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Collective action: Improving smallholder rice farmers' value chain in Yogyakarta, Indonesia

A thesis presented in partial fulfilment of the requirements for the degree of

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Abstract

Collective action has been widely accepted as one of the strategies to improve smallholder farmers' capability to gain benefit from the agrifood value chain. This is also part of the working policy of the Government of Indonesia. Nevertheless, there is little empirical evidence for staple food farmers, particularly rice, in organising collective action and many such attempts have not met the policy's implementation objectives. Considering the importance of rice agribusiness in Indonesia, therefore, there is a need to investigate experiences of smallholder rice farmers who work collectively and are able to improve their value chain and gaining benefit from it. The objectives of this study were to identify and describe what benefit captured through collective action and how, and; to identify and describe how these farmers act collectively within a group and why. The research question was answered and objectives addressed by using a qualitative single case study. A farmer group named Gapoktan Sidomulyo was selected, as it was identified by the central and local government as a well-developed collective farmers' group. Data was collected through semi-structured interviews with farmers and other actors relevant to the group development.

This study found that collective action helped smallholder rice farmers to build a competitive advantage. This action enabled them to improve production capacity and product quality, as well as human capability and bargaining power. This also helped them to reduce the number of intermediaries. Therefore, they can capture the potential value offered by the rice value chain. This study also highlighted essential factors for smallholder rice farmers' collective action: Firstly, this action required incentives and support as well as a motivated group of farmers. Even when collective action was supported by government, it was essential to motivate farmers to act collectively and see the benefits for doing so. Secondly, trust and a shared vision between members of the farmer group was important element for collective action. These formed the basis for building horizontal relationships between farmers. This affected the reciprocity between them and their commitment. Thirdly, in a group that was heterogeneous, in terms of religion and reliance on farming as an income source, group cohesion could be achieved through effective group management, which means management that promoting transparency and active communication between farmers and the leadership

team, and giving an opportunity for each actor within the group to play their role. These reduced the potential of conflict and maintain the farmers' awareness on the group so that they keep engaged within the group. Fourthly, leadership with strong motivation, good interpersonal skills, social awareness, as well as administration and marketing skills were essential for the group's development. Unlike to what has been identified in many studies, the leadership could also be provided by a team of people, instead of relying on an individual. Fifthly, maintaining the active members and the leadership team's participation was essential as they were the key actors within the group. For the active farmers, this was achieved through: facilitating members to raise their voice and be involved in decision making, involving them to enforce rules, and conducting activity that attract them to attend regular meetings. Meanwhile, for the leadership team members, this could be achieved through conducting an appropriate leadership team selection process and acknowledging their effort in fostering the group. Lastly, despite there was a culture to work as a group, it was important for having trusted external agents to facilitate farmers and motivate them to act collectively, particularly when this required money in initiating the action. The support from external agents, such as technology and finance, was also important to build farmers capability in improving the value chain. In addition, this case highlighted that only some farmers were able to gain benefit through this action and they were who can produce consistently volume beyond their household requirements.

Keywords: Smallholder farmers, collective action, rice value chain, agriculture, rice, Yogyakarta, Indonesia.

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Abbreviations

ADPO	: Agriculture Department Provincial Office
AEHRD	: Agriculture Extension and Human Resources Development Body
AIU	: Agriculture Input Unit
AMFU	: Agriculture Micro Finance Unit
AMU	: Agriculture Machinery Unit
CBIYO	: Central Bank of Indonesia Yogyakarta Office
DGPMAC	: Directorate General of Processing and Marketing of Agricultural Commodities
FSU	: Food Stock Unit
Gapoktan	: Gabungan Kelompok Tani
GHP	: Good Handling Practices
GMP	: Good Manufacturing Practices
IFAP	: International Federation of Agricultural Producers
Kades	: Kepala desa
LFDP	: Local Food Distribution Program
MoA	: Ministry of Agriculture of Republic Indonesia
NFSA	: National Food Security Agency
NGO	: Non-Government Organisation
POFSD	: Provincial Office Food Security Department
Poktan	: Kelompok Tani
RADP	: Rural Agribusiness Development Program
ROAD	: Regency Office Agriculture Department
ROADFSD	: Regency Office Agriculture Department Food Security Division
ROADPMD	: Regency Office Agriculture Department Processing and Marketing Division
RPDU	: Rice Processing and Distribution Unit
RPURP	: Rice Processing Unit Revitalisation Program

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Chapter 1. Introduction

1.1. Background

Agriculture, particularly food-crop production, is an important sector in Indonesia. It not only contributes to national food security, but also to the national economy. The food-crop sector, which is dominated by rice farming, is significantly important to national food security as it provides the staple food for more than 237 million people (BPS-Statistics Indonesia, 2010). In 2013, rice production was 38% of the total food crop production (Ministry of Agriculture, 2015b) and provided for domestic rice consumption, which was higher than the average rice consumption in most Asian countries, 134.62 kg/capita/annum compared to around 70 kg to 130 kg/capita/annum (IRRI, 2016).

The agriculture sector has a significant role in the national economy. During 2010-2014, for example, the agriculture sector contributed 10.26% (on average) to the gross domestic product, with one-third from food crops, particularly rice (Ministry of Agriculture, 2015b, 2015c). Moreover, rice agriculture employed more than an estimated 14.14 million people (BPS-Statistics Indonesia, 2013b), or provided approximately 79% of total employment in food crop agriculture (BPS-Statistics Indonesia, 2013b). In total, rice agriculture provided approximately 12.5% of national employment, which is mainly located in the rural area (BPS-Statistics Indonesia, 2015a; Ministry of Agriculture, 2015c).

Meanwhile, the rice value chain has been changing. In Indonesia, the number of modern markets had increased ten times during 1999-2009 (Dyck, Woolverton, & Rangkuti, 2012). This is similar to what has happened in Asia. Reardon et al. (2014) found that the rice value chain in Asia had changed, from the up-stream level to the down-stream level. They show that rice farming in Asia had transformed from subsistence agriculture to more commercial agriculture and the rice chain had shortened.

The rice value chain transformation in Asia has created opportunities for rice producers to improve their value chain (Reardon et al., 2014). However, this may not have always been working, particularly for smallholder farmers (Reardon et al., 2014). This has also occurred in Indonesia, where rice agriculture is dominated by small farmers. Mostly,

they do not have sufficient land area to be economic (Ministry of Agriculture, 2010b). In 2013, the average land holding of Indonesian farmers was 0.6 ha/household (BPS-Statistics Indonesia, 2013a), and these households produced less than 8 tonnes of rice per annum (Ministry of Agriculture, 2015b). They do not earn much money and have constraints in accessing financial resources and agricultural technology (Ministry of Agriculture, 2010a, 2015c).

Regarding the current rice value chain situation and the nature of the rice sector in Indonesia, the Ministry of Agriculture of Indonesia (MoA) has been conducting rice agriculture development programmes. These programmes are not only helping to improve the rice production, but they are also helping to build the farmers' capacity to increase their ability to compete within the rice value chain (Ministry of Agriculture, 2010a). For instance, there was a Rice Processing Unit Revitalisation Program (RPURP), which provided subsidies to build infrastructure (e.g. buildings) and to facilitate technologies (e.g. rice processing machinery) that could only be accessed by groups of farmers (Direktorat PHP, 2015). This means individual farmers have to belong to farmer groups to get access to the programmes. Therefore, this has also encouraged farmers to work collectively. Overall, the programs offered by the government are aimed to support smallholder rice farmers to improve their capability, add value to their produce, and have greater power to access value from the rice chain (Direktorat PHP, 2015; Ministry of Agriculture, 2010a).

However, encouraging farmers to act collectively so that they can improve their value chain is not a simple project. Many such attempts have not met the project aims. Some farmer groups formed to gain access to the government programs only (Syahyuti, 2010) and only a few actually built industrial capability. Barret and Berdegue, as cited in Fischer and Qaim (2012) assert that even though many studies show that collective action enables the smallholder farmers' to improve their ability to capture value from market, there is little empirical evidence for staple foods, such as grains.

1.2. Research Problem

It is widely discussed in the literature that collective action is one of the strategies for smallholder farmers to improve their capability and capture more value from the agrifood value chain. The Indonesian Government designed programmes through the

MoA, which encourage small-scale rice farmers to work collectively by forming a group to build capability so that they are able to capture benefits through this action and gain more value from the rice value chain. However, there are only a few examples of groups that have actually achieved this.

Considering the importance of the rice sector for rural economic development in Indonesia, there is a need to investigate experiences of smallholder rice farmers who have worked collectively and improve their capability so that they gain benefit from the value chain. In order to do that, a collective group that has accessed the government programmes was selected. The group, Gapoktan Sidomulyo, was selected because they were identified as a group of smallholder farmers who have been able to organise their members, have optimized the external support and improved their value chain. However, no in-depth investigation has been conducted in order to understand the contributing factors behind their performance.

This research aims to get a deeper understanding as to how this group has achieved this level of performance. It will provide insight for the government and/or other farmer groups and/or other institutions as to what may be required for organising collective action so that farmers can gain the benefit from the rice value chain. Findings from this research will also contribute to the body of literature and the organisations who want to be involved in rural economic development through collective action.

1.3. Research question

How does a group of smallholder rice farmers in Indonesia act collectively and how through this they gain benefit from the rice value chain?

1.4. Objectives

1. To identify and describe what benefit captured through collective action and how.
2. To identify and describe how these farmers act collectively within a group and why.

Chapter 2. Study Country

2.1. Introduction

This chapter presents background information about agriculture, particularly, rice agriculture and the rice value chain in Indonesia. Geographical and climate information is given, followed by a description of the different types of crops that are cultivated in Indonesia. It also shows the spread of main commodities in each island. Subsequently, there is a highlight about the rice agriculture in Indonesia where it informs about the rice production, rice yield, rice farming system, and rice varieties that are cultivated by farmers. Moreover, this chapter explains the rice industry and the actors involved in the rice value chain in Indonesia, including the government involvement.

