

## INSTITUTIONAL STRENGTHENING STRATEGY FOR PEASANT OF DRYLAND FARMING IN THE AREA OF EX-SURAKARTA RESIDENCE

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### Abstract

This study aims to formulate an institutional strengthening strategy in order to optimize the management of dryland farming as one of a central point in agribusiness in the Ex-Surakarta Residency, Central Java. The data in this study are collected using the participatory rural appraisal (PRA) method and analyzed with qualitative data analysis during 1 April to 30 September 2016 period. The strengthening strategy is developed through a focus group discussion (FGD) and analysis of hierarchy process (AHP). The result of this study shows that the institution of farmer production facilities is in a weak condition. Institutional within the cultivation activity, especially in the procurement of land, usually the norm of the lease are made jointly between two parties, while transactions between peasants and farm workers are made based on a Neoclassical contract which is built over a complex and long term relationship. In the institution of output processing, the relationship between peasants and processors can be included in a relational contract because it is based on the business relationship experienced by the two parties. Moreover, this study finds that the marketing institutional in the management of output is characterized by a fragile transaction between peasants and traders where in the level of supportive institutional, the role is still have not been playing well.

**Keywords:** Institutional Strengthening, PRA, FGD, AHP

### Abstrak

*Penelitian ini bertujuan untuk merumuskan strategi penguatan kelembagaan dalam rangka optimalisasi pengelolaan lahan kering sebagai salah satu titik sentral dalam agribisnis di Eks-Karesidenan Surakarta, Jawa Tengah. Data dalam penelitian ini dikumpulkan dengan menggunakan metode participatory rural appraisal (PRA) dan dianalisis dengan analisis data kualitatif yang dilakukan pada 1 April sampai 30 September 2016. Strategi penguatan dikembangkan melalui focus group discussion (FGD) dan analisis of hierarchy process (AHP). Hasil penelitian ini menunjukkan bahwa kelembagaan sarana produksi petani dalam kondisi lemah. Kelembagaan dalam kegiatan budidaya pertanian, terutama dalam pengadaan tanah, biasanya dibuat norma sewa bersama antara kedua belah pihak. Sementara itu transaksi antara petani dan pekerja pertanian dilakukan berdasarkan kontrak neoklasik yang dibangun di atas hubungan yang kompleks dan jangka panjang. Pada lembaga pemrosesan output, hubungan antara petani dan pihak-pihak yang memproses hasil pertanian (pedagang) dapat dimasukkan dalam kontrak relasional karena didasarkan pada hubungan bisnis yang dialami oleh kedua pihak. Lebih lanjut, temuan penelitian menunjukkan bahwa kelembagaan pemasaran dalam output ditandai dengan transaksi yang rapuh antara petani dan pedagang dimana kelembagaan pendukung belum berperan baik dalam mengoptimalkan pemasaran.*

**Kata kunci:** Penguatan Kelembagaan, PRA, FGD, AHP

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## INTRODUCTION

Food self-sufficiency is one of the problems that is still faced by Indonesia, where until now the government has still not been able to fulfill it so that Indonesian government still imports food, especially rice. It is because of the mindset of the majority of Indonesian people who always identify food with rice even though there are variations in other foods such as corn, cassava, and soybeans. Of course, it is not a good condition because depending on one food source will be at risk of being unable to meet household and national needs in terms of food procurement wherein past era Indonesia has achieved food self-sufficiency. Thus, it is necessary to do a study in the needs of other food sources other than rice which can be used as substitute or complementary products for Indonesian people, particularly in Ex-Surakarta Residence.

Opportunities to produce food other than rice are still wide open because Indonesia has a lot of drylands that have not been optimally managed. If these drylands can be managed optimally it will be able to sustain a food self-sufficiency program where this type of soil is suitable for planting cassava, upland rice (*padi gogo*), corn, soybeans, and peanuts. The successful of dryland farming is proven in China and able to support the food self-sufficiency program by planting potato, carrot, soy bean, etc (Li et al., 2016).

