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Multi-Level Governance of Agricultural Landscapes:  
Role of Value Perspectives on Farmland Tenancy Arrangements in Japan

農村景観の多層的ガバナンス:  
日本の農地貸借における価値観の役割

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**Abstract:**

Agricultural land abandonment has profound implications for sustainability of the society. It affects food security, biodiversity change, rural economy and cultural heritage. In an attempt to address the farmland abandonment and revitalize the farming sector, the Japan's government has been promoting tenancy arrangements through various incentive and management programs, including a new cross-level mechanism for tenancy coordination, called the Farmland Bank (FB) program. By employing an analytical framework informed by multi-level governance (MLG) and relational values of nature, this study examines how different value perspectives to farmland interplay in the making of tenancy arrangements, and explores challenges and opportunities for future farmland management. An in-depth analysis of value perspectives and farmland tenancy arrangements — including a systematic review of policy documents and scholarly literature, descriptive analyses of statistics, and semistructured interviews with farmers, non-farming landowners, government officials, scholars, and representatives of other relevant institutions— was conducted with a focus on the adoption of the FB program in two communities in Ishikawa Prefecture within the context of land-extensive rice farming. The focus on the two communities reveals that farmers and landowners have accepted the FB program differently depending on the ways and levels of their attachment to farmland. Those in one community fully adopted the program to build on communal attachment to farmland for continuous farmland use and management. Those in the other limitedly accepted the program to preserve personal attachment to farmland mostly in the unit of family and retain individual flexibility of farming. It also finds that farmers' and owners' attachment to farmland, which is not limited to economic values but includes social and cultural values, has driven their long-term commitment to farming and collective management of agricultural landscapes. Further attention to subjective and cultural aspects of farmland would complement the current tenancy model that skews towards its material and economic aspects so as to facilitate sustainable management of agricultural landscapes hinging on productive farmland use.

## 概要:

農地の耕作放棄は、食料の安全、生物多様性の変化、地域経済、文化的遺産などの側面から、社会の持続性に重大な影響を与えている。耕作放棄に対処するとともに農業セクターを再生するため、日本政府は様々な奨励・管理事業を通じて農地貸借を促進し、最近では新たに多層的に農地貸借を調整するメカニズムとして農地中間管理事業を導入した。本研究では、多層的ガバナンスおよび自然の関係的価値の概念に基づいた分析的枠組みを活用し、農地貸借の過程において農地に対する異なる価値観がどのように相互作用するかを検討し、今後の農地管理における課題と機会を明らかにすることを試みた。土地利用型の水田農業の文脈において石川県の二つのコミュニティにおける農地中間管理事業の導入に焦点をあて、価値観と農地貸借に関する政策文書や学術文献のレビュー、記述統計学的分析、半構造化インタビュー調査（農業者、非耕作地権者、行政官、学識者、そのほかの関係団体の代表者・職員を対象）を含む詳細調査を実施した。二つのコミュニティに焦点をあてたことにより、農業者や地権者は、農地への愛着あるいは関心の有り様や程度によって異なる形で農地中間管理事業を導入していることが明らかになった。一つのコミュニティの農業者・地権者は、概して農地に対する地域社会の集団的な愛着・関心を基軸として農地の活用を目指し、事業を広範囲に導入していた。もう一つのコミュニティでは、農業者・地権者が、主に家族単位で私的な愛着・関心を維持し、農業の個人的な柔軟性を確保することが優先され、事業は限定的に導入されていた。また、経済的価値にとどまらず、社会的・文化的な価値を含む、農業者・地権者の農地に対する愛着・関心は、農業および農村景観の管理への長期的なコミットメントを促すことも明らかにした。以上から、生産的な農地利用に依拠する農村景観の持続可能な管理を促進するため、農地の物質的・経済的な側面に傾斜した現在の農地貸借モデルを補完するため、農地の主観的・文化的な側面により注目することが重要であることが示唆される。

## 1. Introduction

Agricultural land abandonment has resulted from socio-economic, political and bio-physical changes often in association with globalization and urbanization (Benayas et al. 2007). In Japan, the ratio of abandoned farmland has more than tripled since the late 1980s, whereas the total area of farmland has decreased by 26% since the early 1960s.<sup>1</sup> This trend has posed challenges of food production, biodiversity change, rural economy and cultural heritage loss. Food self-sufficiency has fallen by half to below 40% in the caloric terms since 1960, and has yet to be recovered since 2006 (OECD 2013; MAFF 2017a). In consideration of potential food security along with these trends, the government has set the national target of raising the current level to 45% by 2025 in the 2015 Basic Plan on Food, Agriculture and Rural Areas (MAFF 2017a). While sound management of agricultural landscapes in productive farmland use plays a central role offer significant ecological and cultural services for urban population, rural communities typically with decreasing and aging demographics have confronted labor shortage, decrease in available public services, and damages on agricultural produce caused by wild animals and invasive pest species (MAFF 2013; Takeda, et al. 2013).

In an attempt to reverse this trend and revitalize the farming sector, the government introduced a new program to promote tenancy arrangements with an intermediary mechanism in 2014, called the Farmland Bank (FB) program. This program builds on several successive models that have emerged since the 1970s, but originates from the postwar land reform since the late 1940s. As a first step of the agrarian reform following the end of World War II, land reform was conducted between 1947 and 1951 to dismantle the prewar landlordism and establish a new institution of farmland ownership. The government redistributed farmland by purchasing land from landlords and selling it to tenants at an extremely low price (Honma 2010). This resulted in the dominance of numerous small owner-farmers throughout the country, with 90% of farmland owned by owner-farmers owning 1 ha on average (Ge 2009; Shimizu 2007). This outcome with the feature of protection of small owner-farmers was institutionalized as Agricultural Land Act (ALA) in 1952, forming the first model equipped with the state control of individual tenancy arrangements.

