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Types of Agriculture Land Tenancy System in Demak District, Demak Regency

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ABSTRACT

Agricultural tenancy system is a farmland management system commonly used by farmers. This system poses as a provider for rural community's job opportunities and occupations. The purpose of this research is to identify types of tenancy system and the on-farm profiles in Demak District, Demak Regency. The connection between farmlands and these profiles may become a ground for mutual arrangement with the government in order to protect the existence of farmlands. The result of survey to 238 respondents in the district identified there are at least four types of tenancy system that exist in Demak District society, namely: (1) basic tenancy system, (2) partial tenancy system, (3) farm bussiness tenancy system, and (4) managerial tenancy system. Furthermore, based on age characteristics and farming experience data, it is identified that there are possibilities of scarcity in farming profiles of the next generation, which may threat the existence of farmlands. Author argued that the scarcity may be due to job diversification in rural areas. This research suggests a new approach to implement the agricultural land protection policy by modifying one of the existing agricultural land tenancy systems into a contract based system with the government. The contract is aimed to formalize and bind on-farm profiles with their farmland, as well as to limit the number of them. Thus, other productive labor force may be shifted to another field for regional economic development.

Keywords: farmland protection, rural employment, tenancy system

INTRODUCTION

In the agriculture sector, land plays an important role. People need land to produce food and materials for industries through farming activities. Furthermore, land is an important asset to the business of farming and to the wealth position of farmers (Hill and Ray, 1987). Land's function in agriculture as production input is vital and so far has no substitute. This utilization, and other land use, produce competition amongst people to access it, and therefore it causes land scarcity, as there is only one earth for people to share.

Population growth has weighted development. Regarding the farmlands, the tendency in land use conversion from agriculture into non-agriculture is higher from time to time. Moreover, the competition in land use and vacant land scarcity have become one of the constraints in the development. Meanwhile, the government has to provide jobs and residences, as well as to ensure food availability (Irawan, 2008).

Agricultural land protection naturally opposes the economic development of rural area in some extent. In order to maintain food production, the law emphasizes extensification of existing farmlands. This is problematic, since the decentralization puts regions to develop their own by using local resources. As

Dube (1988) argued, the agriculture society burdens the modernization of a region. Rural areas are struggling to develop its region, which spatially is possible by turning farmland into built-up areas. The urban sprawl also may pressure these rural farmlands to convert into non-agricultural land use (Wastfelt and Zhang, 2018).

The decision to convert farmland's land use, however, does not lies on landlords only. Hill and Ray (1987) stated such power possessed by the landlords are not only the decision of how to utilize the land, but also who may utilize it. Furthermore, Nkomoki *et al*. (2018) and Paltasingh (2018) also stated that it is landlords who has the authority in deciding of crops planted. Meanwhile Maye *et al*. (2009) stated that both landlords and tenant farmers have the same position in deciding the land use, in which both are motivated to increase income. However, Ohe's (2001) study in Hiroshima found that the scarcity of on-farm profile may also contribute to the shift of farmland use. Therefore, the occurrence of farmland use converted into non-agriculture is influenced by the profiles related to the farmland, not only limited to landlords.

Despite of the burden that farmers bear to provide food for the society, they are also a profit seeker individually. Sattler and Nagel (2010) stated in their study that although it is not the most dominant one, the economic motive dominantly influence farmers' decision making in farming. It is in accordance with the study of Herzele *et al*. (2013) in Belgium and Lastra-Bravo (2015) in European Union. Nkomoki *et al*. (2018) also mention that farmland tenure affecting a household ability to obtain food and securing it from hunger. Their motive in farming is not purposely related to the good that they produce for public, for example the food security. In regards of supporting the food security, these farming profiles' participation to protect the existence of farmland depends on mutual arrangement with the authority since it is one of the government's agenda.