2.2. Country description

2.2.1. Geographic situation



Figure 1. Map of Indonesia
Source: (The University of Texas, 2002)

Indonesia is an archipelago country that is located in the equatorial line (see Figure 1). It is situated between the Asian and Australian Continents and between the Indian Ocean and the Pacific Ocean. It is bordered by Malaysia, Singapore, Philippines,

South China Sea, Australia and Indian Ocean, Papua New Guinea and Timor Leste. It consists of 34 provinces spreading over five major islands and four archipelagos, namely Sumatera (Andalas) Island, Jawa (Java) Island, Kalimantan (Borneo) Island, Sulawesi (Celebes) Island, and Papua Island and Riau Archipelago, Bangka Belitung Archipelago, Sunda Islands, and Maluku Archipelago.

Kalimantan is the largest island. It covers 28.48% of the total area, followed by Sumatera Island (23.86%), Papua Island (Indonesian territory only) (21.78%), Sulawesi Island (9.86%), and Java Island (6.77%) (BPS-Statistics Indonesia, 2015b). However, the most populated island is Java Island. It is inhabited by 56.97% of the total population in Indonesia (approximately 250 million people). Next to the Java Island is Sumatera Island, Sulawesi Island, Kalimantan Island, and Papua Island (20.29% ; 7.32% ; 5.98% ; and 1.57%) (BPS-Statistics Indonesia, 2015b).

2.2.2. Climate

The tropical climate in Indonesia is suitable to grow rice. According to the Aceh Agriculture Research Agency, the optimal temperature to grow rice is between 24⁰C and 29⁰C while the optimal rainfall is more than 1,600 mm/annum (BPTP Aceh, 2014). In general, Indonesia has a tropical climate. In 2013, the average temperature ranges between 23.5⁰C and 28.77⁰C. In Sumatera Island, the average temperature was ranged from 25.13⁰C to 28.77⁰C. In Java Island, the temperature was ranged from 23.50⁰C to 28.20⁰C. Meanwhile, Sunda Islands, Kalimantan Island, Sulawesi Island, Maluku Islands, and Papua Island have a similar temperature range, between 26.37⁰C and 27.90⁰C (BPS-Statistics Indonesia, 2015b).

Regarding the rainfall volume, in general, it was ranged between 905.70 mm and 4,627.40 mm. In Sumatera, it was ranged between 1,623.60 mm and 4,627.40 mm. In Java Island, it was between 2,270 mm and 3,573.10 mm. In Kalimantan Island, the deviation was smaller than in Java Island. The rainfall was between 2,854.10 mm and 3,382.00 mm. Meanwhile in Sunda Islands, it was around 2,100 mm. (*See Table 1 for the climate information in 2013*).

Table 1 The average temperature and amount of precipitation in 2013

Region	Average Temperature ($^{\circ}\text{C}$)	Number of Precipitation (mm)
Sumatera Island	25.13 - 28.77	1,623.60 - 4,627.40
Java Island	23.50 - 28.20	2,270.00 - 3,573.00
Sunda Islands (Bali, West Nusa Tenggara, East Nusa Tenggara)	27.40 - 28.25	2,098.90 - 2,155.10
Kalimantan Island	26.70 - 27.43	2,854.10 - 3,382.00
Sulawesi Island	26.37 - 27.65	905.70 - 3,972.00
Maluku Islands	27.00	2,713.00
Papua Island	27.30 - 27.90	3,419.10 - 4,033.00

Source: (BPS-Statistics Indonesia, 2015b)

2.3. Agriculture sector in Indonesia

2.3.1. Agriculture commodities

Indonesia produces different agriculture commodities, such as rice, sugar cane, oil palm, cassava, maize, cocoa, coffee, and tea (see Table 2). These commodities are grown in different areas in Indonesia. For example, rice and maize are grown mostly in Java and Sumatera Island. According to the annual on-farm rice production survey, in 2013, Java Island contributed approximately 52% of national rice production, followed by Sumatera Island with approximately 23%. Similarly, around 54% of maize was produced in Java Island and around 22% was produced in Sumatera Island (BPS-Statistics Indonesia, 2015b).

Java Island and Sumatera Island not only contribute to the national rice and maize production, Java Island also contributes for some estate crops such as tea, sugarcane, and tobacco. More than 60% of these commodities are produced on Java Island. Meanwhile, the other estate crop commodities, such as palm oil, rubber, and coffee are produced mostly in Sumatera Island (approximately 69%; 74%; and 71%) (BPS-Statistics Indonesia, 2015b).

Table 2 Main Commodities (based on Volume) in each Island in Indonesia

Area	Main Commodities
Sumatera Island	Rubber, coffee, palm oil, coconut, cocoa, cassava, maize, rice
Java Island	Rice, cassava, maize, tea, tobacco, sugarcane, coconut
Kalimantan Island	Palm oil, rubber, and timber
Sulawesi Island	Coconut, cocoa, maize, and rice
Papua Island	Timber

Source: (BPS-Statistics Indonesia, 2015b)

2.3.2. Producers in Indonesia

Most of the producers in Indonesia are classified as smallholder farmers, in general, holding an area of less than one hectare. In 2013, the average land holding for rice, maize and cassava agriculture was only around 0.2 hectare to 0.6 hectare. A similar situation also occurred in cocoa, tea, sugarcane, and tobacco. Only palm oil and rubber producers held more than one hectare. In addition, some commodities were also produced by private or state companies. In 2013, the palm oil and tea plantation companies held more than 50% of the farming area (BPS-Statistics Indonesia, 2013a).

Most smallholder farmers have difficulty in accessing the financial capital from formal funding institutions, such as banks. Most of the land that is owned by the smallholder farmer is not certified, therefore, they cannot provide the collateral that is asked by the bank. As a result, most of the smallholder farmers tend to access the finance from individuals with a very high interest rate (Ministry of Agriculture, 2015c).

Moreover, farmers in Indonesia, in particular, the staple food farmers, are dominated by the old people with a low level of education. Meanwhile, the young, well-educated people tend to work in the city. They do not want to work as farmers. This has presented difficulties in transferring and implementing new technology in the rice agriculture (Ministry of Agriculture, 2015c).

2.4. Indonesia Rice Agriculture

Indonesia is the third largest rice producer in the world after China and India (FAO, 2015a). In 2014, the (unhusked) rice production was 70.8 million tonnes (FAO, 2015a), which was double that of Thailand and higher than Vietnam (see Table 3). However, unlike Thailand and Vietnam, Indonesia is not considered a rice exporting country (FAO, 2015b). Indonesia still has to fulfil the domestic demand (Kueh & Tjun, 2013), that is higher than other ASEAN countries (Wailes & Chavez, 2012).

Similarly, the rice yield in Indonesia is also high, compared to some other Asian countries. In 2014, the average rice yield in Indonesia was 5.15 tonnes per hectares (FAO, 2015a). It was lower than the yield in China and Vietnam (see Table 3).

However, it was higher than some other countries, such as Thailand, Myanmar, and India.

Table 3 Rice production in some producer countries in Asia in 2014

Country	Rice production (tonnes)	Rice yield (tonnes/hectare)
Cambodia	9,324,000	3.01
China	208,239,610	6.75
India	157,200,000	3.62
Indonesia	70,846,460	5.13
Myanmar	26,423,300	3.89
Philippines	18,967,830	4.00
Thailand	32,620,160	3.01
Vietnam	44,974,210	5.75

Source: (FAO, 2015a)

Farmers in Indonesia grow different varieties of rice. In general, they cultivate IR-64, Ciherang, Ciliwung, and Mekonga. These varieties have different ranges of growing periods and different paddy yields. Ciherang, which is the rice variety most cultivated by farmers in Indonesia (IRRI, 2016), can be grown between 116 and 125 days. The paddy yield is between 6 tonnes and 8.5 tonnes per hectare (see Table 4).

Table 4 Rice varieties in Indonesia

Variety	Yield (tonnes/ha)	Growing Duration (days)
IR-64	5.0-6.0	110-120
Ciherang	6.0-8.5	116-125
Ciliwung	5.0-6.0	117-125
Mekongga	6.0-8.4	116-125
Cibogo	6.98-8.0	110-125
Cigeulis	5.0-8.0	115-125
Bondoyudo	6.0-8.4	110-120
Batang Gadis	6.0-7.6	97-120

Source: (BPTP Aceh, 2014)

Rice can be cultivated all year round, although, in general, farmers grow rice based on water availability. The rice growing season is classified into three periods. The first period is the main growing season which is during the rainy season. It starts around November and ends in March. Farmers will have a harvest feast by the end of the main growing season. The second is the ‘*gadu*’ growing season. It starts after the rainy season in April and ends at the beginning of the dry season in July. The third is the dry growing season, which starts in August and ends in October. Unlike the main growing season

and ‘*gadu*’ season, farmers tend to produce a small volume of rice (Indonesia Center for Rice Research, 2015).

In Indonesia, rice is generally cultivated in lowland areas. The Indonesia Agriculture Census 2013 reported that approximately 90% of paddy fields were classified as lowland areas. Subsequently, most of the paddy fields in the rice centre provinces are classified as irrigated areas. In Java Island, 77.45% of paddy fields had access to the irrigation system (Ministry of Agriculture, 2015a). Similar to Java Island, most of the paddy fields in Sulawesi Island and Sumatera Island had access to the irrigation system (75.51% and 52.32%).

There are several rice cultivation systems that are used by Indonesia farmers, such as conventional (indirect cultivation), ‘*tanam benih langsung/tabela*’ (direct cultivation), system of rice intensification (SRI), and ‘*pita tanam organik*’ (Lita, Soekartomo, & Guritno, 2013). However, the most common systems used by farmers are the conventional, ‘*tabela*’, and SRI. In the conventional rice production system, farmers grow rice seeds on the seedbed before they plant it in the paddy fields. On the other hand, in the *tabela* system, farmers directly plant the seed in the paddy field. Meanwhile, SRI is quite similar to the conventional system. It involves the seedbed stage before farmers plant the rice seed in the paddy field. The distinguished factors are the organic materials used and the water supply during the rice production. The Directorate of Land Extension and Management (2014) in their SRI manual, describes the principles of SRI, including: healthy soil management involving organic materials in the early stage, dry seedbed (not submerged) but sprinkled daily, one hole one seed and shallow planting, and keeping the soil muddy to dry (not submerged) unless in the weeding process.