This first model has branched into two streams since the 1970s. On one hand, the state control of individual tenancy contracts has been carried over as the stream of a “leasehold right” associated with the legal renewal of a tenancy contract (Hori 2011). This stream builds on ALA that prescribes the system by which a contract shall be renewed with the same terms as before unless one party officially reports to another in a certain period prior to the end of a contract term. ALA has maintained this legal renewal and other conditions advantageous for tenants to hamper the resurgence of landlordism, although it has been repeatedly amended since 1962 to relax the restrictions of tenancy (Arimoto and Nakajima 2010; Imamura 2003). On the other, the stream of a “use right” free from the legal renewal has emerged to promote tenancy since the mid 1970s (Honma 2010; Yokoyama 2008). This responded to the increase in informal tenancy contracts through which farm management became fragmented involving scattered small paddies without the legal basis, along with the socio-economic and demographic changes in the agrarian communities after the high economic growth from the late 1950s (Kurumizawa 2016). The system of a “use right,” which ceases to be in effect upon the completion of a contract, allows owners to claim back their farmland without the state’s approval, enabling

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<sup>1</sup> Based on the Agriculture and Forestry Census by the Ministry of Agriculture, Forestry and Fisheries (MAFF), the ratio of abandoned farmland (i.e., the proportion of abandoned agricultural land to the sum of managed arable land and abandoned agricultural land) increased from 2.9% in 1985 to 10.9% in 2015, while the area of abandoned farmland increased from 135,000 ha in 1985 to 423,000 ha in 2015. Based on the Arable Land and Acreage Statistics by MAFF, the total area of farmland decreased from its postwar peak of 6,086,000 ha in 1961 to 4,496,000 ha in 2015.

them to lend their farmland to other farmers without fear of losing the de-fact ownership of land.

Finally, the "use right" stream has brought the FB program into emergence as the latest model. The FB program started in 2014 with the establishment of a FB at each of the 47 prefectures across the country. The major goal of the FB program is to consolidate farmland and aggregate farm management into large-scale farming for better economy of scale. To expedite farmland aggregation, the program grants a "interim management right" to the FBs for direct interventions in tenancy contracts, and thereby enables the FBs to make a direct contract with owners and tenants to facilitate tenancy arrangements regardless of owners' preference and accessibility to tenants. Prior to the introduction to the FB program, ALA was amended in 2009 to allow business corporations to enter into the farming sector from other sectors, Following this amendment, the program gives more power to the prefectural authorities to bring new actors into tenancy from border spatial and institutional scales, including business corporations and outside farmers (Hori 2012; Takahashi 2013). The program also allows the FBs to delegate some administrative responsibilities to municipalities that are more familiar with local stakeholders.<sup>2</sup> Furthermore, the government provides farmland owners with subsidies for participation in the program along with the tax penalty for farmland abandonment.

With a focus on farmers' responses to the FB program, this study examines how different value perspectives to farmland interplay in the making of tenancy arrangements, and explores challenges and opportunities for future agricultural landscape management. Some policy makers, scholars and local managers are calling for farmland consolidation and expansion of farming for an economy of scale (Honma 2010; Yamashita 2009). Others advocate environmental and cultural contributions of farmland to revitalizing rural communities (Harada 2010; Matsumoto 2005). Research on restoration initiatives and management programs has mostly focused on the benefits that agricultural landscapes provide for human wellbeing as a result of sound governance. Not only objective values of farmland, however, it is indispensable to understand how farmers, as primary decision makers for private farmland use, subjectively value farmland to engage in farming and farm management. Historically farmers have exerted political pressure to nurture the policies protecting their vested interest in farmland through the "iron triangle" consisting of the leading party, the bureaucrats and the interest group of farmers (Mulgan 2005). At the same time, those who engage in farmland management in practice have been providing stewardship to conserving farmland and ecosystems often in face of cost-benefit trade-offs in farming (Chouinard et al. 2008). Besides few empirical studies on the adoption of the FB program from the farmer's perspectives, many studies on agricultural land governance are less vigilant about how farmers' perspectives interplay in the process of governing farmland.

With a goal to examine the interplay of farmers' value perspectives to farmland in the making of tenancy arrangements, the study investigate how and why farmers have adopted the FB program. Drawing on the case studies of two communities, it aims to address the following questions: 1) how have farmers reacted to the FB program?; 2) why and why not have farmers accepted the program?; and 3) what are plausible challenges and opportunities in governing farmland for future agricultural landscape management? The next section describes the methodological approach to the study. Then the results from the semi-structured interviews with farmers and landowners in the two communities are presented and discussed. In conclusion, the findings are summarized to draw out challenges and opportunities for future agricultural landscape governance.

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<sup>2</sup> The local authorities mostly engage in various administrative tasks including matchmaking at the local level, whereas they are responsible for making a Community Agricultural Master Plan by which tenants should be authorized for tenancy contracts under the FB program (Kobari 2015).

## **2. Methodology**

### **2.1 Analytical framework**

The study draws on multi-level governance (MLG) as an analytical framework to provide new insights on how farmers as social agents have interacted with other agents in both public and private sectors. Embracing the ‘task-specific jurisdictions’ of intersecting actors in addition to the ‘general purpose jurisdictions’ with formal governmental actors, the MLG helps to grasp a complex pattern of public and private institutional relations and to account for the diffusion of authority within a state in governing farmland (Hooghe and Marks 2003). The MLG also offers a lens to expose multi-level mismatches/tensions between material and subjective aspects of governance (Stephenson 2013). At the same time, it directs attention to identity, or an expression of community, as a causally-powerful factor of formation and transformation of governance (Hooghe and Marks 2009). In addition, complementing the MLG with the ‘principal-agent’ perspectives, the study attends to resource asymmetries to provide an explanation to character and operation of agents’ powers that have led to transformation of the tenancy model (Blom-Hansen 2005). With the MLG framework, the study analyzes the changes in both political and social institutions in governing farmland at the household, community, municipal, prefectural and national levels, along with the change in the tenancy model.