Under Law number 41 year 2009, the government of Republic Indonesia enacted the Law of Sustainable Agricultural Land Protection. The law regulates agricultural land use, as well as protect it from land use conversion into non-agricultural use. Furthermore, the law also emphasizes several functions upon existing farmlands, such as to preserve the identity of the country as an agrarian country, to serve as an occupation and income source, to serve for environmental protection, food independency, food security, and food sovereignty protection, and several other purposes. The protection itself faces challenges which results in obstructed implementation ever since the law was established.

Law 41/2009 offers incentives as trade-off for landlords to maintain their farm holding (Government Regulation 1/2011, 12/2012, 25/2012, and 30/2012). However, there are similar benefits given by the government for farmers annually. In this regards, there are no distinguished incentives given specifically for participation in the law's implementation. Thus, it is implied that the exchange for maintaining the existence of their farmland does not satisfy the targeted party, in this regard are farmers or farmland landlords.

Being an indigenous society, Indonesia has multiple values in the society in which each region has different preferences and customs. Furthermore, in order to satisfy the farming profile in exchange for their contribution to protect farmland, the government should recognize the existing farming custom as an approach to implement any policy.

The management of farmland is dominated by tenancy system. The system has been long acknowledged as the common practice in agriculture sector (Hill and Ray, 1987), particularly in Southeast Asia (Fujimoto, 1996; Koirala *et al*., 2016, Panichvejsunti *et al*., 2018), and had been practiced ever since late Roman empire (Silver, 2017). The practice connects farmland's function as the occupation and income resource with profiles other than farmers (Feng, 2008; Manning, 2017). In

regard that the targeted party of farmland protection is those who own the control towards farm land use, this agricultural land tenancy system may be able to explain the interest of these profile towards farmlands. Furthermore, in order to maintain possible opportunities for local regions to develop their areas, a reciprocal disposition should able to bridge both interests of the government and the policy's target profiles.

This present research attempts to recognize the form of the local agricultural land tenancy system. The system may show profiles involved in the farmland management. Further discussion of the agricultural land tenancy system as the local custom may discover the potential of it to be utilized as alternative approach for farmers in participating the implementation of the farmland's protection as it is mandated by the law 41/2009.

METHODOLOGY

Research Instruments

This research utilizes questionnaire survey data gathered in 2017. Primarily, the questionnaire is built to explore the multifunctional agriculture[1] based on farmer's perception and the law of sustainable agricultural land protection (The Law 41/2009). The questionnaire consists of three sections, however, this present research will utilize only two parts of the questionnaire, namely:

a. General Data
   The first section consists of 21 open questions regarding respondent's identification such as name, age, and education. Furthermore, questions on occupation includes main occupation and part time employment. Family background questions consist of the number of family member, on-farm engaged family members, and the respondent position in the family. Comprehensively, the respondent's farming experience is explored through question on farming time and farming activities. Furthermore, there are questions linked to the farmland and farming income, such as farmland location, width, status, farming production, income, and commodity type.
b. Agriculture Functions Based on Law 41/2009
   The third section contains 11 open questions aimed to explore the possibility of multifunctional agriculture practice in the society. The multi-function practice expected are interpreted from Law 41/2009's content by analyzing the context of the body of the law. Respondents are asked to mention and explained local practice in which serving the purpose as the agrarian identity preservation, occupation and income resources, environmental carrying capacity protection, food independency, security, and sovereignty protection, empowering people participation in the development, forming the socio-cooperation, the culture and local wisdom protection, the social education and science development, spatial forming, the domestic economy strengthening, and the public facilities maintainer.

The data is analyzed descriptively. The main profiles in the agricultural land tenant system is acknowledged by cross-tabulating the frequency of the amount of land ownership to the land cultivated by the respondent. This cross-tabulation distinguishes landlord farmers and landless farmers (tenant farmers). Furthermore, these profiles are cross-tabulated with the on-farm activities data to form the linkage of each profiles with the farmland. This linkage forms the local agricultural tenancy system. Further discussion will be supported by the general data of respondents.