2.5. The history of Indonesia Government policies on rice agriculture

The Indonesian Government plays a significant role in rice agriculture development. In the early period of the country (1950s-early 1960’s), the government organised a pilot project called ‘*Panca Usaha Tani*’ program. This project was conducted in some areas in order to intensify the rice production. By this program, the Government tried to develop farm irrigation, enhance qualified seed utilization, distribute fertilizer, and develop the integrated pest management and good farm management (Hafsah &

Sudaryanto, 2004). The '*Panca Usaha Tani*' program had been continued and expanded to some other areas in Indonesia through a mass dissemination program named '*Bimbingan Massal (Bimas)*' (Hafsah & Sudaryanto, 2004). In 1969, the Government improved this program to a National *Bimas* program (Hafsah & Sudaryanto, 2004). In this project, the Government provided soft loan, qualified seed subsidy, and set the chemical fertilizer and pesticide price. They also intervened to the rice price through floor price and ceiling price policy. Moreover, the Government intruded in the domestic rice market through BULOG (Mardianto, Supriatna, & Agustin, 2005).

In post-reform era, the Government changed the agriculture development policy. They introduced domestic rice market liberalisation, eliminated BULOG's authority in distributing rice to market, and erased the fertilizer subsidy (Maulana, 2012). However, the Government still has an important role for small farmers' development.

In 2013, the Government enacted a farmer protection and farmers' empowerment law. This act legitimates the Government to assist farmers through a farmer group or combined group of farmers to access inputs and technology, reduce price risk, and help them during crop failure. Moreover, the Government also has responsibilities to provide good infrastructures such as roads, electricity, dams, irrigation networks, ports, and market infrastructures. For the market infrastructure, the Government has built farmers' markets in many provinces in Indonesia in order to enable farmers to get a direct access to end-consumers.

For the period between 2014 and 2019, the MoA has set five main objectives in agriculture development; they are: enhancing food supply and food diversification in order to achieve food sovereignty, improving agriculture commodity's value and competitiveness, enhancing the availability of bio-industry and bio-energy materials, improving farmers' livelihood, and improving Government officers' performance (Ministry of Agriculture, 2015c). For the rice sector, there are various programs in order to improve the rice productivity, such as open new farming areas, facilitate farmers with agriculture machinery and post-harvest technology, develop the irrigation network, improve pest management, and develop farmers' human capacity. In addition, the MoA facilitates farmers to add value to their produce and improve their ability to participate within the rice market.

2.6. Rice consumption and rice consumers in Indonesia

According to the International Rice Research Institute, in 2014, the rice consumption rate in Indonesia was in the third position after China and India. The national rice consumption was around 38 million tonnes. It was much lower than rice consumption in China (around 144 million tonnes) and India (around 98 million tonnes). However, the rice consumption in Indonesia was higher than two other main rice producers in the ASEAN region, Thailand (around 10 million tonnes) and Vietnam (around 22 million tonnes) (IRRI, 2016). Subsequently, according to IRRI, in 2013, the rice consumption per capita in Indonesia was 134.62 kg/cap. It was lower than China (204.01 kg/cap) and Vietnam (144.56 kg/cap), yet it still higher than two major rice exporter countries, Thailand (114.57 kg/cap) and India (69.49 kg/cap) (IRRI, 2016).

Rice consumption in Indonesia has tended to decrease both in urban and rural areas (Ministry of Trade, 2013). It was reported that the Indonesian young generation tend to consume less rice as they prefer to diversify their food so that they can enrich the nutrition intake (Kueh & Tjun, 2013). They also argued that this situation was influenced by the wealth improvement of the younger segment population.

There are different groups of rice consumers in Indonesia. A study by BPS Statistics Indonesia and the National Food Security Agency classified the rice consumers into four groups, as follows: households, industrial sector, hotels and food services, and other services (e.g. hospitals, and educational services) (BPS-Statistics Indonesia, 2012c). The household group was the largest rice consumer in Indonesia. This group dominated the rice market with approximately 79% of the market share. Meanwhile, the hotel and food services group was only 18.15% of the market share and the rest went to the other sectors.

2.7. The rice value chain in Indonesia

Many studies show that, in general, Indonesian rice farmers did not sell their product directly to end consumers (Mardianto et al., 2005; Sobichin, 2012; SPIRE Research and Consulting, 2013; Supriatna, 2005). They commonly sell the unhusked rice to the intermediaries, which can be local traders, non-local traders or rice millers (Mardianto et al., 2005; Sobichin, 2012; SPIRE Research and Consulting, 2013; Supriatna, 2005).

In North Sumatera Province, there are two common rice distribution channels (Supriatna, 2005). In the first channel, rice producers sell their produce to the local traders. The local traders then sell the rice to the rice collectors at the district level. Thereafter, the produce is delivered to the rice processor at the regency level, wholesalers, retailers, and the end consumers. While in the second rice distribution channel, rice producers sell their produce to local rice collectors, which are the village rice millers' agent. Subsequently, the rice millers will process the unhusked rice and sell it to local traders before it is delivered to the end consumers. A quite similar pattern is shown in Batang Regency, Central Java Province as, in general, the rice farmers in Batang sell their produce to local rice collectors or local rice processors (Sobichin, 2012).

Subsequently, a study by Mardianto et al. (2005) reported a different pattern of rice distribution channel in Karawang Regency (West Java Province), Ngawi Regency (East Java Province), and Sidrap Regency (South Sulawesi Province). All of these areas are the main rice producer within the provinces. In Karawang, the rice market not only involves the local traders and wholesaler, but also the inter-island trader. Meanwhile, in Ngawi, there was inter-province trader participation in the rice market. A different pattern was shown in Sidrap. Farmers stocked their produce for the household consumption and sold the surplus to local traders, local rice processors, and rural cooperatives.

In brief, all of these studies showed that Indonesia has a long rice distribution chain which involved 3-7 intermediaries before rice is delivered to the end consumers. In general, the actors involved in the rice value chain in Indonesia are: local traders, collectors, wholesaler, rice millers, rural cooperatives (KUD), National Logistics Agency (BULOG), wholesaler market and retails (see Figure 2) (Mardianto et al., 2005; SPIRE Research and Consulting, 2013).

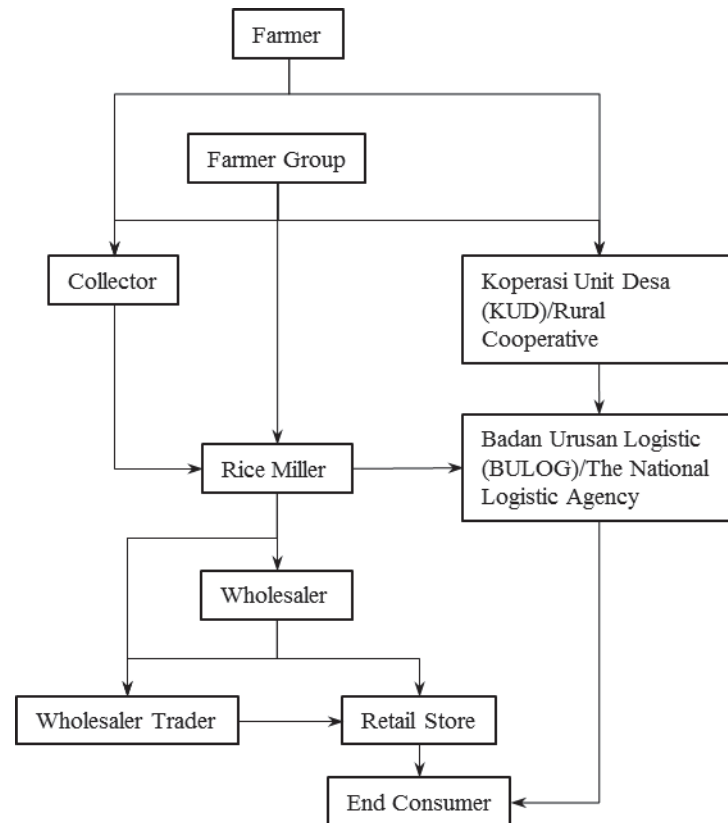


Figure 2. Generalised rice value chain in Indonesia

Source: (Mardianto et al., 2005; SPIRE Research and Consulting, 2013)

In terms of the value distribution, Aji (2012) found that the long rice distribution channels did not present benefits for farmers to improve the rice value. The value added was mostly created and retained by the rice millers. The rice millers generally receive higher net margins compared to other actors within the chain. In addition, the length of the rice chain influences the distribution costs and it reduces the profit margin of farmers (Sobichin, 2012). Consequently, the rice value chain system tends to diminish the farmers' market information access (Mardianto et al., 2005). As a result, they cannot improve their market participation and this may affect farmers' incomes because it curbs the farmers in setting the margin in accordance with the market situation (Mardianto et al., 2005) and they tend to get a low rice price and suffer from losses (Widyarini, 2012), especially when the farmers do not process and add value to the unhusked rice (Sobichin, 2012).

2.8. The actors within the rice value chain in Indonesia

In addition to farmers, there are actors involved in the rice value chain system in Indonesia, as follows:

2.8.1. Farmers group (*poktan*)/combined farmers group (*gapoktan*)

In the technical guidelines of farmer group development, the Indonesian Ministry of Agriculture (2013) define ‘farmer group’ (*poktan*) as a group of farmers (crops/livestock/state crops) which consist of 20-25 participants that form the organisation based on mutual interest; a similar social, economic, and resources environment; a similar commodity; and solidarity to develop members’ farms. This group should be developed based on six principles, that is: freedom, openness, participation, self-reliance, equality, and partnership. Additionally, the group has three main functions, such as to facilitate farmers to learn, to facilitate farmers to build networks, and to facilitate farmers to develop their farms.

Meanwhile, combined farmer groups (*gapoktan*) refer to a group that consists of different farmer groups. The combined farmer groups are usually formed by 100-150 farmers with total land holdings of around 80-140 hectares (SPIRE Research and Consulting, 2013). Nuryanti and Swastika (2011) assert that these groups mostly are not formed based on farmers’ initiatives. They formed these groups as a response to the government subsidy programs. They added that these groups have important roles as a forum to improve farmers’ business and organisational management capability, to build network among farmers, and to enhance the adoption technology.