However, the processing of dryland is still not optimal because of the limited resources possessed by the majority of peasants in Indonesia so that economically dryland commodities cannot guarantee a decent life for some peasants. Actually, such condition of dryland farming is almost evenly prevalent in all developing countries both in Asia and throughout Sahara Africa, where dryland farming is generally still marginalized in its management compared to wetlands (Bantilan et al., 2006). This also happens because the dryland farming management technology is relatively left behind due to

the limited resources that the government has so that the management of this type of agriculture becomes less concerned (Norman. 2013).

The above weaknesses encourage the researchers to identify opportunities in optimizing dryland management to increase food products as alternatives to rice such as cassava, upland rice, corn, soybeans, peanuts, and so on. Moreover in the current era of regional autonomy which opens up more challenges and opportunities for researchers to study the development of local agriculture, especially in the case of dryland farming and its agricultural operations. It is also a challenge and at the same time optimizes opportunities for increasing agricultural income which can be done through institutional strengthening of dryland farming.

Therefore, in order to strengthen institutions in dryland agriculture empirical research is needed on institutional practices so that they can be used as a basis for developing strategies or models in strengthening dryland farming institutions. It becomes an urgency for research to be carried out on this topic. To answer these opportunities and challenges, researchers use the Ex-Surakarta Residence which has the potential to develop dryland farming, especially upland rice (Boyolali, Wonogiri, and Sragen Districts), corn (Boyolali, Klaten, and Wonogiri Districts), cassava and soybeans (Boyolali, Wonogiri, Sukoharjo, and Karanganyar Districts). The outcome of this study is expected that institutions on dryland farming will be identified and thus strategies will be developed to optimize the function of related institutions.

The success of managing dryland farming in developing countries, including Indonesia, is also in line with the policy of the United Nations Food and Agriculture Organization (FAO) which has targeted a 70% increase in food by 2050 because the world population is estimated to increase by 34% (Stewart and Li, 2013). This target

is of course only achievable by optimizing all agricultural land including dryland farming.

Specifically for Indonesia, the success of managing dryland farming in addition to sustaining a food self-sufficiency program will also open employment opportunities for low-educated rural communities so that they will also participate in the success of poverty alleviation programs (Suyono et al., 2016; Suyono et al., 2019).

Based on the explanation above, the purpose of this study is to formulate an institutional strengthening strategy in order to optimize the management of dryland farming in the area of Ex-Surakarta Residence including the Districts of Boyolali, Wonogiri, Sragen, Klaten, Sukoharjo, and Karanganyar.

## LITERATURE REVIEW

### Institution Concept

North (2005) considered that institutions are “the rules of the game”; while the organization is “their entrepreneurs are the players”. In North’s perspective, institutions can be interpreted as an arranger called governance that referencing agreements in the transaction between groups such as exchange of goods and services, revenue sharing between landowners and tenants, or exchange between the company and its employees (agreements governing). A transaction includes the agreement itself, the action outside the agreement, and all the situations that change agreement. Various forms of agreement are included in the form of formal or informal rules where the specific structure of the transaction is conducted between parties (North, 1990).

This contract can be formally written or informally verbal. In agriculture, contracts are simple and verbal (Bogetoft and Olesen, 2007). The variables in the agreement are not easy to be verified legally, particularly at the time when the contract partners understand whether the

agreement has been adhered to or not. When the quality is in accordance with the agreement, it is difficult for outsiders to prove the contract (Bijman, 2008). In many developing countries, a written contract is not a tradition. Meanwhile, informal agreement is jointly used and respected, especially by small peasants (Fafchamps, 1998).