[1] Multifuntionality is defined as an activity oriented concept that refers to specific properties of the production processes and its multiple outputs (OECD, 2001). The concept of multifunctional agriculture refers to the functions that the agriculture exhibits and emphasizes the various commodities and non-commodities produced by it.

Research Location

The research was conducted in Demak Regency, Central Java Province. This regency is a coastal area in the northern part of Java Island, in which numerous rivers run through its area. The abundance of water resources put the agriculture and fishery sector as the major sector in the regency. Among 14 districts in the Regency, farmlands cover more than half of its area [Table 1]. Furthermore, Demak Regency is a paddy contributor for the province with production up to 643,447 ton (BPS, 2016). It contributes 5.7% of the Central Java Province paddy production, third after Cilacap and Grobogan. Respectively, in sum, Demak Regency is one of the vital regions in supporting food security in the regional and national level.

Table 1 Farmland area in Demak Regency

No	District	Line area (hectare)	Farm-land (hectare)
1	Bonang	8,324	4,742
2	Demak	6,113	4,311
3	Dempet	6,161	4,501
4	Gajah	4,783	3,524
5	Guntur	5,753	3,376
6	Karanganyar	6,776	4,918
7	Karangawen	6,695	2,634
8	Karangtengah	5,155	2,922
9	Kebonagung	4,199	3,280
10	Mijen	5,029	4,052
11	Mranggen	7,222	3,143
12	Sayung	7,869	1,992
13	Wedung	9,876	5,345
14	Wonosalam	5,788	3,575
	Total	81,419	52,315

Source: *Dinas Pangan dan Pertanian* [Food and Agriculture Agency] of Demak Regency, 2016

The questionnaire survey was focused on Demak District as the urban area of the Demak Regency. The district itself consists of six subdistricts, namely Betokan, Bintoro, Kadilanggu, Kalicilik, Mangunjiwan, and Singorejo subdistricts, and 13 villages, namely Bango, Bolo, Cabean, Donorejo, Kedondong, Kalikondang, Karangmlati, Katonsari, Mulyorejo, Raji, Sedo, Tempuran, and Turejo villages. As the urban area of the regency, the district may face higher threat of farmland conversion into non-farming purpose.

Furthermore, using Krejcie and Morgan formula[2] (Bungin, 2013), samples taken from the location were 238 respondents. The procedure entails simply using a percentage for each group of the area based on its administrative status, which is consist of 6 subdistricts and 13 villages [Table 2].

Respondents from each sub district and village are chosen based on convenience, considering the limited time and resources. The surveyors choose respondents based on the availability of people in the survey areas at the two-weeks given for surveys and their willingness to participate in the survey.

Table 2 Respondent sampling

	(N)	N (%)	(n)
Betokan	137	2.05	5
Bintoro	113	1.69	4
Kadilangu	112	1.68	4
Kalicilik	219	3.28	8
Mangunjiwan	539	8.07	19
Singorejo	125	1.87	4
Bango	498	7.45	18
Bolo	392	5.87	14
Cabean	474	7.09	17
Donorejo	253	3.79	9
Kedondong	467	6.99	17
Kalikondang	395	5.91	14
Karangmlati	337	5.04	12
Katonsari	316	4.73	11
Mulyorejo	457	6.84	16
Raji	417	6.24	15
Sedo	312	4.67	11
Tempuran	247	3.70	9
Turirejo	873	13.06	31
	6,683	100	238

Source: BPS (2016)

[2] The sampling (s) formula is $s = \frac{x^2 NP(1-P)}{d^2(N-1)+x^2P(1-P)}$. Demak District had a population (N) of 100,831 people in 2015 (BPS, 2016). The confidence level (d) of the sample taken is 0.95 and degree of freedom is determined as 1; therefore, the Chi-square value (x^2) is 3.84, with the population proportion (P) being 0.2 (Irianto, 2016).