The analysis of the farmers’ responses of the FB program is explored with the change in their value perspectives to paddy farmland based on the three types of values: 1) intrinsic values (inherent to nature, independent of human judgement); 2) instrumental values (direct and indirect contributions of nature’s benefits to achieving a good quality of life); and 3) relational values (imbedded in desirable relationships, regardless of tradeoffs to obtain nature’s benefits) (Díaz et al. 2015). Instrumental values can be readily linked to economic values and thus be effectively evaluated and communicated through economic valuation, whereas relational values depart from an economic valuation framework and are thus hard to evaluate (Chan et al. 2012). Yet, scholars have been increasingly aware that a mere focus on either instrumental or intrinsic values without complementary attention to relational values may be neither appropriate nor practical to deal with complex human-environmental systems and may even inadvertently promote worldviews at odds with fair and desirable futures (Wegner and Pascual, 2011; Chan et al. 2016). This study specifically attends to relational values besides intrinsic instrumental values attached to farmland.

### **2.2 Study sites**

The study focuses on two farming communities in Ishikawa Prefecture located on the west coast side of the central region of Japanese archipelago. The two community are distinct in terms of geographic and demographic features. One community, anonymously called N District, is located in the north region of the prefecture, Noto, which has hilly and mountainous topologies less favored for agricultural production and distribution and has experienced sharp population decline and aging as well as severe agriculture abandonment. The other, anonymously called U Village, is a part of the southern region, Kaga, that encompasses alluvial plains formed with the rivers running from the steep mountains, and shows moderate demographic shift and less severe farmland abandonment. Despite these distinctions, both communities are situated within the context of land-extensive rice farming.<sup>3</sup> Rice production has represented social, cultural and

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<sup>3</sup> The share of rice paddy farmland in the cultivated acreage of Ishikawa Prefecture is larger than the national average. The area of rice paddies accounts for 54.4% of the cultivated acreage that constitutes 12.0% of the national landmass (MAFF 2017b). Accounting for 83.3% of the cultivated acreage and constituting 8.3% of the prefectural area as of 2016(MAFF 2017b), rice paddies spread across two geographically distinct regions lying north and south, between which the urban area extends.

ecological virtue of Japan for long, but is no longer a sanctuary for agricultural trade. The choice of the communities is based on contrast of the adoption of the FB program: one in the north (N District) fully implements the program with full financial support by the government, the other in the south (U Village) remains with conventional tenancy arrangements without much government support.

***N District:***

N District is located in the central part of Noto, sitting in the intermountain area of the upper river. Consisting of ten villages (i.e., a village is a unit of neighborhood association, called *mura* or *shuraku* in Japanese), the district has been dominant with part-time farm households engaging in rice cultivation on terraced paddy fields and sometimes vegetable farming. It has experienced rapid population decrease and aging and has been confronted with the increasing abandonment of houses and farmland.<sup>4</sup>

Among ten villages federated as a community in both administrative and customary terms, seven villages have adopted the FB program since 2015, in which the land improvement initiative started in 2013. The implementation of the FB program often accompanies the land improvement work that renders infrastructure investment into farmland through land consolidation and irrigation improvement. As the land improvement is subsidized only if it ensures large-scale farm management, it appropriates physical conditions for large-scale farming, for which use rights are reallocated through the FB program. In N District, the initiative for land improvement built on the communal farming that has developed based at one of the villages since the late 1970s. The organization of communal farming has served as a major host of the FB program to engage in large-scale farming across the seven villages. This organization originates from a group of six large family-run farms that was self-organized for the shared use of agricultural machines. It has steadily expanded its farm scale through tenancy contracts with the owners who had become incapacitated for farming due to aging or other priorities for living since the 1970s while the community has experienced the decrease in farm population and the increase in the share of part-time farm households (Kano 2000). The group of large family-run farms was incorporated as a legally-qualified farm entity in 1987, whereas it started in 1983 to engage in processing and sales of agricultural produce besides cultivation.

The program adoption resulted from the local initiative for reorganization of communal farming together with the land improvement, and at the same time from the direct invitation to the program by the prefectural government. As the bottom-up pathway, the Hometown Development Association (HDA), a federation of ten village associations, served to coordinate at the local level and liaise with the prefectural government. To overcome the physical constraints for farming, the HDA stepped forward in planning of land improvement in 2013. In parallel, it began to facilitate reorganization of communal farming from one-village basis to the community extent to cope with farm labor shortage and land abandonment. This led to the incorporation of the legally-qualified Agricultural Producers' Cooperative Corporation of Farm N in 2015 as a form of business corporation to ensure collective decision-making on farm management. On the other hand, as the top-down pathway, the prefectural government approached the HDA at the end of 2014 to call for an application to the program. With the knowledge about the combined local initiatives for incorporation of communal farming and land improvement, the prefectural

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<sup>4</sup> The population decreased by 60% over the past 60 years, a decrease of 1,442 (139 households) (i.e., from 2,390 (468 households) in 1954 to 948 (329 households) in 2014) (NHDA website).

government saw the potential of the community to adequately implement the program.<sup>5</sup> Under the coordination by the HDA, the seven villages, which were better geographically conditioned for farming, were adopting the program and in return received collective funds to be used for local agricultural development. As of late 2016 when the semi-structured interviews were conducted, the combined initiatives were underway in four villages, whereas they were at the planning stage in three villages.