### Institutionalization of Dryland Farming

Dryland farming is an agribusiness that relies on dryland management to produce agricultural products. As stated by Notohadiprawiro (1998), dryland farming is done without a watering system stagnating over the land. When managed well, it is good to plant such as Gogorice, palawija, fodder grass, and plantations. Li et al. (2016) found that effective dryland farming is able to support the program of food self-sufficiency in China where the dryland farming is very effective for planting such as potato, soy bean, carrot, etc when it is managed well.

In order to achieve success in planting and processing dryland agricultural products, it is necessary to have synergies from all related parties including several institutions involved in the management of dryland agriculture. Badan Pengembangan SDM Pertanian Reptan (2009) noted that there are five groups within a farm institutional. Firstly, the institutional provision of production input. This group consists of farm credit or capital institutional, fertilizers institution, seeds institution, and also the institution of provision and distribution of pesticides. Secondly, institutional in the cultivation activities, including labor institution, irrigation institution, land institutional (land tenure) in terms of the relationship between owner and the tenant peasants, as well as the harvest institution. Thirdly, institutional activities related to the process. This stage includes the organization of a rice mill (huller) usage, the processing and the manufacturing of

the food industry. Fourthly, the marketing institutional, covering the process of delivering agricultural products to the consumers. Fifthly, supportive institutions. These institutions include the cooperative institutions, institutional agricultural counseling and research institution which give support to succeed in the management of dryland farming.

Therefore, when all these institutions can carry out their functions optimally, dryland farming will be able to produce its products optimally as well. Ultimately, this condition will play a very positive role in supporting food self-sufficiency programs in Indonesia in general and in the Ex-Surakarta Residence in particular.

## RESEARCH METHODS

### Research Design

This study is conducted in five villages within five districts with the same characteristics with the macro in the Ex-Surakarta Residence where almost all of the lands are used as a moor agricultural land. Those districts are Boyolali, Wonogiri, Sragen, Klaten, Sukoharjo, and Karanganyar.

The data are collected through Participatory Rural Appraisal (PRA) that is a site appraisal method offering a better comprehension of the village situation (Chambers, 1987; Holland and Garbarino, 2009). In order to achieve its objectives, this study uses a qualitative data analysis done in several phases, i.e., data management, generative, interpretative, and representation (Miles and Huberman, 1994; Creswell, 2009; Connolly, 2003).

The formulation of institutional strengthening strategy is done through some stages; consist of Focus Group Discussion (FGD), in-depth interview with the key-persons and Analysis Hierarchy Process (AHP). FGD is performed in a group with the key informant through a deep discussion to some specific issues. The result of FGD and in-depth interview with key persons determines some aspects

related to the development of dryland agriculture business. The technique of Analysis Hierarchy Process (AHP) is used to identify and determine the priority over complex decision-making by utilizing the pairwise comparison (Saaty, 1993 as cited by Oelviani, 2013; Hummel et al., 1998). The weighting is performed by the experts as a respondent by filling the questionnaire. The whole process of the study was done during 1 April to 30 September 2016 period.

## RESULTS AND DISCUSSION

### The Description of Research Area

Ex-Surakarta Residence is an area in Central Java Province that consists of Surakarta City, District of Boyolali, Sukoharjo, Karanganyar, Wonogiri, Sragen, and Klaten. This region was established at the Dutch Colonial period. Its other name is Solo Raya which is a geographic region including Surakarta City as the center with its satellite areas. The size of the Ex-Surakarta Residence is 572,238 hectares or about 17.58 percents of the size of Central Java Province. The region consists of 171.804 hectares (30.02 percents) of farming area and 400,434 hectares (68.98 percents) of non-farming area. Based on the land size, corn is the most cultivated plant in this region followed by cassava and peanuts respectively. These three food plants are prevalent at each district in this region.

### The Institutional of Dryland Farming

#### *Production Input Institution*

Production input transaction is related to the procurement of seed, fertilizer, medicines stocks, farming equipment, and credit. For farming tools procurement, the peasants purchase it from the farming store around the village where the transaction is done through a classic contract. Production input seller only

concerns with some traders, while there are still a lot of peasants. Traders have bargaining power because they control the information, alternatives, speed to adapt to change and as well as product characteristics. The developed norm over a transaction is the market norm where every single purchasing at the store is paid in cash then the goods later being given.