RESULTS

There are at least four types of tenancy systems in Demak regency that involves numerous actors. The systems can be recognized by cross tabulating land ownership with each of actor's activity on the farmland. The four main profiles, namely are (1) off-farm landlords, (2) landlord farmers who only cultivates all or a part of their own farmland, (3) landlord tenant farmers who cultivates their own farmland and another landlord's farmland, and (4) landless tenant farmers. Furthermore, these farmers in the farmland are correlated with other profiles, namely by (1) renting, (2) self-cultivation, (3) family members' assistance, (4) labor assistance, and (5) hired labor. These on-farm profiles found are more varied than those found by Antwi-Agyei *et al.* (2015) study in Ghana. The landlords and tenant farmers generally has the same perception towards the tenancy system, in contrary with the study by Tatsvarei (2018) in Zimbabwe. The correlation of these profiles forms the tenancy system.

Table 3 Cross-tabulation between respondent's land ownerships and land cultivated

		Land Cultivated (hectare)			
		<1	1-2	>2	None
Owner ship (hectare)	<1	29	18	3	88
	1-2	2	5	2	15
	>2	0	3	1	4
	None	44	12	1	11

Table 4 Cross-tabulation between profiles and onfarm activities

	Renting	Self-cultivation	Family member assistance	Labor assistance	Labor Hiring
Landlord	78				23
Landlord farmer	15	10	1	8	7
Landlord tenant farmer	27		1	3	6
Tenant farmer	36	4		14	4

The first type of tenancy system is the basic tenancy system, where a landlord rent his farmland to another farmer (Figure 1). The landlord gives the tenant farmer rights to cultivate using the *tuku*[3] or *maro*[4] system, based on mutual trust. The landlord does not engage in cultivation activities at all and usually has another occupation or employment. In addition, the tenant farmer may also rent another farm from another landowner. In this type of tenancy, the actor who cultivates the farmland is the tenant farmer, and the landlord only obtains income through the renting mechanism.

The second type of tenancy system is the partial tenancy system where the landlord also engages in the cultivation activities [Figure 2]. The on-farm landlord rents out a part of his farmland to another farmer, while he cultivates the other part of his landholding. This system provides occupation and income sources for both the landlord farmer and the tenant farmer.

The third tenancy system is the farm business tenancy system. This system is formed when the tenant farmer is also a landlord farmer [Figure 3]. It is when the landlord farmer expands his farming activity by renting farmlands from other landlords who does not engage in cultivation. The landlord farmer obtains the access to cultivate many farmlands with less capital resources and rents a part of them to other tenant farmers who do not own farmland, while he cultivates the other part of

[3] *Tuku* is a javanese word for buy. *Tuku taunan* is a term used by local farmer for renting the farmland for a year round. This term may confused for non-local people as literally, it means buying the land. In fact, the renting system of *tuku* means that the tenant farmer pays the rent upfront to the landlord.

[4] *Maro* is javanese term to mention the share cropping renting system (D, 2015). Most of tenant farmers with weak capital resources use this system as the risk of farming will be borne by both the tenant farmer and the landlord. Zeng et al (2018) argued that sharecropping is more profitable for the on-farm farmers.

them. This landlord farmer may also have family members or labor to assist him in cultivation. In some cases, the landlord farmer may also hire labor to manage the cultivation of a part of the farmland. This system provides occupation and income sources to the landlord farmer, tenant farmer, family members, and labor, while the off-farm landlord only obtains income from the renting activity.

The fourth tenancy system is the managerial tenancy system. As in the type one, the landlord rents his farmland to a landless tenant farmer. Furthermore, this tenant farmer poses as a manager of rented farmlands. He then rents out a part of them to another landless farmer. In addition, he may also cultivates a part of these rented farmland, either on his own, by family or labor assistance, and/or by hiring labor to cultivate for him [Figure 4]. This type of tenancy system provides occupation and income resources for tenant farmers, family member, labor, and the landlord.

