals, tubers, fruits, vegetables...).

3. Findings and interpretations

In this paper, we investigate the correlation between agricultural household’s resources (crops, farm and non-farm income) and the DDS of women.

During the dry season, women dietary diversity was associated positively with the Production Diversity Score and the agricultural income ($P < 0.05$), but not with the number of crops (with livestock), nor with the Simpson's Index (including relative quantities of crops).

Moreover, households who produce outputs like roots, tubers or fruits have on average a better dietary diversity ($P < 0.01$), contrary to cotton producers.

Furthermore, gathering wild resources was positively related to the DDS during the first survey, when trees have their leaves (especially the baobabs). This variable is hardly ever collected and studied.

During the lean season, none of resources from agriculture has a significant relationship with the quality of food consumption, because most crops have been consumed and the farm income largely spent.

Hence, the non-agricultural income was associated to food diversity: especially the women’s income which has twice the effect of the farm heads’ income. Indeed, spending depends on gender: women are in charge of providing food and men pay for external expenses (like school or health).

Finally, age or ethnic groups have a significant effect on food consumption, which depends on traditional norms, cultural identity or preferences.

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Adoption process of Farming Method by Community Farm Enterprises

— A Case of Kohnotori-hagukumu Nouhou
(Farming Method Nurturing Oriental Storks)—

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Key words: Adoption process, Community farm enterprise, Eco-brand rice, Pioneer and Follower

1. Background and Research questions

In recent years, importance of premium-brand agricultural products, esp. rice, is growing in Japan. Ecological symbols (e.g. creatures unique to specific places) are increasingly used in branding of rice. Many farmers grow rice branded with ecological benefits for better income and preservation of the environment.

To promote a rice brand with ecological benefits, environmentally friendly farming method should be developed and adopted among many farmers in an area. According to Rogers(1990), however, in an early stage of technological diffusion, only a limited number of farmers adopt a new method. Therefore, for brand promoters, it is vital to understand:

- Who are early adopters (“pioneers”) and late adopters (“followers”) of a new method?
- What are their characteristics and reasons for adoption of the method?

Community farm enterprises (CFEs) are promising actors for promotion of eco-brand rice. CFEs are groups consisting of members (usually family farmers) of rural communities collectively engaged in farming. CFEs can manage effectively and efficiently agricultural resources (e.g. water, lands) and machinery. However, decision making at CFEs tends to be time-consuming, because there are lots of members.

Considering the above, my research questions are:

In a case of “eco-brand” rice involving CFEs,

- What are characteristics of pioneer CFEs and follower CFEs in adoption of a new method, respectively?
- What are motivations and rationales for pioneers and followers?
- What are other factors affecting CFE’s decision?

Practical contribution is that this study can provide promoters of eco-brand rice with insights about pioneers and followers of farming method. Furthermore, academic contribution is that this study can fill the lack of knowledge about technical adoption processes in CFEs on which research is limited.

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2. Theoretical framework and Research Methods

I constructed the model of technical adoption process, referring to Monma(1999), Asai(1999), Yamamoto(2006). I set two processes: process of recognizing motivations and process of making a decision. What I analyze are that:

Process of recognizing motivations:

- 1) What kind of attributes of farm operations define the criteria to evaluate benefits of a new method (philosophy of agriculture)?
- 2) What kind of CFE members' philosophy of agriculture define the evaluation of benefits?
- 3) What benefits of a new method influence CFE members to recognize motivations?

Process of making a decision:

What kind of factors and/or actions lowering uncertainties?

This study focuses on 'Kohnotori-hagukumu Nouhou' (farming method nurturing Oriental Storks) in Toyooka city (Hyogo prefecture). This method consists of flooding paddies in winter, early flooding before rice-planting to grow feeds (e.g. frogs, fish) for storks and reducing or no use of agricultural chemicals, etc.

JA (Japan Agricultural Cooperatives) collects rice and sells with the label 'Kohnotori-hagukumu Okome' (rice nurturing storks) with premium prices.

I had interviews with the leaders and some members of all the CFEs (9 enterprises) that employed KHN in 2014. Using the hearing data, I analyzed above. 9 CFEs are categorized into "Pioneers" (3 CFEs) that adopted KHN before 2005 and "Followers" (6 CFEs) that adopted KHN after 2005.

3. Conclusions

Pioneers tended to be retired/part-timers, closer past experience with storks, motivated by storks. Also, the large financially stable CFE could afford to adopt. On the other hand, followers are tended to be interested in profitability, but partially in storks, too. Availability of information on KHN lowered uncertainties.

Questions for future research are that:

- 1) Analyze "expansion" processes after the adoption of a new method
- 2) Examine similar cases of eco-brand rice in other places and other types of farming entities (e.g., family farm).