2.8.2. Collector

SPIRE Research and Consulting (2013) reported that collectors play a role as traders that operate as syndicates. They buy the unhusked rice directly from farmers. Their main roles are assessing the price of unhusked price, bagging, weighing, and making payments to farmers. They actively interact with farmers/farmers’ groups prior to the harvest season to calculate (forecast) production quantity.

2.8.3. Rural cooperatives (KUD)

Most of the rural cooperatives provided credit for farmers who are registered as the cooperatives' member. These cooperatives also help farmers to market their produce (SPIRE Research and Consulting, 2013). However, farmers tend not to sell their product to the rural cooperatives. According to (Mardianto et al., 2005), farmers in Java Island tend to avoid rural cooperatives as they generally give lower prices than other buyers. Commonly, farmers sell their product to the rural cooperatives because they owe some money to them, or they want to maintain their access to credit and agriculture inputs that have been provided by the rural cooperatives (Mardianto et al., 2005).

2.8.4. Rice Miller

Rice millers have an important role in the rice value chain system. Rice millers are the industrial actors that link the producers with consumers. Rice millers transform the unhusked rice from farmers to the end product and sell it to the next chain actor (Widyarini, 2012).

In some areas, rice millers also act as collectors or wholesalers (Widyarini, 2012). A rice mills census by BPS-Statistics Indonesia (2012b) show that approximately 88% of more than 180.000 rice mills in Indonesia were operated as a private cooperation, sole proprietorship, and limited partnership. There were only 12% of rice mills that were operated as cooperatives or farmers'-owned companies. In addition, around 92% of the rice mills in Indonesia were classified as small-scale industries (BPS-Statistics Indonesia, 2012a).

2.8.5. Wholesaler

Wholesalers make rice transactions in large volume (Widyarini, 2012). Their warehouses are located in the provinces or in the capital of districts or sub-districts (SPIRE Research and Consulting, 2013; Widyarini, 2012). They act as a hub that supply rice to wholesaler market traders and other traders in retail markets, stalls, and shops (Mardianto et al., 2005; SPIRE Research and Consulting, 2013).

2.8.6. Wholesaler market trader

In general, the wholesaler market traders supplied rice to retailers, other merchants, and commercial users (SPIRE Research and Consulting, 2013; Widyarini, 2012). They had influence on rice price formation due to their ability to control domestic rice supplies (SPIRE Research and Consulting, 2013). One of the wholesaler market trader centres is located in Jakarta, named *Pasar Induk Beras Cipinang* / Cipinang Rice Market Centre (PIBC). This market has been largely supplied from West Java province and the rest from Central Java, East Java, and outer Java, such as South Sulawesi and South Sumatera (Surjasa, Gumbira-Sa'id, Arifin, Sukardi, & Jie, 2013). This market distributes rice to the area around Jakarta, such as Bogor, Depok, Tangerang, Bekasi, and other areas in West Java, Central Java, and East Java (Surjasa et al., 2013).

2.8.7. Retailers

There are two kinds of retailers in the rice market, the traditional retailer and the modern retailer (supermarket, hypermarket). The traditional retailers commonly get rice from rice traders at the provincial level and wholesaler market traders (SPIRE Research and Consulting, 2013). Meanwhile, the modern retailers obtain rice from rice processors or rice millers.

2.8.8. End consumer

End consumers can be individuals or groups that purchased rice from traditional retailers or modern retailers or wholesaler market traders.

2.8.9. The National Logistic Agency (Badan Urusan Logistic/BULOG)

BULOG has an authority to stabilize the rice price and protect farmers from losses, in particular, during the harvest season (BULOG, 2012). They buy rice and the unhusked rice from farmers and rice millers with a purchasing price that has been decided by government (HPP) (BULOG, 2012). HPP is set periodically by the MoA based on the intrinsic quality of rice and the unhusked rice, such as water content, milling degree, and the percentage of the broken rice (Maulana, 2012).

Furthermore, BULOG also has the authority to provide and distribute subsidized rice for low income society (BULOG, 2012). They are responsible to ensure food

security in the household level, particularly for the lower income household (BULOG, 2012). In addition, BULOG has an authority to maintain the national rice safety stock in order to deal with disaster and emergency situations (BULOG, 2012).

Chapter 3. Literature Review

3.1. Introduction

This chapter outlines a review of the literature, aimed to answer the research question: how does a group of rice farmers in Indonesia act collectively and how through this they gain benefit? This chapter starts by defining value chains in the agriculture development context. Thereafter, it highlights the situation that is faced by small farmers within the emerging rice chain, the transaction costs and contract farming definition. It also illustrates the options to upgrade value within a value chain system.

Subsequently, this chapter explains collective action theory, and presents some empirical evidence of small farmers' collective action. This part incorporates the concept and definition of collective action in the agriculture context, the triggers and drivers of collective action, and the organisational typology of collective action. The benefits of collective action for small holders in improving their market participation in the value chain system are presented. This part also gives some empirical evidence from the literature and is followed by the factors that facilitate collective action for market improvement and the challenges of organising collective action.

3.2. Value chain

3.2.1. Defining value chain in agriculture

A large body of research has been undertaken on value chain from different perspectives and a variety of definitions of value chain proposed by scholars (Kaplinsky, 2000; Lazzarini, Chaddad, & Cook, 2001; Trienekens, 2011). Kaplinsky (2000) defines value chain as “the full range of activities which are required to bring product or service from conception, through the intermediary phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use” (p.121). A similar definition comes from Gereffi, Humphrey, and Sturgeon (2005) who define value chain in the most basic form as “the process by which technology is combined with material and labour inputs, and then processed inputs are assembled, marketed, and distributed” (p.79). It can be seen that both scholars emphasize the value added process and the product distribution to the end consumers.

A more comprehensive concept, which is used in this study, has been proposed by Trienekens (2011) who define a value chain as “a network of horizontally and vertically related companies that jointly aim at/work towards providing products or services to market” (p.59). In this regard, he proposes that the value chain in agriculture not only covers the product transformation process, but also the market structure and governance form between actors, vertically and horizontally.

3.2.2. Transaction costs

Transaction cost can be defined as the costs that occur during the planning and implementation phases of an operation, and also during the phase of process supervision, to ensure that the processes are progressing in accordance with the plan (Williamson, 1981). According to Clemons, Reddi, and Row (1993), transaction costs generally comprise two major components, coordination costs and transaction risk. Grover and Malhotra (2003) defined the coordination costs as the “cost of exchanging information and incorporating that information into the decision process” (p.459), while transaction risk refers to the potential risk that is caused when other actors shirk the agreement (Grover & Malhotra, 2003). Accordingly, Trebbin and Hassler (2012) argue that in the case of small scale agriculture, the transaction costs are high, for reasons such as: the size of farming household that is relatively small, limited information of farmers, reliability, and underdeveloped infrastructures.

3.2.3. Contract farming

Contract farming refers to “agricultural production carried out according to an agreement between farmers and a buyer, which places conditions on the production and marketing of the commodity” (Shepherd, 2013, para. 2). The purpose of contract farming is to integrate the smallholders into promising markets, for example, supermarkets and modern retails (Miyata, Minot, & Hu, 2009). Moreover, it also aims to reduce the price risk and the overhead cost, enhance smallholder income, improve food quality and safety, improve productivity and supply chain efficiency (Abebe, Bijman, Kemp, Omta, & Tsegaye, 2013; Miyata et al., 2009; Wang, Yanbing, & Delgado, 2014). According to Wang et al. (2014), contract farming is an essential aspect in the agriculture transformation (to modern agriculture) as this, for

example, may improve the product quality and safety for consumers, reduced risk for farmers and improve farmer's productivity.

3.2.4. Capturing value from value chain systems

Trienekens (2011) suggests three options to upgrade and capture more value within the chain, they are: production upgrading, upgrading of value chain network (market upgrading), and upgrading of governance form. In this section, the concept of value upgrading that is offered by Trienekens, is combined with other scholars' theories and empirical evidence. In brief, the value upgrading can be seen in Figure 3.

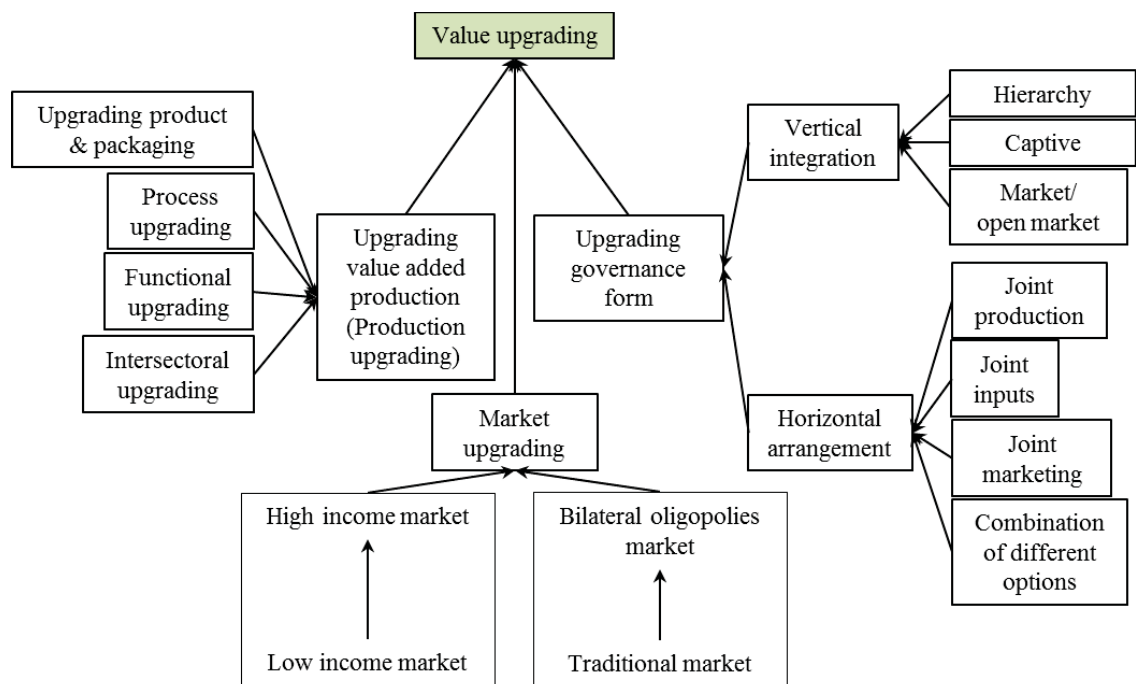


Figure 3. Options to upgrade value

3.2.4.1. Production upgrading

In the production level, value can be added through different actions. Kaplinsky (2000) suggests that a value can be added by introducing new products or developing old products and changing the production activities. Similarly, Trienekens (2011) suggests that value-added production can be upgraded through products and packaging upgrading, process upgrading, functional upgrading (in-sourcing production or distribution function), and inter-sectoral upgrading (value-added processes are from other actors).