DISCUSSION

From the respondents' age characteristics, it can be assumed that, on average, most farmers started farming at 20–30 years of age. Interestingly, among the 238 respondents, 5% of the respondents are less than 30 years old, implying that the younger generation is drifting away from agriculture-related activities. This occurrence also has been confirmed by the study of Morgan-Davies *et al*. (2017), Duesberg *et al*. (2017), and Walden and Lindborg (2018). It is not necessarily true, Pribadi *et al.* (2017) stated that young generation is more interest in the horticulture rather than wetland cultivation. In regards of farm successor, Carolan (2018) found that it is the later generation of farmer who has the motivation to maintain the agriculture, while first generation consider environmental sustainability more. Furthermore, Palupi (2016) found that farmers are increasingly expecting their offspring to attain higher education and find non-agricultural occupation. Thus, it can be assumed that when people have more options of employment, they would rather choose an off-farm occupation (Rigg, 1998; Xie *et al*. (2005). Therefore, the existence of farmlands may be unnecessary for them; they may rather use it for non-agricultural purposes or to forfeit their property rights.

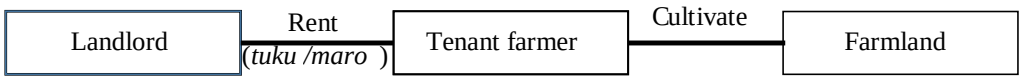

Figure 1 Basic Tenancy System

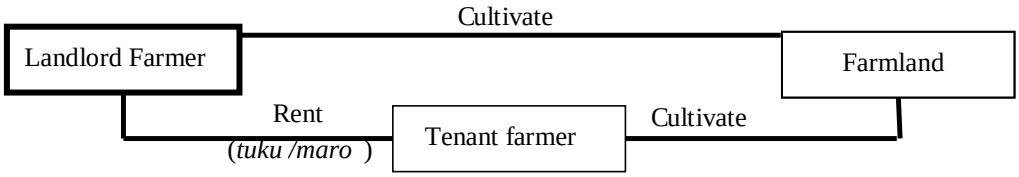

Figure 2 Partial Tenancy System

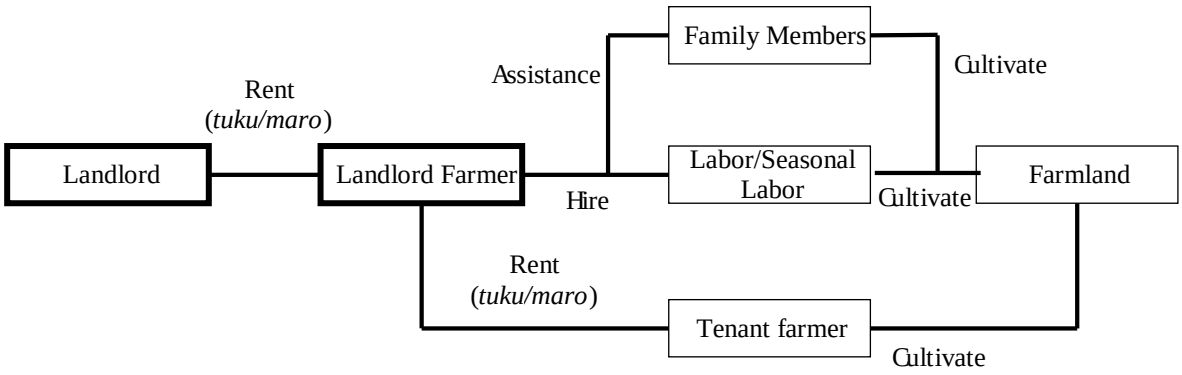

Figure 3 Farm Bussiness Tenancy System

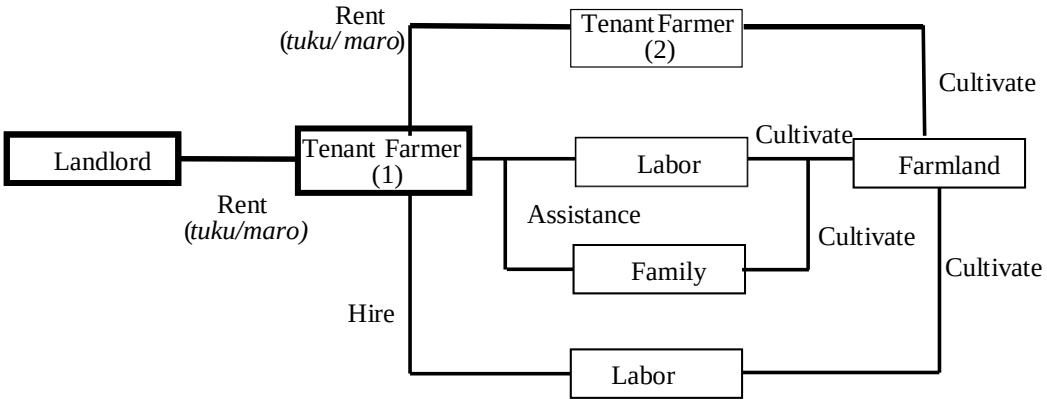

Figure 4 Managerial Tenancy System

Table 5 Respondent's age

No.	Age Classification	Respondent	Percentage
1.	15-24	4	1.68
2.	25-34	13	5.46
3.	35-44	46	19.33
4.	45-54	84	35.29
5.	55-64	69	28.99
6.	>65	22	9.24

A diversification of job opportunities, however, is important for economic development and competitiveness. The statistical agency dynamic data[5] reported that Demak Regency is among the underdeveloped regencies in the Central Java Province. This may be due to the major occupation of the regency being related to the agricultural sector. As Dube (1988) argued, development of an area is delayed as their characteristics contrast those of modern societies, in which he described related to, although not only limited to, the industrialized society. In Demak, employment diversification has led to the decreasing number of productive people