### ***U Village:***

U Village, corresponding to one village (i.e., *mura* or *shuraku*), is situated in the central part of Kaga Plain. Standing on the alluvial fan of a river, it forms part of the major rice-producing region in the prefecture, while providing well-drained soil applicable for a variety of agricultural produce owing to a series of irrigation development projects (Hokuriku Regional Agricultural Administration Office 2017). It has experienced urbanization since the rapid economic growth period of the 1960s, transforming from an agrarian community to the suburban one. Non-farming population remarkably increased from 15% in 1960 to 87% in 2015, resulting from the decrease of full-time farmers since the 1960 and part-time farmers since the 1990s.<sup>6</sup> The population has slightly increased in recent years (3.7% increase between 2005 and 2015), but the community with remaining farmland has been faced with shortage of successors in the farming sector.<sup>7</sup>

Under these demographic changes, farmland in U Village has been aggregated to the management by a handful of large farms through tenancy arrangements, involving the farmland in the neighboring S Village. The precedence of these tenancy arrangements for the past four decades led to the limited adoption of the new FB program. The land improvement project in the 1990s also aided to the progress of tenancy arrangements. Besides solving water damages that frequently occurred due to the location between two tributaries, land improvement helped to improve farm efficiency and to promote large-scale farming. Although all the tenants were independent farms mostly on a family-run basis, the initiative of communal farming emerged for crop conversion on the improved land in the 2000s. For communal farming, the Farming Union was organized in 2006 as an informal group to share the use of agricultural machines and collectively engage in barley farming, taking advantage of government subsidies. This initiative was built on the longstanding Production Association consisting of all the households of farmland owners (approximately 80 farm households) in the village, which historically served to pursue collective farmland maintenance activities and coordinate various agricultural development projects including the land improvement project. After the formation of the Farming Union, the farmland became aggregated largely into the two groups: 1) a few large farmers independent from the Union, and 2) small and medium farms affiliated with the Union. The village adopted the FB program in three cases where three landed farmers contracted out their farmlands to the FB to be borrowed by local tenants in the village.

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<sup>5</sup> The prefecture government was urged to further promote the program, with the national government's announcement in October 2014 to prioritize budget allocation for land improvement projects particularly to the regions that adopt the FB program in combination with land improvement projects (MAFF 2015).

<sup>6</sup> The population of full-time farmers radically decreased between the 1960s and the 1990s. Part-time farmers, many of whom relied on *Kutani-yaki* industries (i.e., traditional porcelain specifically famed of Kaga region) until the mid 1990s, decreased along with the decline of the *Kutani-yaki* industries that used to allow for local employment and part-time engagement in farming.

<sup>7</sup> The population of Ushijima Village increased from 454 (129 households) in 2005 to 471 (144 households) in 2015 (Statistics Bureau, Ministry of Internal Affairs and Communications 2006, 2016).

## **2.3 Data collection and analyses**

Data were collected through a systematic review of policy documents and scholarly literature, a descriptive analysis of statistics, and semistructured interviews with farmers, non-farming landowners, government officials, scholars, and representatives of other relevant institutions (e.g., agricultural cooperatives, agricultural committees). Following the preliminary fieldworks in Ishikawa Prefecture (conducted in July 2014, July 2015 and August 2016), I conducted the semi-structured interviews between November 2016 and January 2017, which were followed up in August 2018 to updated the study. The interviewees were identified based on a snowball sampling strategy beginning with a few initial key contacts that were introduced mainly by prefectural government officials and a few scholars from a university in the prefecture. The interviewees were introduced to the survey's objectives, nature and scope and then were asked to suggest acquaintances for interviews. Under the Toyota Foundation Research Grants Program (May 2017 - October 2018), I conducted the follow-up interviews with key informants in August 2018, while pursuing the literature review and the participation in academic conferences.

For the two case studies, semi-structured interviews were conducted with 26 individuals in N District and 24 individuals in U Village, both of which included farmers and non-farming farmland owners. Interview schedule consisted of four sections: 1) context providing background on respondent's roles in tenancy arrangements; 2) status and drivers of respondents' involvement in tenancy arrangements and farmland management; 3) respondent's value perspectives to farmland; and 4) challenges and opportunities of which respondents were concerned. Besides three and four farmers from neighboring communities respectively for N District and U Village, semi-structured interviews were undertaken with 12 farmers in another set of two contrasting communities at a different municipality of the prefecture to corroborate the findings from the two cases of focus. Furthermore, to contextualize the two cases and deepen the understanding of the construct and mechanism of the FB program, additional semi-structured interviews were undertaken with 61 stakeholders and 23 farmers in other sites of the prefecture.

The interview survey employed a face-to-face semi-structured format. The interviews, which took from 80 to 160 minutes, were mostly conducted with a single respondent except for several cases where a few other colleagues sat beside the main respondent. Most interviews were audio-recorded with the permission of interviewees under the condition that all information be held as confidential and anonymous. The data analyses of the interviews were based on qualitative interpretation of the interview transcripts.

## **3. Results**

### **3.1 N District**

N District, involving ten villages, collectively adopted the FB program in seven villages in combination with the land improvement projects in the same area. In return, the participating villages received collective funds to be used for agricultural development at the community. At the end of 2016, the combined initiatives were underway in four villages, while being planned in three villages. Among 26 respondents, 16 had determined their ways of participation in the program in the area where the initiatives were underway, and 10 were unsettled about their participation given the initiatives were only preliminarily planned (See Table 3.1). The former included those who planned to engage in communal farming by lending their land to the FB, and those who planned to continue independent farming by borrowing land from the FB. The latter included those who preliminarily decided their ways of participation in the program, and those who were indecisive about whether and how to participate.