In term of capital, peasants in this region have the capital derived from own capital and loan capital. Own capital comes from peasants own savings, while loan capital comes from formal financial institutions. The majority of peasants usually take advantage of loans from the Village Unit Cooperative to finance the agricultural activities they do (Riswan et al., 2017; Suyono et al., 2019) where an only small part of peasants who harness loan for business capital. The reasons not to borrow money from financial institutions are considered convoluted such as procedure needed to complete by peasants, fill the format, collateral, loan interest, and others advisability.

Peasants owner's cultivators commonly come from the parents' heritage or because the occupation as a guardian gets crooked land that is land loaned to former village guardian. To the land renter, they rent the land in their own village. Rent lands usually come from elderly villagers or non-farmer villagers. Some crooked lands are also rented by the guardian to renter peasants. Legally, leasing requirements are not found and generally, leasing policies are made together by two parties in one planting season time period.

#### *Cultivation Activity Institution*

Cultivation activities peasants do include labors, irrigation, and land supply. However, in the research areas, there is no irrigation and land institution at all. Irrigation for dryland tends to rely on rainwater so that there are no utilization rules. Meanwhile, for the land, almost all peasants admit the land managed is their

own. The only a small part who rent the land. The land rented in the village tends to decrease because of the functional shift of farming land such as used for city expansion, construction of public sector facilities, and housing construction

The labors demand, especially for planting and harvest season, comes from farmworkers around the villages. Sometimes peasants face difficulty to find farmworkers because the young generations prefer to work out of the agriculture sector such as factory or shopkeeper in the urban area. That is why the farmworkers normally are more than 40 years old who still have an interest in working as farmworkers. This condition triggers the requested wages are relatively high, so that peasants who employ farmworkers are peasants with large size of land (more than 0.3 ha), or peasants who have multiple jobs, i.e., as a businessman or formal work in other institutions such as civil servant or employee/manager in private company. The recruitment process of farmworker commonly without intensive negotiation in an incomplete contract. However, it can reach a flexible contract in an uncertain environment.

#### *The Processing Activity Institution of Production Outcome.*

Agriculture commodity processing to be half-processed goods and finished goods are choices to reduce damage and extend marketing duration. Some of the peasants sell the products in various forms from raw materials to finished goods. Usually, harvested plant directly sold to the collector trader without sorting process, grading, and packing. Most of the peasants sell the products in the form of half-processed goods such as processed cassava, dried corn, processed paddy (rice). Prevail relationship can be included in a relational contract because based on the experience of the business relationship between processor and farmer. The rights and obligations of the contract are more

informal and unwritten, where the contract can be renewed and repeated.

In order to optimize the production of agricultural commodities it is also necessary to add production factors proportionally to achieve the optimal scale of production. This also includes renewing production machinery to deal with the development of modern technology in increasing production (Wibowo and Nugroho, 2018).

#### *The Outcome Production Marketing Institution.*

Marketing distribution channels generally involve collector, processors, traders (both large and retail), and consumers. However, the most dominant is the collector. The wet harvested crops usually sold directly by the peasants to the traders. It is because of the traders have a bargaining power to have more information, alternative options, faster to adjust in any changes and also the characteristics of the product. The norms that develop in the transaction is the market norm and by doing it immediately. Transactions between peasants and traders are based on a relational contract from the business relationship between them. The contract tends to be informal and unwritten, and the contract can be renewed and be used repeatedly. The legitimate norm in the contract is no fraudulent behavior damaging each other with the appropriate quality and/or quantity, and not complicated.