working in the agriculture sector during 2011–2013 (Local Government Annual Report, 2016:28). Among the five employment classifications, the agriculture sector is the only one experiencing a decrease that is significantly affecting the level of workforce participation (Local Government Annual Report, 2016:23). The decreasing number of people working on farms with increased labor productivity and efficiency (Dwyer, 2006) leads to the rise of farmers' purchasing power (*Nilai Tukar Petani/NTP)*. However, it has not been able to lift the regency out of the poverty ranks at the regional level. In summary, the society inhabiting the regency is still closely linked to the agriculture sector, thus, the local government's attempts to shift

[5] In 2009, Demak Regency is ranked 29th in the ratio of poor people in Central Java Province, among 35 regencies and municipalities. However, in 2016, the ratio increased and put the regency at the 12th place for highest ratio of poor people (Source: https://jateng.bps.go.id/link TableDinamis/view/id/33).

the employment focus may not have a significant effect on the development expected.

In order to protect the existence of farmlands, farmers should be bound to their occupation as an on-farm workforce. In order for farmers to stay to their occupation, the government may offer a formal employment for farmers whose farmlands are established as sustainable agricultural land. Offering the formal employment by farmland management contracts to farmers who own and/or practice agricultural activities in the established agricultural land may increase their interest in keeping their farming activities and obtaining income under government particular policy (Ton *et al*., 2018). Furthermore, it is stated that employment may arise from the farmland renting scheme under the government intervention (Schimtz *et al.,* 2002).

In addition, a study by Foudi (2012) implied that a contract management between landlords and tenant may prevent unjustified utilization of farmland. Similar study by Sklenicka *et al*. (2015) supports Foudi's statement in which landlords has the tendency to maintain farmland in more sustainable manner than tenants. On the contrary, a study by Ranjan *et al*. (2018) stated that landlords, particularly off-farm landlords, less aware of land conservation. However, most landlords are off-farm landlords and the land management is on the hand of tenants.