Studies show that value-added production enables farmers, particularly those who work collectively under farmers' organisation, to capture more benefit from the market (Devaux et al., 2009; Kruijssen, Keizer, & Giuliani, 2009; Trebbin & Hassler, 2012). In the Papa Andina case (Devaux et al., 2009), collective action enables farmers to strengthen their marketing and processing capacity. Collective action supports them to diversify the potato varieties, so that they can obtain more value from market. The markets give a higher price for the new varieties, compared to the native potatoes. Meanwhile, in Thailand, the village people process the Cowa fruits collectively and start making other products such as a local dish, and this has helped them to earn more income (Kruijssen et al., 2009). The Thailand case is similar to the India case, where the value of cashew nuts and mangoes are added through further processing (Trebbin & Hassler, 2012).

3.2.4.2. Market upgrading

Scholars have identified that the type of market is one of the key things that influence farmers, under a farmers' group, to capture benefit from the value chain, as each market has a different character and offers different benefits (Markelova, Meinzen-Dick, Hellin, & Dohrn, 2009; Markelova & Mwangi, 2010). In that regard, this section explains the different types of markets from the type of consumer perspective, and the requirements of product safety and product quality.

Trienekens (2011) suggests that value can also be captured through reaching the right market and being part of the right market. Accordingly, he proposes three different market types of agricultural commodities in developing countries, namely the low-income market, the middle-high income market and the export market. He highlights each market type as follow:

- a. The low-income market: Producers are usually small and practise conventional production systems. These chains are relatively long, thus the market information is limited. In these chains, the value added is distributed to numerous actors. Moreover, these chains deliver a high volume of commodities, but capture relatively low value.
- b. The middle-high income market: The producers may deliver a lower volume than in the low-income market. Nevertheless, they may generate a higher value. It is

indicated that in this type, small farmers tend to work with large intermediaries (e.g. supermarket) under contract.

- c. The export market: Producers tend to become more integrated and have fewer actors. Although the volumes are small compared to local markets, the value added is relatively high.

Meanwhile, based on the requirements on product safety and/or product quality, and the actors that drive the market, Lee, Gereffi, and Beauvais (2012) classify the agrifood market into four different types, namely:

- a. Traditional market: It consists of many producers and retailers that, in general, are small in size. In this market type, the demand and supply coordination are not very clear. The transactions are set based on price and quantity with little, or no, brand recognition. The requirements for public standards are limited to the minimum level and the private standards are least developed. This market presents the lowest entry barriers for smallholder producers as they require minimum standard on product safety and quality. In general, the traditional market is dominating the agrifood value chain in developing countries.
- b. Producer-driven market: In this type, food manufacturers play a main role in organising supply chains. They have strength in supplying and processing key commodities, although they are challenged by large retailers. They influence smallholder producers by intervening in on-farm activities and controlling the international trade of large-scale commodities. In this market type, the product quality, social and environmental standards are expected to develop. The smallholder producers have fewer options for their farm, for instance, in choosing the type of crop to be grown. This is the consequence of having a food manufacture as the actor who is responsible for potential safety failure.
- c. Buyer-driven market: This market emerged as retailers in developed countries have emerged. The retailer-led private standards tend to dominate along with public standards, with focus on food safety, although quality standards are also on the rise. This market type presents a major challenge to smallholder farmers.
- d. Bilateral oligopolies market: This market type is characterised by the existence of producers and retailers with tight chain coordination. This chain provides a supportive environment for the most comprehensive private standards on top of

public rules. Competition is determined by safety and quality. Brand assets are carefully protected from any misuse. This market type poses a higher entry barrier for smallholder farmers than any other types.

From these studies, it can be seen that a higher level market offers higher value to producers (Lee et al., 2012; Trienekens, 2011). However, it is not necessarily easy for the producers, particularly the smallholder farmers, to enter the higher market as it requires higher quality and safety standards, which may not be achieved by the smallholder farmers (Lee et al., 2012). A study in Uganda shows that to shift the market, from local market to high value market, farmers have to meet the product quality, minimum lot sizes and frequency of supply demanded by the market (Kaganzi et al., 2009)

3.2.4.3. Upgrading governance forms

Frederick and Gereffi (2009) argue that the “governance” is important because it relates to the ability of an actor to determine, control and/or coordinate the activities of other actors in the value chain. Referring to some studies by Gereffi and other scholars, Trienekens (2011) suggests that farmers, or the chain actors, can capture more value from upgrading the governance form. In that regard, Trienekens (2011) proposes two different organisational governance arrangements that enable actors within the chain to capture value from markets; they are vertical and horizontal arrangements.

Vertical integration

King, as cited in Peterson, Wysocki, and Harsh (2001) defines vertical coordination as “the alignment of direction and control across segments of a production/marketing system” (p.150). Based on the global value chain perspective by Gereffi et al. (2005) and other scholars, Franz, Felix, and Trebbin (2014) offer different types of vertical arrangement that are relevant in the agriculture context; they are (from less integrated to high integrated): market/open market, captive value chain, and hierarchy.

There are different characters of each degree of vertical integration mentioned by scholars. Peterson et al. (2001) state that the less integrated coordination allows the individual economic actors to follow their self-interest and pursue exchange relationships that are short-term, opportunistic, limited as to information sharing,

flexible, and preserving of the actors' independence. Typically, the cost of switching to new partners are low for both sides (Gereffi et al., 2005). In addition, Franz et al. (2014) state that the less integrated coordination can include purchase from the open market or a simple purchase agreement.

On the other hand, Peterson et al. (2001) argue that the more integrated coordination is characterized by the actors' mutual interests that pursue a long term relationship and benefit sharing, open as to information flow, stable, and supportive interdependence. Moreover, Gereffi et al. (2005) state that the more integrated coordination increases the power of control of a chain actor to the other actors. In addition, Franz et al. (2014) indicate that the actors who have more power may also control the land ownership.

Horizontal arrangements

Trienekens (2011) states that the horizontal arrangement reflects relationships between actors in the same chain links (e.g. between farmers through a farmer association or cooperative). He adds that the collaboration between horizontal actors may include joint purchasing of production inputs, joint use of production facilities, and joint marketing of products. This coordination can also be more sophisticated and involves different combinations of value-added options (e.g. value-added production and inter-sectoral upgrading).

Many scholars identify the horizontal arrangement as collective action (Fischer & Qaim, 2012; Markelova et al., 2009). With respect to the options to upgrade value, collective action can help small farmers to enter larger markets, because it enables them, for example, to deal with transportation and storage issues, to comply with the required quality standards, and reach the necessary scale to supply the market with a certain level of quantity (Markelova & Mwangi, 2010). *Accordingly, as collective action is the core of this study, the horizontal arrangement framework is further discussed as collective action starting from Section 3.3.*

3.2.5. Smallholder farmers' challenges within the rice value chain

It is indicated that the rice value chain, particularly in Asia, has been transformed. Studies in some countries in Asia (China, Bangladesh, India, Vietnam) show that the

rice value chain in Asia has been transformed from subsistence farming to semi-commercialized farming (Reardon et al., 2014). There are changes in some aspects, such as the technology, the rice marketing chain, and the industrial structure (Reardon et al., 2014). They explain that farmers tend to use chemical fertilisers, pesticides, and fungicides, and the farmers also started to use the small-scale production machinery. At the processing level, the actors tend to upgrade and upscale the milling equipment. Subsequently, there are some new trends in the rice market chain, such as 1) the rice market chain tends to be shortened, 2) emerging vertical coordination, 3) diversification of marketed product. In addition, the transformation of rice industry structure can be seen from the reduction of the role of the village trader and the emergence of supermarkets.

In brief, from the studies by Reardon et al. (2014), it is indicated that the rice chain transformation presents opportunities for rice producers. They have more capacity and are more efficient due to the effect of machinery utilisation, they have more market options, and the chain tends to be shortened. However, some scholars argue that there are some requirements to be fulfilled by the rice producers so that they can capture benefit from the value chain transformation. Trienekens (2011), argues that in order to capture the benefits of the transformation, farmers also need to have better control over production and maintain the trade and distribution in order to ensure product quality. Reardon et al. (2014) also indicates that the chain actors have to be aware of the market situation. Therefore, according to Lee et al. (2012), the smallholders who are not ready to deal with the new industrial environment, may not sustain within the industry.

Meanwhile, studies show that improving the industrial capability is often challenging to smallholder farmers. Many scholars show that smallholder farmers have limited access to financial resources (Devaux et al., 2009; Kruijssen et al., 2009; Markelova et al., 2009). Meanwhile, they have to buy the agricultural inputs and hire the agriculture machinery in order to be able to compete within the emerging rice value chain system (Reardon et al., 2014). Furthermore, often small farmers have limited technical skills, limited access to improve technical skills, limited information access on price and technology, limited access to build networks, and inadequate power with other actors (Devaux et al., 2009; Kruijssen et al., 2009; Markelova et al.,

2009). In addition, they face constraints in improving scale economies (Trebbin & Hassler, 2012).

3.3. Collective action

3.3.1. Collective action from the agriculture perspective

Scholars have defined collective action in different contexts, such as rural development projects, agricultural practices, neighbourhood crime watches, and political action and social movements (Meinzen-Dick, DiGregorio, & McCarthy, 2004). Accordingly, defining collective action for a specific purpose is important to clarify its concept in a different context. In this study, the literature describes collective action in the context of small-scale agriculture development.