#### *The Supportive Institution.*

In the context of the agricultural sector, support groups can be categorized in a broader scope, including government, LSM (non-governmental organizations- *Lembaga Swadaya Masyarakat*), the business sector, education, and community. So far, almost all the support groups still not play a big role. The most supportive group is the agricultural counseling provided by the government. At the village level, interaction counseling is

conducted between the counselors and peasants. Agricultural counseling has a function as a profession to assists the peasants within a variety of counseling services. Counseling is done at the level of peasants' groups, while the farmer's arrival is voluntary. The frequency of counseling visits to the farmer groups in the study area is quite high, where the visit is done to each group in the frequency of a week or two weeks. According to the farmer respondents, the counselor's assistance is very helpful in supporting their farming process.

### **The Institutional Strengthening Strategy**

Through FGD and in-depth interviews with the twelve key-persons stakeholders within a related field, institutional strengthening strategy of dryland farming includes the strengthening of farmer activities in the institutional level, peasant's resource, supporting facilities, and agricultural organizations. The priority results and the key performance indicator weights are calculated through the AHP program using the Expert Choice 2012 software.

Table 1 below shows the main priorities of institutional strengthening of the farm, i.e., institutional of farmer activities, human resource development, supporting facilities, and farmer activities organizations. The overall value of inconsistency ratio is  $0.089684789 < 0.1$  (maximum limit), which means the results of the analysis is acceptable. In other words, it is very urgent to strengthen the function of those institutions by involving all stakeholders so that the production results of dryland farming will be more optimal. This condition will become a solution for the program of food self-sufficiency by the Indonesian government.

Moreover, Table 2 shows the overall results of priority and the key performance indicator weights in details.

**Table 1. Priorities of Institutional Strengthening of Peasant Farm**

Key Performance Indicator	Weight	Priority
The Institutions of Activities	0.417666435	1
The Institutions of Human Resource	0.300744982	2
The Institutions of Supporting Facilities	0.171365217	3
The Institutions of Organization	0.110223366	4
Consistency Ratio (CR) 0.089684789		

**Table 2. The Priority and The Key Performance Indicator Weights Results**

Institutional Strengthening	Weight	Priority	Consistency Ratio
1 The Institutions of Activities			
Purchase	0.5418	2	0.06484
Sales	0.2285	1	
Process	0.1441	3	
Production	0.0856	4	
2 The Institutions of Human Resource			
Peasants' Skill	0.0867	3	0.0079
Peasants' Attitude	0.2860	2	
Peasants' Knowledge	0.6273	1	
3 The Institutions of Supporting facilities			
Well	0.6510	1	0.1064
Agriculture tools	0.2633	2	
Assisting	0.0857	3	
4 The Institutions of Organization			
Financial institutions	0.5449	1	0.0908
Agricultural counseling	0.1340	3	
Peasants association	0.2760	2	
Agricultural cooperation	0.0611	4	

### ***Strengthening Strategy on The Institution of Activities***

There is a need for partnership between the peasants and the marketer's output and/or input providers. In this case, the partners are expected to provide a guaranteed price and supply the input or receiving the commodities from the peasants. A comprehensive integrated partnership between the peasants and the major business partners as the core of enterprise require a written memorandum of understanding based on the government law and the interest of both which provide the same mutual benefit between the two

parties. In the short term, partnerships can facilitate peasants in technology development, so that the commodities produced can be easily absorbed by the market. In the long term, the development of partnerships can be used as a starting point in agribusiness development. Therefore, the industry will increase job vacancies and add value to the commodity of peasants.

### ***Strengthening Strategy on The Institution of Human Resource Development***

The results of the AHP analysis show that the increase of technical weight is

relatively high, indicating that the institutional development of human resources of peasants is required to be performed, especially to the younger generation. This increase can be carried out through managerial and entrepreneurial training, production management, marketing and distribution which related to agribusiness. In order to be in line with the expectations, the implementation should be prioritized. The short-term priority is to provide training of managerial, entrepreneurship, marketing, and distribution intensively. Meanwhile for the long term, the government may open educational institutions, courses, and various forms of training related to agribusiness.