Table 3.1 Status of respondents' decision-making on participation in the FB program at N District

Initiatives	Farm Management		Lend to FB	Borrow from FB	Affiliations	Roles & Responsibilities	Reward
<b>Underway (n=16)</b>	Communal (n=13)		Yes (n=13)	Yes (as a cooperative) (n=12)	Farm N	• Board of directors (n=7): Capital subscription, right to vote, execution of operation for farm management (planning & management, cultivation — including payment for rent, collective farmland management)	Rent, compensation for directors, (wage)
						• Other cooperative members (n=5): Capital subscription, right to vote, farming support, collective farmland management	Rent, (wage)
				No (n=1)	NA	• Non cooperative member (n=1): Collective farmland management	Rent, (wage)
	Independent (n=3)		Yes (n=1) No (n=2)	Yes (as an individual) (n=3)	Individual farm entity	• Individual farmers: Independent farm management, payment for rent, (collective farmland management)	Profit
<b>Planned (n=10)</b>	Tentatively decided (n=5)	(Communal) (n=3)	(Yes) (n=3)	(Yes - as a cooperative) (n=2)	Farm N	• (Either board of directors or other cooperative members - pending)	Rent, (wage)
				Undecided (n=1)	Undecided	• (Either cooperative members or not - pending)	Rent, (wage)
		(Independent) (n=2)	(No) (n=2)	(Yes - as an individual)(n=1)	Individual farm entity	• Individual farmers: Independent farm management, payment for rent, (collective farmland management)	Profit
				(No) (n=1)		• Individual farmers: Independent farm management, (collective farmland management)	
	Undecided (n=5)		NA	NA	NA	NA	NA

The respondents in the area with the initiatives underway were to participate in the program either by: 1) communal farming or 2) independent farming. Communal farming was basically managed by Farm N, a cooperative corporation. With a right to vote to plenaries, all the cooperative members of Farm N could participate in decision making on farm management. Farming practices were led by the board of Farm N, but with the contributions from other villages. Crop cultivation was managed at each village under the leadership of one member from the board, while Farm N recruited either cooperative or non-cooperative members of villagers on an as-needed basis to have them engaged in cultivation practices in return for an hourly wage. Farm N engaged in maintenance of cultivated land (e.g., weeding on levees, water management directly associated with the land), but organized a group at each village with the involvement of villagers to maintain the expanding cultivated land. Besides, following the customs, the villagers, whether they were part of Farm N or not, collectively engaged in maintenance of large agricultural facilities (e.g., cleaning of water channels, weeding on farm roads), and if they participated, were paid wages for contributors under another government subsidiary program. Thirteen respondents who decided on retirement from independent farming, engaged in communal farming variedly according to their roles and responsibilities in Farm N.

Three respondents decided to continue their individual farm management independently from Farm N. One had been actively expanding the farm scale across several communities, while two others were not. The former planned to continue independent farming by consolidating the land into one village as an 'approved farmer' for the village (i.e., a farmer qualified to borrow farmland from the FB as listed in the Community Agricultural Master Plan for a certain village). One of the latter, who had moved back from a city and started vegetable farm in 2012, planned to continue farming on the same scale. Another of the latter, who had been farming neighbors' land besides his own land, planned to halved the farm area to limit it to his own land, and to be subcontracted with another independent farmer for his plausible retirement in the near future due to his age.

In the area where the initiatives were planned, five respondents had decided, and other five were yet to make a decision about their involvement in the FB program. Among those who decided, three respondents with better access to the information on the initiatives planned to lend land to the FB, while two as full-time farmers planned to continue independent farming. One of the latter, who as an incorporated farm had been expanding his rice farm across different villages, planned to consolidate his tenanted land into his residential village and to further expand his farm scale after land improvement. The other of the latter, who had been organically growing vegetables for sales purposes, was planning to ask for exclusion of his vegetable farmland (existed cohesively, not scattered) from land improvement in order to secure organic soil for vegetable farming. The rest of the respondents in this area were indecisive. They had been farming their neighbors' farmland in addition to their own farmland, and were capable of continuing independent farming for the time being, but wondering whether to continuously do so for another decade under the FB program.

The motivations for respondents' participation in the initiatives reflect the following components: 1) intergenerational responsibility; 2) social relations; 3) economic dependency; 4) technologies and physical strength; 5) spiritual fulfillment; and 6) attachment to rice. First, intergenerational responsibility for succeeding farmland was a priority for most respondents. Many landowners expressed their sense of responsibility to hand down farmland as a 'living property' to the next generations, and thus availability of heirs at the household level influences their choice for communal or independent farming. Yet, the interviews suggested the sense of responsibility was changing over generations, as younger respondents expressed much lesser sense of responsibly compared to older ones. Second, maintenance or improvement of social relations was another determinant. Many respondents expected tenants to socially engage in the community, for which communal farming offered a platform for owners to be involved in farming practices and collective decision making. The attachment to the community also appeared to vary across generations. Third, economic dependency on farming determined the mode of participation for some respondents. Those farming as a primary source of income chose independent farming, but many others relying on other jobs or pension let others to engage in farming. Forth, land improvement discouraged small farmers with limited mechanical capacity to continue independent farming, while allowing larger farmers to take advantage of scale with additional subsidies. In addition, the FB program promotes a longer-term contract (e.g., a 10-year contract) and discouraged elder farmers to take responsibility for tenancy. Fifth, gaining spiritual fulfillment from farming motivated some respondents to keep engaging in farming in practice. Finally, some owners expressed their attachment to rice produced specifically from their own land, and such attachment made them hesitant to be involved in the program through which the previous in-kind rent changed to monetary one. Nevertheless, Farm N followed the

customary practice to label sacks of rice with identification of each block of farmland for sales to owners to accommodate owners' attachment to rice to some extent.

Under the status of the community where farm management was in transition, the interviews alluded to sooner settlement of farm management as a priority to be addressed. In this regard, many respondents raised a concern about farm management as a challenge for the immediate future. Land improvement allowed for improvement of farm productivity through large-scale, labor-saving farming. It also technically eased maintenance practices with the improvement of irrigation and other agricultural facilities. However, farm management on a much larger scale as a corporation rather than as a family-run farm was new to most farmers in the community, and this made many respondents concerned about securing profitability also on the current trend of rice depreciation. In particular, the previous tenancy arrangements, including rent payments, were made through face-to-face communications on an individual basis, and such communications sometimes brought about business talks leading to the next year business. Yet, the new tenancy arrangements through the FB, including monetary rent payment through bank account, no longer gave such an opportunity for 'chitchats' albeit systematic and less cumbersome, resulting in no room for similar entrepreneurial activities. Furthermore, as expressed through the interviews, despite economic incentives such as hourly wages in return for their practical contributions, many villagers were becoming less motivated in farming practices.