Meinzen-Dick et al. (2004), state that most definitions of collective action require the involvement of a group of people, a shared interest within the group, and common action that is able to work in order to achieve the shared interest. This action emerges when more than one individual contributes to an effort to realize an objective (Ostrom, 2004). A similar definition is also expressed by Devaux et al. (2009, p. 32), “collective action refers to voluntary action taken by a group to pursue common interests or achieve common objectives”. Moreover, a study in the Andes show that collective action not only involves actors from the same chain level (e.g. between farmers), but also different actors from different chain levels (e.g. between farmers and traders) (Devaux et al., 2009). The collective action enables the actors from different level to pursue their shared objectives.

McCarthy (2004) argues collective action potentially emerges when smallholders face barriers to respond individually, while there is spirit to undertake activities as a group, demonstrated by a certain level of interconnectedness, motivation, and capacity. Markelova et al. (2009) assert that the interdependence among actors, in general, will facilitate collective action. This is linked to what Koelen and Das (2002) call social learning. They argue that social learning is the basis of interaction between actors in a collective action. This comprises the learning process by an individual within a group to work together to define problems, search and implement solutions, and evaluate the value of a solution for a specific practice. In addition, scholars show different factors that motivate farmers to act collectively, such as

improving capacity and market participation and managing the transaction cost issues, as can be seen in the Andes (Devaux et al., 2009) and Thailand (Kruijssen et al., 2009); accessing the government subsidy, as can be seen in Mexico (Hellin, Lundy, & Meijer, 2009) and Indonesia (Syahyuti, 2010). In the Mexican and Indonesian cases, these scholars also found that this motivation was not having a positive impact on the group development, as farmers just wanted the subsidy, not to work collectively.

3.3.2. Collective action typology based on its drivers

The previous section shows the definition of collective action in agriculture and why farmers have the intention to act collectively. It also comprises the concept of social learning as part of collective action. However, it does not describe the drivers of farmer collective action. This section, therefore, encompasses the initiator of farmer collective action.

With respect to the drivers of collective action, Davies, Blackstock, Brown, and Shannon (2004) have distinguished two different types of collective action based on the actors who initiated the action; they are cooperation and coordination. Cooperation is a bottom-up action. It is initiated by the internal actors themselves, for example, farmers. Vorley, Lundy, and MacGregor (2009) identify these types as producer-driven organisations, which mean the drivers of the organisation are small-scale producers themselves, as well as the large-scale farmers. These types of collective actions are often initiated by group members (Meinzen-Dick & Di Gregorio, 2004), someone who is a farmer, or other market chain actor that leads the action, often called the chain champion (Kruijssen et al., 2009). This type can be seen in two farmer cooperatives in Northwest China (Garnevskaya, Liu, & Shadbolt, 2011). In addition, this study found that the group tends to be controlled by an individual when the group is led by a dominant farmer.

Meanwhile, Davies et al. (2004) define coordination as a top-down action that is led by an external actor, for example agency-led collective action. In that regard, Vorley et al. (2009) divides these types into buyer-driven organisation and intermediary-driven organisation. They add that the drivers of buyer-driven organisations are processors, retailers, and exporters, while the drivers for intermediary-driven

organisation are local traders, NGOs and other support agencies, and national and local governments. Most studies show that the intermediary-driven organisations, such as NGO and government agencies, have more roles in initiating smallholder farmer collective action than the buyer-driven organisations. This can be seen in the potato case in Uganda (Kaganzi et al., 2009) and Andes (Devaux et al., 2009), cashew and mango case in India (Trebbin & Hassler, 2012), and banana case in Kenya (Fischer & Qaim, 2014). The buyer-driven organisation can be seen in the high value fruit and vegetable case in Kenya and India (Narrodd et al., 2009).

3.3.3. The role of external agents

It can be seen that the external agents have an important role for collective action, in particular, smallholder farmer collective action. This is asserted by Fischer and Qaim (2012) and Hellin et al. (2009) who state collective action establishment and its sustainability are often catalysed by an external agent. For the FAO people participation programs in Africa, McKone (1990) report that small farmers in many developing countries do not belong to the existing farmers' organisations. Markelova et al. (2009) assert that farmers in developing countries rarely organise their groups on a formal basis, thus, often the external agent is essential to accomplish market demands on group formality and other quality standards. In addition, the case of the producers' company in India shows the crucial role of the external agent, as setting up the producers' company was time-consuming and demanding, which could not be done by individual farmers' initiatives alone (Trebbin & Hassler, 2012).

Studies show that different supports have been provided by the external agent in facilitating collective action with smallholders (Markelova et al., 2009). Firstly, from the governmental organisations, they commonly provide subsidies and facilitate farmers to access the inputs and credits; provide collective commercialization; and create and enable the policy environment (Faure, 2004; Hellin et al., 2009; Markelova et al., 2009). The government may also provide extension services and technical equipment (as seen in the cowa case, Thailand) (Kruijssen et al., 2009). In Indonesia, there are various agricultural subsidies offered by the Government, such as seeds subsidy, agriculture technology (e.g. planting and harvesting machinery, rice processing technology), and credit scheme subsidy, that are only accessible through farmer groups (Ministry of Agriculture, 2015c).

Meanwhile, NGOs and research agencies normally assist through farmers' groups to develop the social capital and improve the organisation's capacity and marketing management skills (Devaux et al., 2009; Faure, 2004; Hellin et al., 2009; Kaganzi et al., 2009). From the perspective of farmers' development in the upland area in Indonesia, Sunito and Saharuddin (2001) note different general roles of NGOs in supporting farmers to overcome their constraints, such as diffusing new technology and marketing channels (this kind of non-government organisations are strongly found in Java Island), advocacy support, and both activities, whether it is technology diffusion or advocacy.

Subsequently, the private sector support within farmer collective action is more likely to direct farmers and facilitate them to meet quality and safety standards, and to access certification opportunities (Markelova et al., 2009). The private sector also helps improve production capacity (Hellin et al., 2009), so that their produce fulfils the requirements of formal market. In contrast with the non-government organisation approach, Sunito and Saharuddin (2001) argue that the private sector support tends to not engage in the local community empowerment, but rather to improve management efficiency in the distribution of information, credit facility, and managing work activity. Commonly, the private sector-led farmers' collective actions are institutionalised under contract farming (Hellin et al., 2009).

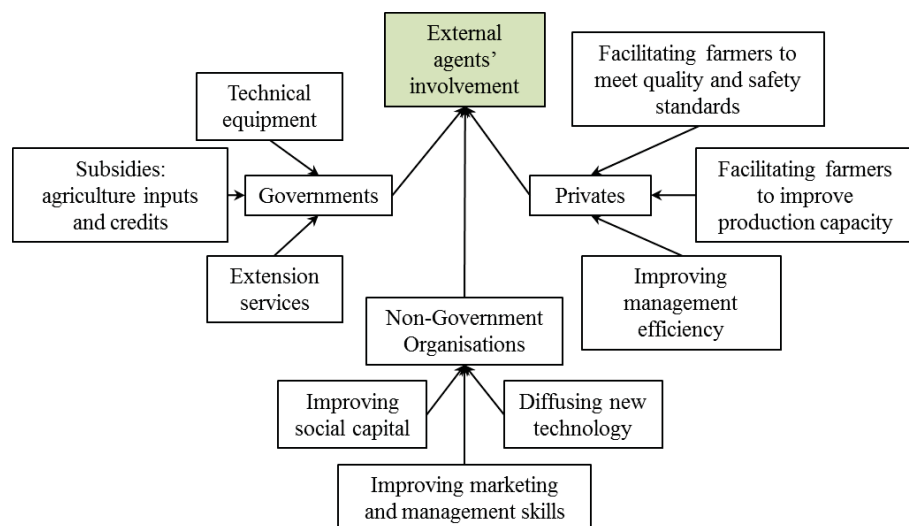


Figure 4. The external agents' involvement

However, it is still arguable as to what is the most suitable organisation to facilitate collective action, as each organisation has a different character and limitation. For

the case of government-led collective action, it is indicated that the government has the financial capability and legitimacy to provide support and build a policy environment (Faure, 2004; Hellin et al., 2009; Markelova et al., 2009). Moreover, the Government with donors and NGOs are likely to promote 'pro-poor' growth development (Markelova et al., 2009).

Conversely, there are also some drawbacks which have resulted from the government subsidies programmes, such as market price distortion (as the result of subsidy programmes) and a lack of collaborative interaction between farmers and the facilitator because the programmes are not demand-driven (Markelova et al., 2009). A similar situation has occurred in Indonesia. According to Syahyuti (2010) and Nasrul (2012), the government tends to organise the farmers' development project, which may not fit with each farmer group, as they use the replication model from the pilot project area. As a result, they may fail to empower farmers based on their need to be developed and to be independent.

Meanwhile, some scholars agree that NGOs are the most suitable actors to drive the processes of collective action, particularly for the marketing activities. They have the appropriate abilities, such as business and marketing skills, to help farmers to develop their group (Coulter, Goodland, Tallontire, & Stringfellow, 1999; Thorp, Stewart, & Heyer, 2005). From the Sub-Saharan case, Coulter et al. (1999) reported that a specialized NGO is often the best agent to facilitate a group to develop their business and technical skills and working relationships between the group and agribusiness. This is because they have the capacity to link farmers with other actors, business knowledge, as well as skills in participatory development. As a result, they can motivate farmers, help farmers' enterprise to develop the organisation and its marketing and business skills. Similar to the Sub-Saharan case, Thorp et al. (2005) state that a pro bono group, usually an NGO, can be a vital actor who drives the collective marketing activities. Based on the the El Ceibo case (Meso-America), they report that the NGO has marketing and technical skills to assist producers, as well as providing funds.

However, a study in Tanzania show that NGOs are not always the most appropriate facilitators and have not been uniformly successful in enhancing groups' marketing performance (Barham & Chitemi, 2009). Moreover, according to Markelova et al.

(2009), they may be tempted to intervene too actively. Their involvement may also increase farmers' dependency on NGOs, as reported in El Ceibo's case (Thorp et al., 2005). For the case of NGOs in Indonesia, Hermantyo (2007) reflected that NGOs may not have sufficient power to link their project with other supporting actors, as they are limited to the provision of the budget and technology. Moreover, they do not have the authority to produce supporting policy.