Farming skills are related to farming practices. So far, peasants use traditional technologies and it had been used for generations. The land preparation, seed preparation, planting method, weeding, fertilizing and how to harvest are still in the traditional way. Similarly, post-harvest technologies as sorting, grading, and packing are still not widely spread among the farmers. Thus, it is required to perform skill development demonstrations through the application of quality seeds, fertilizers, post-harvest handling, and good farming practices. In addition, the peasants need to develop a network with the stakeholders in conducting a farming operation. These relationships can create synergies between the farmer and the business (processing industry), cooperatives, banks, NGOs, universities, and the local governments.

### ***Strengthening Strategy on The Institutions of Supporting Facilities***

Strategy various supporting facilities are needed in strengthening the peasants institutional in dryland agribusiness. The facilities include such as by providing wells. The dryland peasants usually rely more on the rainwater, therefore it is required for the government to build wells on a dryland area. In addition, as an effort to increase the technological innovation in

increasing the products added value of agricultural land, the governments should provide the agricultural production tools such as slicers, crop tool, processing of land, and so on which is due to the low post-harvest technology within the utilization of agricultural products. Meanwhile for developing the farming infrastructure, it can be done by cooperation between all supporting institutions with all peasants. The involvement of community in developing the infrastructure is a key success factors on this process (Nainggolan et al., 2019).

In addition, there is a need for assistance among the peasants, particularly in the marketing process. The assistant will help the peasants facing difficulties in the marketing process. Assistants can play a role as a mediator, facilitator, broker, mediator, advocate, and protector. These mentoring activities can be carried out by government agencies, universities, NGOs, or the private sector. A Business Development Services (BDS) can also be developed as a parallel institution which has been developed by various countries to help a small agribusiness company in developing its business.

### ***Strengthening Strategy on The Institutions of Organization***

The organization's institutions that help the agribusiness activities are the financial institutions, the farmer groups, the extension workers, and the cooperatives. Various strategies which can be performed such as strengthening the capital network. In this case, it is required to develop a banking institution that focuses on the agricultural field, including the dryland farming. These opportunities can be utilized by the Village Credit Institutions (*BKD-Badan Kredit Desa*), the village credit financial institution (*LDKP-Lembaga Dana Kredit Pedesaan*), the Grameen banks, etc. The existence of farmer groups can strengthen the bargaining power of peasants within the procurement and the marketing of



agricultural products. It is required for the farmer groups to develop themselves according to the needs and resource potential within their region. In this case the assistant and rural cooperatives can encourage the farmer active participation on various activities of the farmer groups.

## CONCLUSION AND RECOMMENDATION

This study aims to formulate an institutional strengthening strategy in order to optimize the management of dryland farming. By using a qualitative approach, this study is conducted in five villages within five districts with the same characteristics with the macro in the Ex-Surakarta Residence, i.e, Boyolali, Wonogiri, Sragen, Klaten, Sukoharjo, and Karanganyar.

The results show that the institutional agribusiness on dryland is still weak. It requires a strategy to manage the institutions of dryland. The strengthening itself includes the institutions within the field of peasants activities, human resources quality, supporting and development facilities, and also the institutional strengthening of organizations associated with peasants.

Based on the findings, it is recommended to do some strategies such as: (1) the need for partnership between the peasants and the marketer's output and/or input providers, (2) the need for the institutional development of human resources of peasants, (3) the need for assistance among the peasants, particularly in the marketing process, (4) various strategies which can be performed such as strengthening the capital network, etc.

In order to ensure that all of the above objectives can be achieved properly, it is recommended that further research intensify the involvement of all institutions and parties related to dryland agriculture management. The next researchers are also required to evaluate the extent to which these strategies can be applied to ensure

the achievement of these objectives and what obstacles are faced in implementing these strategies.

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