For further future, the respondents expressed the anxiety about successors to farming. The current demographic trend of aging and shrinking may inevitably lead to labor shortage for farming. This trend might be exacerbated by the discontinuity of farmers' knowledge of farming and their attachment to farmland. First, certain technical and practical knowledge of farming is associated with specific local environments. However, due to the decreasing and aging farm population, imparting such knowledge became challenging. At the same time, few farmers, not only local farmers but also even those from outside, experienced farming on a large farmland such as that enlarged to over 1ha with a hilled topology. Second, along with the disengagement from farming, owners' motivations for taking care of farmland was being lost. Some of the respondents suggested that if people would disengage from farming and then lose their attachment to their land and community, they might move out from the community to cities with better job opportunities and other public services to more easily live.

### **3.2 U Village**

U village had three cases in which three landowners participated in the FB program to have their land cultivated by other local farmers. Three owners lent their farmland to the FB upon their farm retirement, and in return received the retirement funds depending on the area of leased farmland (see Table 3.2). The FB that leased their land contracted it out to three different farmers, including one incorporated farm independent from the Farming Union, and two family-run farms affiliated with the Union. The rent was settled depending on the conditions of farmland such as the status of land improvement, original yield, sizes, figures and access to roads. However, this tenancy was informally rearranged to have the land cultivated by four different tenants, additionally including one family-run farm not appeared in the official contracts (see Tables 3.2 and 3.3). The one, officially unrecognized tenant, was 73 years old, and was not registered as a certified farmer (i.e., *nintei-nogyosha* in Japanese). Certified farmers are those who develop their farm management plan to improve agricultural productivity, and if it meets the municipal plan, are certified and eligible for several government subsidies. Even without this certification, it was not technically impossible to borrow farmland from the FB, but given his age and certification status, he dared not become an official tenant for the 10-year contract under

the program. Furthermore, the other two family-run farms, who were officially recognized, informally shared their responsibility for tenant farming in consideration of their mechanical and physical capacities.

Table 3.2 Status of the FB program adoption in U Village (January 2017)

Case	Owners	Farmland	Retirement funds	Tenants		Contract Start Date	Contract Life	Rent
				Official	Actual			
A	Owner T	3.2ha	JPY 700,000 (Approximately USD 6,220)	Union farmer I (1.1ha)	Union farmer I	3/1/2015	10 years	JPY9,000/0.1ha (Approximately USD 80.00/0.1ha)
				Union farmer K (2.1ha)	Union farmer K			
					Union farmer M			
B	Owner K	1.2ha	JPY 500,000 (Approximately USD 4,440)	Incorporated farm T (1.2ha)	Incorporated Farm T	5/1/2015	10 years	JPY2,000 or 7,000 /0.1ha (Approximately USD18.00 or 62.00/0.1ha)
C	Owner I	3.0 ha	JPY 700,000 (Approximately USD 6,220)	Union farmer I (3.0ha)	Union Farmer I	5/1/2016	10 years	JPY0-7,000/0.1ha (Approximately USD0-62.00/0.1ha)
					Union farmer K			

Table 3.3 Tenants under the FB program in U Village (January 2017)

Formal and Informal Tenants					Farm Management			Land leased from FB	
Tenants	Age	Affiliation	Certification status	Cultivated area	Management	Engagement	Official	Actual	
T	Formal	64	Independent	Certified	50 ha	Incorporated	Full-time	1.2 ha	1.2 ha
I	Formal	59	Union	Certified	N.A. (>8ha)	Family-run	Part-time	4.1 ha	1.2ha
K	Formal	65	Union	Certified	6ha	Family-run	Full-time (post-retirement)	2.1 ha	3ha
M	Informal	73	Union	Uncertified	2ha	Family-run	Full-time (post-retirement)	-	1ha

The rest of farmland in the village was managed by either owners themselves or others through the direct contracts between owners and local farmers based on kinships or communal relations. Besides the consignment contracts for some of the key rice farming practices (i.e., plowing, rice planting, and mowing), the direct contracts for tenancy were made in the following three forms: 1) the use right setting under the Act on Promotion of Improvement of Agricultural Management Foundation (PIAMF Act); 2) the leasehold right setting under the Agricultural Land Act (ALA); and 3) informal contracts. The study hardly revealed the share of the different types of contracts at the village due to the privacy policy in addition to the informality of the third form. Nonetheless, the interviews suggest that many farmers preceded tenancy arrangements mostly

through the use right setting or the informal contracts, while the adoption of the leasehold right setting was minimal.

The farm households of 23 respondents consisted of three types: 1) those independent from the Farming Union; 2) those affiliated with the Farming Union; and 3) households holding farmland but not engaging in farming practices (see Table 3.4). The results from the interviews show that the farmland in the village was cultivated on halved by two groups: 1) a half by two large-farmers independent from the Farming Union; and 2) the remaining half by small or middle-sized family-run farmers affiliated with the Union where the members collaborated on barley cropping but not for rice farming. The latter included some who engaged in tenant farming and others farming on their own land without tenancy. Farmland maintenance associated with each paddy (e.g., weeding on paddies, water management) was conducted by cultivators (i.e., tenants and owner farmers). Non-farming landowners joined forces on a voluntary basis to collectively manage large agricultural facilities through the village-based collective activities such as weeding on farm roads and cleaning of irrigation channels. The collective maintenance activities were financed by the government subsidies, and those who participated in the activities were paid per-diem allowance in return for their contributions. All the landowners, whether engaged in farming or not, were responsible for property tax payment for their owned land. In addition, owners and tenants shared the irrigation dues fifty-fifty under tenancy. Tenants gained farm profit from both owned and tenanted land, and paid land rent to tenants for tenanted land. A land rent was decided between the parties, in consideration of the farmland conditions as in the contracts under the FB program, while the Production Association provided standard rents as a reference for the parties to agree on an appropriate rent.