Regarding the private sectors' intervention on farmers' collective action, Markelova et al. (2009) argue that this sector may be the best actor to facilitate farmers to improve the production capacity, product quality and safety standards, and to access certification opportunities so that they are able to meet the market's quality standards. The Namdhari Fresh case in India shows that the private sector can be a good facilitator to improve small farmers' market participation, as they already have the access to local and global markets (Dhananjaya & Rao, 2009). They know the market characteristics and their demands, thus they know what to do with farmers. In this case, they provided the agricultural inputs, farming guidelines, as well as technical assistance, in order to fulfil the market requirements and facilitate farmers to market their products.

On the other side, Markelova et al. (2009) also argue that the private sector tends to have a conflict of interest with farmers over the distribution of the surplus along the commodity chain from producer to consumer. Hellin et al. (2009) assert that there is hesitancy regarding equity and the share of benefits. In addition, Markelova et al. (2009) state that most cases show that the private sector is incapable of replacing the state services as they face high transaction costs, dispersed users, and low financial benefits.

For these reasons, there is a need to determine the external agent supports, especially when the objective of the farmer's group establishment is to compete in markets and create independent business units (Trebbin & Hassler, 2012). Moreover, regardless of who plays as the external agents, it is important to make sure that the groups formed by smallholders are controlled by its members and is synchronized with local conditions to ensure loyalty and a sense of ownership (Stringfellow, Coulter, Hussain, Lucey, & McKone, 1997; Thorp et al., 2005).

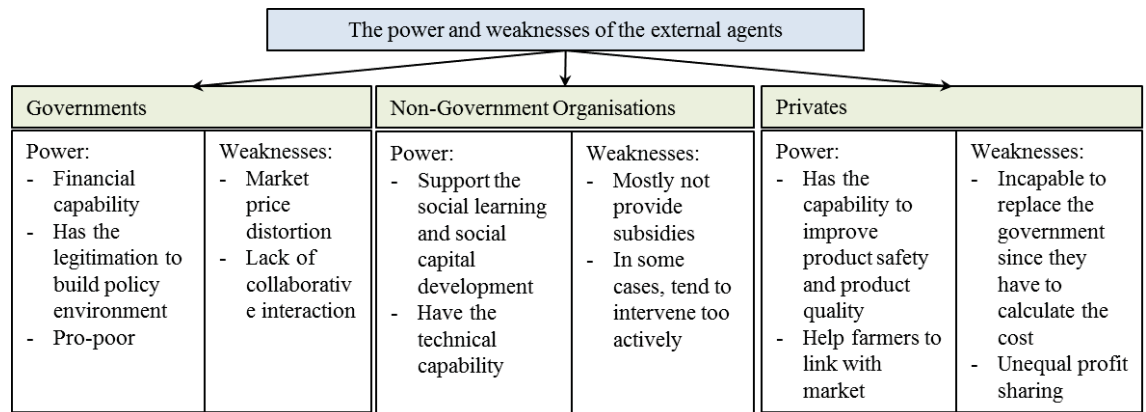


Figure 5. The power and weaknesses of the external agents

3.3.4. The organisational forms of collective action

Meinzen-Dick et al. (2004) stated that collective action can be classified as an event (a one-time occurrence), an institution (rule of the game applied over and over again), and a process. Regarding the “institution”, they argue that institutionalisation depends on the object of collective action. For example, the collective action for routine maintenance will probably become institutionalized because it is a recurrent need in a community or group of users. Accordingly, scholars have mentioned different types of collective action which possibly fit to be incorporated as institutionalized collective action, such as farmer organisations (Fischer & Qaim, 2012; Hellin et al., 2009; Markelova et al., 2009) and coordination among chain actors (Devaux et al., 2009). However, they have not defined the ‘farmer organisation’ clearly, particularly those who did collective action study under farmer organisation.

According to the International Federation of Agricultural Producers (IFAP), as cited in Stockbridge, Dorward, Kydd, Morrison, and Poole (2003), farmers' organisations include any of the following: farmers’ groups and pre-cooperatives; farmers’ associations, federations and unions; agricultural cooperatives; chamber of agriculture having a general assembly elected by farmers. The first type refers to an informal association not formally registered as a cooperative, which may be in the process of becoming cooperatives. Meanwhile, there is no clear definition of the other types of farmer organisations.

Subsequently, according to Chamala and Shingi (1997), a farmer organisation can be grouped into two types: the community-based and resource-orientated organisation;

and the commodity-based and market-orientated organisation. The first type could be a village-level cooperative or association dealing with inputs needed by the members to enhance the productivity based on land, water, or animals. In general, these organisations are small, have well-defined geographical areas, and are predominantly concerned about inputs. The second type is the organisation specialising in a single commodity and which opts for value-added products which have expanded markets. This organisation is not specific to any single community; it can obtain members from among regional growers who are interested in investing some share capital to acquire the most recent processing technology and professional manpower.

Meanwhile, in the context of rural organisation development in Indonesia, Bourgeois et al. (2003) have defined a farmer organisation as a group of farmers that is “active”, which means it: has regular meetings, handles different activities such as collective purchasing or collective marketing, facilitates information exchange, managing together a nursery and a rice mill. Subsequently, it also fulfils the element of an organisation such as the members, and the board of the organisation.

3.3.5. Benefits offered by collective action

For farmers and local people

Studies show that collective action offers many benefits to smallholder farmers. It can help them to address market imperfection problems, such reducing transaction costs and to help farmers to access credit (Markelova et al., 2009). The Papa Andina case shows that collective action can lessen the share of transport costs, thus allowing potato farmers to address the geographical barriers as the farmers living in a remote area in the Andes (Devaux et al., 2009). Meanwhile, in Uganda, collective action facilitates potato farmers to pool their financial resources from personal savings and loans, so that they can be used to finance their group operations (Kaganzi et al., 2009). Additionally, Meinzen-Dick and Di Gregorio (2004) state that the group’s assets can be used as collateral for obtaining credit.

Subsequently, the farmers’ collective action can help them to improve the marketing system (Markelova et al., 2009). In the Andes case, the collective action through coordination between farmers and other market actors (e.g. local traders) has improved the potato market chain in this area and created a more stable market for

native potato producers (Devaux et al., 2009). In Uganda, the combination of collective learning, skills development, and access to new technology, has helped potato farmers to link with potential markets (restaurant chain in this case) (Kaganzi et al., 2009). In this case, collective action is essential to meet basic market requirements for minimum quantities, quality, and frequency of supply, which they could not achieve as individuals. Meanwhile, from India, collective action (in the form of farmer producer organisations) presents more value to small farmers as this can replace intermediaries between farmers and markets (Trebbin & Hassler, 2012). This also helps farmers to continually obtain information about the market situation.

Furthermore, from the case in Africa, collective action may increase the bargaining power of smallholders and allow them to negotiate better terms of trade (Markelova & Mwangi, 2010). In Ghana, collective action may help farmers to raise their bargaining power to set the price (Lyon, 2003). However, it does not automatically increase farmers' bargaining power because price-setting can only work in a period of shortage. Additionally, the infrastructure (road) also affects the collective bargaining as off-road locations will be less visited by traders.

Moreover, collective action enables farmers to participate in technology development, thus they are able to reach quality standards (Markelova et al., 2009; Meinzen-Dick et al., 2004). The cowa case in Thailand shows that collective action facilitates them to access processing technology and utilize it to produce more valuable products (Kruijssen et al., 2009). In this case, collective action also helps the farmers to access the training on food hygiene so that they can acquire the hygiene certificate and join the One Village One Product program (OVOP). Meanwhile, the banana case in Kenya shows that collective action can promote efficient flow of information. Thus, it stimulates innovation. Group participation is associated with higher adoption rates of tissue culture technology and higher intensities of chemical inputs (Fischer & Qaim, 2012). In this case, collective action helps farmers to create networks among community members so that they are better able to access information. Subsequently, in India, the farmer producer company provides a systematic water supply distribution and cold storage to maintain product quality during distribution (Trebbin & Hassler, 2012).

Additionally, collective action benefits the local people as it generates employment opportunities among the local communities (Trebbin & Hassler, 2012). As a result, it affects the local economy situation.

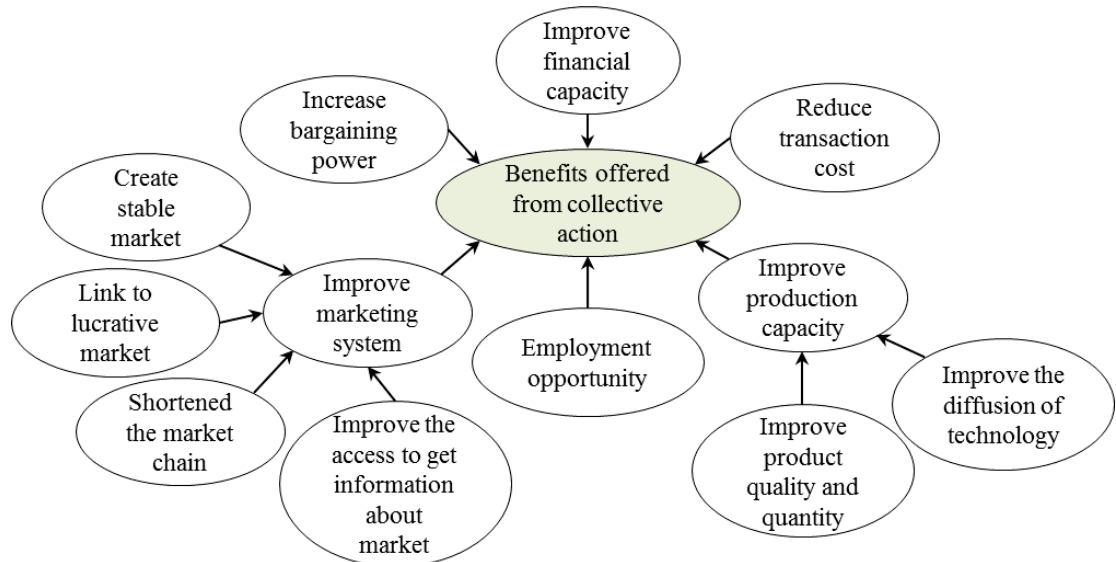


Figure 6. Benefits offered from collective action for farmers and local people
Source: Adapted from (Devaux et al., 2009; Kaganzi et al., 2009; Markelova et al., 2009; Meinen-Dick & Di Gregorio, 2004)

The aforementioned cases show that collective action can help small farmers to compete within the emerging market. However, apart from the inputs provision, there is little evidence on the impact of collective action for improving farmers' value chain, in particular, the farmers who produce grains such as maize and rice. Collective action is more attractive for perishable commodities, such as fruits and vegetables, than for staple crops, as it is easier to store and distribute (Fischer & Qaim, 2012). In that regard, Hellin et al. (2009) argue that these farmers need to look for new opportunities to add value to, or to differentiate their products, in order to capture more benefits from collective action.