Village government in Indonesia auctions farmlands own by the government to be rented by local farmers as a source of local capital that, in return, also opens employment for local farmless farmers. However, employment in agriculture may face a decreasing trend that interventions, such as incentives, may be able to slow it down but will not able to reverse it (OECD, 2003). North American farmers depend on farm contracts with community cooperatives to manage their farmlands (Wittman *et al*., 2017). Farming activities that are under the intervention of the government or by independent management of farmland through legal agreement both strengthen the relation between farmers and their cultivated lands

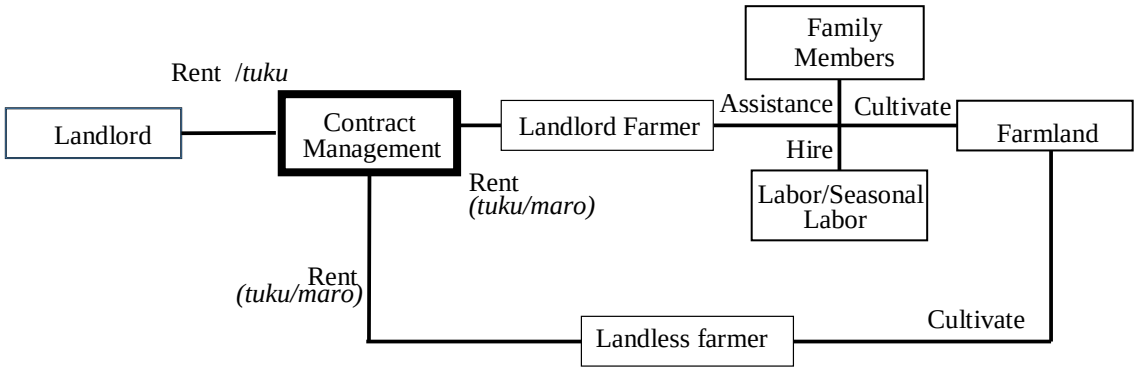

Figure 5 The Contract Tenancy System

The contract of farmland management may adopt the tenancy system that already exists in the society with a modification. More targeted approach, in which values local wisdom and practices may influence farmers' participating in policy's implementation. (Alavoine-Mornas and Girard, 2017; Morgan-Davies *et al*., 2012). The tenancy system that can provide and accommodate various profiles is the farm business type of tenancy system [Figure 5]. The modification of the system lies with the contract that binds all the on-farm profiles to the farmland as well as the landlord. Through this scheme of land management, the contract may limit the number of on-farm profiles and may shift the remaining labor force into other sectors. The limited profile working on farm increases the quantity of farmland

managed in which eventually increasing farmer's income (Ilbery *et al*., 2010; Gottlieb and Grobovsek, 2018) and optimizes farmland operated (Muraoka *et al*., 2018). Such contract may consolidate farmlands, in which may bring satisfactory to farmers, as described by Allahyari *et al*. (2018) in providing public goods. Furthermore, the contract also legalizes the occupation as the sustainable agricultural land farmers as a formal occupation. In addition, the rent system of *maro* between the landlord and the tenant may able to provide the contracted contribution to the government's food stock. In conclusion, the modified existing tenancy system, particularly the farm business type, may be a win-win solution for all parties-the government, landlords, and on-farm profiles.

CONCLUSIONS

The law 41/2009 about the protection of sustainable agricultural land is also aimed to provide job opportunity in the rural areas. There are four types of agricultural land tenancy system found in the Demak Regency, namely (1) basic tenancy system, (2) partial tenancy system, (3) farm business tenancy system, and (4) managerial tenancy system. These farmland tenancy system involving (1) off farm landlord, (2) on farm landlord, (3) landless farmer, (4) farmer's family member, (4) hired labor, and (5) seasonal labor. This show that farmland provide occupation through the tenancy system.

RECOMMENDATIONS

Although there are numerous profiles involved in the existing farmland tenancy systems, their involvement is still considered as informal occupation. Perceiving that the occupation is informal, may result these farming profiles to abandon their activities which may leads to the unnecessary existing of farmland. Therefore, offering a formal employment to these on farm profiles by utilizing the existing farmland management may bind them to farming and maintain the existence of farmlands under the policy of the sustainable agricultural land protection. In this regards, incentives offered for these particular farmlands are considerably higher than other farmlands and give these farmers a significant establishment to encourage them to stay on farm and keep the farmland.

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