Table 3.4 Status of respondents' participation in tenancy arrangements in U Village

Ownership	Farming	Tenancy	Farming Union	Corporate Status	Farm scale	FB Program Participation	Age	Roles & Responsibilities	Reward	
<b>Yes (Production Association)</b> (n=23 [19HHs])	<b>Yes</b> (n=14 [11HHs])	<b>Borrowers</b> (n=11 [9HHs])	<b>No</b> (n=3 [2HHs])	Yes (n=1)	45-50ha	Yes	60s	<ul style="list-style-type: none"> <li>• Farm management (Individual for rice &amp; crop conversion)</li> <li>• Farmland maintenance (Individual &amp; Collective)</li> <li>• Payment: Rent, Irrigation dues (50%), Tax (for own land)</li> </ul>	<ul style="list-style-type: none"> <li>• Farm profit (Individual from rice &amp; crop conversion)</li> <li>• Allowance (Collective maintenance)</li> </ul>	
				No (n=2 [1HH])	12ha	No	70s			
		<b>Owner farmers</b> (n=3 [2HHs])	<b>Yes</b> (n=11 [9HHs])	<b>No</b> (n=11 [9HHs])	No (n=11 [9HHs])	2-6ha	Yes (n=2: 1 formal, 1 informal)	60-70s	<ul style="list-style-type: none"> <li>• Farm management (Individual for rice, Collective for crop conversion)</li> <li>• Farmland maintenance (Individual &amp; Collective)</li> <li>• Payment: Rent, Irrigation dues (50%), Tax (for own land)</li> </ul>	<ul style="list-style-type: none"> <li>• Farm profit (Individual from rice &amp; Collective from crop conversion)</li> <li>• Allowance (Collective maintenance)</li> </ul>
					1.2-2.5ha	No (n=6 [5HHs])	50-70s			
						2.3-3ha	No (n=3 [2HHs])	80s	<ul style="list-style-type: none"> <li>• Farm management (Individual for rice, Collective for crop conversion)</li> <li>• Farmland maintenance (Individual &amp; Collective)</li> <li>• Payment: Irrigation dues (50%), Tax (for own land)</li> </ul>	
		<b>No</b> (n=9 [8HHs])	<b>Lenders</b> (n=9 [8HHs])	<b>No</b>	N.A.	N.A.	No	60-70s	<ul style="list-style-type: none"> <li>• Farmland maintenance (Collective)</li> <li>• Payment: Irrigation dues (50%), Tax (for own land)</li> </ul>	<ul style="list-style-type: none"> <li>• Rent</li> <li>• Allowance (Collective maintenance)</li> </ul>

The proceeded tenancy arrangements, which were not directly transferable to the FB program, limited the program adoption to the three new cases for which owners were qualified for retirement funds. The interviews suggest that farmers' involvement in (or absence from) a certain tenancy arrangement rest on three key factors: 1) economic feasibility; 2) kin-based life security; and 3) communal relations building on individual well-being. First, economic feasibility of farming was a key determinant about whether to be involved in tenancy. Many owners hinted at the loss or decline of their own farming capacities (e.g., health problems or mechanical deterioration) as a main reason for farm retirement, whereas the secured income source (e.g., pension or salary from other jobs) allowed them to do so. Most tenants accepted tenancy depending on their farming capacities, and shared responsibility for tenant farming with other available farmers in the community if it exceeded their capacities. Second, if economic feasibility allowed, many owner preferred relatives over others, even other local farmers, as tenants. In this connection, they explained farmland as a family asset to be handed down to the next generations, and as a reserve or backup to secure their livelihoods and deal with any emergency situations. They also suggested they could fulfill a role in managing farmland at the community in the unit of family (e.g., collective maintenance activities) under the kinship-based arrangements. Third, the Production Association facilitated arrangements at the community level by serving to: 1) share information related to tenancy (e.g., subsidiary conditions) so that the parties can choose a certain arrangement advantageous for them; 2) legitimate rule-making on tenancy (e.g., provision of standard land rents); and 3) coordinate collective activities to complement farmland management under tenancy (e.g., maintenance activities). Nevertheless, these collective actions were built on the fulfillment of individuals' well-being including health, pleasure and societal participation, all of which were diverse among different individuals and dynamic even within an individual, and involved both subjective and objective aspects.

The following two issues were found as emerging challenges: 1) incorporation of the Farming Union; and 2) land-use change. First, given that almost all the family-run farms had not secured their successors to farming in their families, the Union members were discussing the idea to incorporate the Union to engage in community-based farming involving rice farming so as to address the aging and shrinking of farming population. The incorporation of the Union would allow landowners as cooperative members to collectively engage in decision making on farm management. Yet, they were also concerned of feasibility of the incorporation. This was because they would have to make initial investment and develop business strategies for commercial farming, and at the same time may lose their individual wellbeing (e.g., self-consumption, freedom of choice) at the expense of collective farming. Second, the village community was increasingly faced with mismatches between different interests and needs for land-use. Although most of the improved farmlands were managed by either incorporated or family-run farmers, some farmlands, particularly unimproved paddies or dry-field along the river, were increasingly abandoned in the past several years. At the same time, on the recent trend of slight population increase with favorable access to transportation, residential and commercial facilities, some of the villagers expected further population increase to make the community more economically viable. Besides the zoning designations that strictly control farmland diversion, the interviews highlight possible mismatches between tenants and owners, which may hinder productive farmland use and inevitably lead to farmland abandonment. On one hand, tenants, even large farmers, were becoming reluctant to buy and even lease farmland on the current socio-economic trends. On the other, owners could not afford taking care of land on their own and may like to sell it out in face of a possible deficit in owning land given the property tax and irrigation dues.

#### 4. Discussion

The focus on the two farming communities reveals that farmers' attachment to farmland was a key determinant to the mode and level of the FB program adoption. One community (N District) adopted the FB program along with the decline in landowners' personal attachment to farmland, which the majority of respondents expressed, wherein many of the independent, family-run farms were incorporated into communal, corporate one. The other (U Village) largely remained with the conventional tenancy arrangements based on independent and mostly family-run farming, by which many landowners preserved their personal attachment to farmland as a family property that most respondents emphasized.

On one hand, N District collectively adopted the FB program, building on the long-standing communal farming. Taking advantage of a community-based organization with a high capacity of coordination as well as financial support offered by the government, the process of program adoption was free from pronounced resistance against the authority and internal conflict within the community on the premise of the declining owners' personal attachment to farmland. In combination with land improvement, the program adoption helped to attain the policy goals to consolidate and aggregate farmland for large-scale farming while enabling infrastructural investment for future farmland use. In the context of demographic decline (i.e., aging and shrinking of population), however, program adoption may contradictorily exacerbate farmland abandonment by wrecking owners' attachment to farmland, without which they may further move out from the community to cities with better access to educational and occupational opportunities.

On the other, U Village continued conventional tenancy arrangements (i.e., those made directly between owners and tenants) in reliance on the existing medium and large farmers, while limitedly adopting the FB program on an individual basis (i.e., tenancy arrangements between individual owners and individual tenants through the FB). As such, the village was missing out on subsidiary opportunities for community-wide agricultural development with government support, albeit a few owners' receipt of retirement bonus upon their retirement from farming through individual adoption of the program. Although communal farming was emerging, it was yet to be developed for collective program adoption under the owners' persistent attachment to farmland as a family asset. In the context of suburbanization, nevertheless, their personal attachment to farmland is not necessarily to sustain it as arable farmland, but rather to hold it as profitable land that would be potentially used or sold for other purposes. The current zoning designations in the village disallowed land use change for the purpose other than agricultural production, and thus contributed to depreciation of (economic) land value reflecting the trend of rice price depreciation. At the same time, there appeared to be potential mismatches between tenants and owners in future farmland transactions, which may possibly lead to farmland abandonment. If the zoning regulations change, the agricultural landscape may largely change to reflect the demands from various sectors other than the farming sector.

The study argues that the tenancy model has been reshaped through the interactions of different actors across levels, involving farmers as active social agents in the process. Social institutions have undergone interlocking transitions of farming families (i.e., *ie* in Japanese) and farming villages (i.e., *mura* or *shuraku* in Japanese) along with the progress in tenancy arrangements, wherein owners have been losing their identity associated with their farmland in accordance with the decline in the life security function of farmland. Political institutions have become increasingly complexed, changing the governance approach to farmland from state control to decentralized planning and then to multi-level coordination. With an increasing

emphasis of economic competitiveness and agricultural multi-functionality rather than the primary focus on farmers' welfare, farmland policy has gradually shifted its focus to expand the property scale of farmland from a family property to commons of a broader society. To ensure that the commons is productive, the FB program has emerged to boldly separate between ownership and use rights to farmland by taking a decision-making role away from farmers (i.e., owners) in farmland use so as to increase opportunities of farmland use.

The current outcome of the process in governing farmland is the modality where farmers as ownership right holders are still politically and institutionally sanctified to make an autonomous decision of farmland use with a limited degree of penalty for abandonment, rather than being forced to renounce their rights in exchange for the exercise of complete discretionary power of the prefectural authority. However, with generous subsidies, community- and/or corporate-based farming has been economically incentivized for farmland consolidation and aggregation, whereby large farmers even from outside are encouraged to be brought in. Tenants' sense of communal engagement in collective farmland management and their commitment to long-term cultivation have been nurtured through ad-hoc community development practices, while a farming village (i.e., *mura* or *shuraku*) as an institution involving both tenants and owners has continuously served to pursue collective farmland management with the help of governmental subsidies for productive farmland use. Nevertheless, such engagement of tenants and owners in long-term farmland use and management is not necessarily ensured by the designated planning procedures (e.g., Community Agricultural Master Plan) on which farmers have not been well informed without much incentive in itself. Furthermore, the intensifying global competition of agricultural products has been overshadowing the economic viability of large farms, while the climate change has been amplifying the environmental uncertainty. In practice, the tenancy model has been driving soft coercion of farmers' land-use practices for economic rationality by setting economic incentives well and invoking farmers' commitment and sense of responsibility for sound farmland use and management to some extent. Yet, it has not been equipped with a mechanism by design to enshrine their engagement in such practices and avoid one-time profit seeking land-use.

## 5. Conclusion

Farmers have actively contributed to shaping of the tenancy model along with the interlocking transitions of farming families (i.e., *ie*) and farming villages (i.e., *mura* or *shuraku*) that used to serve as life security units of farmers but has increasingly loosened to allow for their individual identity detached from farmland and to pursuit for other means of livelihood. Following the changes in these social institutions, political institutions have been intricately reworked to mobilize the powers and resources of social and political institutions as well as formal and informal institutions across different levels so as to improve the productivity of farmland. To ensure that farmland is productively managed as commons, the FB program has emerged to render the multi-level governance of farmland operational, without consent of farmland owners who have become steadily incapable of farming. Farmers have differently accepted the FB program, largely depending on the ways and levels of their attachment to farmland. One community fully adopted the FB program to restore communal attachment to farmland in substitution for personal one, while the other limitedly accepted the program to preserve personal attachment and retain individual flexibility of farming primarily on a family-run basis. Farmers' attachment to farmland, either individual or communal one, is not limited to economic and instrumental values of farmland but includes social, cultural and relational values. Importantly, this has driven farmers' long-term engagement in farming and commitment to agricultural landscape management where collective land management is indispensable,

despite economic volatility and environmental uncertainty of farming. Further attentions to subjective, intangible and cultural aspects of farmland would complement the current tenancy model that skews towards the material, tangible and economic aspects to facilitate sustainable farmland management of agricultural landscapes hinging on productive farmland use.

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