For buyers

In addition to the benefits of collective action for farmers and local communities, this also presents a significant advantage for the buyer, as evident in India, where the producers' company allow buyers to reduce transaction costs as they are only dealing with a single representative (Trebbin & Hassler, 2012). This also enables them to calculate the volume of produce and its price. Otherwise, they would have to search market places to secure and satisfy their demand.

3.3.6. Contributing factors for collective action in improving market access

Agrawal (2003) in a natural management resources study, synthesized the contributing factors for collective action; they are: resource system characteristics, group characteristics, institutional arrangements, and the external environment. Despite the study by Agrawal being in the natural resource management area, scholars agree that these factors are still relevant in the context of collective action and small farmers' market development (Devaux et al., 2009; Markelova et al., 2009; Markelova & Mwangi, 2010). Adapted from Agrawal, Markelova et al. (2009) proposed four determining factors of collective action in improving value chain; they are: group characteristics, institutional arrangements, types of products and markets, and external environment. Additionally, other scholars also mention other factors, such as participation, social capital, leadership, and value upgrading, see Devaux et al. (2009), Fischer and Qaim (2014), Garnevska et al. (2011), Kaganzi et al. (2009) Lyon (2003), and Trebbin and Hassler (2012).

3.3.6.1. Group characteristics

Vanni (2013) states that the characteristics of the group are related to the success of collective action, which includes the appropriate size and group homogeneity. Moreover, he says that the group has to allow the participants to increase their participation and social relationship. This section highlights the first two attributes, while the participation and social relationship (social capital) is presented in the next sections. In addition, this section highlights the impact of group maturity for the group's development.

Group size

According to Mancur Olson, as cited in Ostrom (2010), the size of a group has an impact on the group performance. Larger groups can help farmers to achieve economies of scale, which is beneficial for marketing (Stringfellow et al., 1997). For example, the case of the producer company (VAPCOL) in India showed that large and heterogeneous groups led to a better link with large buyers and enhanced the product differentiation to meet market demand (Trebbin & Hassler, 2012).

However, a larger group tends to have more free-riders. Mancur Olson, according to Ostrom (2010) argues that when it increases, the individual may think that their free-riding may not be noticed. The problems of free-riding may be more likely to emerge in larger groups, unless the formal rules and sanction mechanisms can address the weak social ties (Baldassarri & Grossman, 2011). A study from Indonesia indicates that when the number of members increases, the farmers' participation levels tend to be lower (Wahyuni, 2003). In addition, according to Agrawal (2000), a larger group may lead to a higher transaction cost and conflict risks.

On the other hand, according to Fischer and Qaim (2014), it is easier to build coordination within a smaller group as it promotes effective communication. As a result, the group is more likely to have stronger social cohesion. A smaller group tends to have better internal cohesion as it is easier to monitor other members (Agrawal, 2001). Meanwhile, group cohesion determines the group viability (Stockbridge et al., 2003) and influence the performance of the group to market their produce, as shown in the Uganda case (Kaganzi et al., 2009). In this case, small clustered groups present a positive impact for the potato collective marketing. However, it is unclear how the clustered group beneficial for the collective marketing.

Meanwhile, if the group is too small, it may be harder to generate the resources needed to engage effectively in collective action (Agrawal, 2000). Therefore, Ostrom (2010) suggests that moderately-sized groups are better able to solve these problems when related to the governance and management of many natural resources.

Internal composition

Another important factor for farmer groups is their internal composition (Markelova & Mwangi, 2010). There is evidence from Africa, that groups whose members have the same socioeconomic status, are more stable and effective, as this may lower coordination costs and increase compliance (Bernard & Spielman, 2009; Stockbridge et al., 2003). Subsequently, the Papa Andina experience shows that collective action between actors from different chain level and external agents, such as NGOs, may be more difficult to establish and maintain over time (Devaux et al., 2009). This is because this group is more likely to face trust issues between actors. However, this

study also shows that if these actors manage the challenge of being heterogeneous, they will have a better market participation as this heterogeneity is valuable for marketing innovation.

Group maturity

Group maturity is also one of the group characteristics that contribute to the collective marketing performance. From the Tanzania case, Barham and Chitemi (2009) found that groups with maturity and functioning group activities, are in a better position to mobilize resources, compared to newly-formed groups. The mature groups had a set of organisation rules to guide group behaviour and, as a result, they had a better opportunity to take advantage of the emerging market.

3.3.6.2. Participation

Studies show that members' participation in collective action is essential for the development of a group (Faure, 2004; Fischer & Qaim, 2014). In Costa Rica, the lack of participation leads to failure in sustaining the farmer organisation (Faure, 2004). In Kenya, this may reduce the ability of the groups to provide useful services to its members (Fischer & Qaim, 2014).

The question is, what has determined the participation? Before answering the question, it is essential to clarify what participation means. Some studies refer to participation as the act of farmers in joining a group, see Fischer and Qaim (2012) and Zheng, Wang, and Awokuse (2012), while others refer to participation as the ratio in being engaged and involved within the group, see Zheng et al. (2012), Sandyatma and Hariadi (2012), and (Fischer & Qaim, 2014)

For the first context, scholars found different factors that influenced group membership. In banana farming in Kenya, Fischer and Qaim (2012) found that the farm size, the mobile phone ownership, the rate of investment to join the group, and the distance to paved roads, influenced farmers' motivation to join a group. In this case, the middle-size farmers were more likely to join a group than the small-size and larger farmers, as they could obtain more optimal incentives from farmer groups than the two others. The small farmers were reluctant to join as they did not have sufficient capacity to optimise the incentives offered by the organisation. They also

could not pay the membership fee as this was a relatively large investment for them. For the larger farmers, they already had the capacity to obtain benefit from markets, thus they did not need to join a group. Subsequently, the mobile phone ownership promotes information sharing and this positively affects participation. Moreover, the access to paved road also influenced participation. Farmers who had such access tended not to join the group as they could sell their produce at the market more easily than who did not have. Meanwhile, in China, the willingness to join a group was influenced by the farmers' plan to expand their future operations and the type of commodities (Zheng et al., 2012). Farmers who plan to expand future operations are more likely to participate in cooperatives. Subsequently, farmers planting cash crops are more likely to participate in the cooperatives than grain producers.

For the second context, Zheng et al. (2012) found that the participation rate was influenced by the size of land holding and management performance. Farmers with a larger area are more likely to participate in the cooperatives. This was dissimilar to the Kenya case, where the size of farm influenced the willingness of farmers to join, but not with their participation rate (Fischer & Qaim, 2012, 2014). Subsequently, this case also found that poor management, which is reflected through autocratic management and little accountability to regular membership, tended to influence farmers to not actively participate within the group. The effect of bad management has also been identified by Sandyatma and Hariadi (2012) in Indonesia, which reflected through the poor performance of information-sharing, lack of rules enforcement, lack of transparency, and the lack of leaders able to take into account the members' voices. In addition, Fischer and Qaim (2014) found that the farmers' participation rate within a group was influenced by their activities in other social groups. Farmers who were engaged with more than one social activity, tended to participate less actively within a group as they had limited time, for example, to attend the group meeting. Moreover, in this case, the participation rate was also influenced by the distance between farmers and the meeting point.

3.3.6.3. Social capital

Vanni (2013) argues that social capital is also important to facilitate collective action. According to Pretty and Ward (2001), the social capital asset is built based on a relationship of trust, reciprocity and exchanges, common rules, norms and sanctions,

connectedness (bonding, bridging, and linking), and networks and groups. Vanni (2013) states that trust is an important factor in working cooperatively and this is strongly related to reputation. According to Pretty (2003), reciprocity improves the level of trust and contributes to the development of long-term obligations between people. In addition, Vanni (2013) states that common rules, norms, and sanctions are important to deal with changing behaviours shown by participants.

Studies show different factors that may promote social capital within a group, such as kinship, the historical organisational background, and the farmer group activities. The kinship and local neighbourhood ties can form the basis for small cohesive groups (Stockbridge et al., 2003). Subsequently, the organisations that build upon pre-existing social groups, have an advantage, because they can develop their social capital from the local norms and trust, as evident in Uganda, where most farmers were also members of a local church (Kaganzi et al., 2009). Moreover, they found that the farmer group activities, such as the farmer field school, facilitate the group to build connectedness (bonding and bridging) among members. In addition, trust can be triggered by an external agent (Lyon, 2003). This can be seen from the Papa Andina case, where the external agent held meetings in the initial stage of group establishment in order to build trust between actors (Devaux et al., 2009). The series of meetings facilitated actors involved within a collective activity to get to know each other, to exchange information, and to elaborate on ideas, as shown in Costa Rica (Faure, 2004).

Many scholars show the importance of social capital for collective action (Faure, 2004; Kruijssen et al., 2009; Vanni, 2013). Kruijssen et al. (2009) states that social capital may facilitate collective action. This makes people confident to participate when they know that others will also do the same thing. A study in Colombia shows social capital has a significant contribution to a firm's performance because it facilitates the firm to access information and reduce the cost of contracting and coordination (Johnson, Suarez, & Lundy, 2006). Social capital may also facilitate farmers to link together new organisation structures, technologies and market opportunities, as evident in Uganda (Kaganzi et al., 2009). From the cowa case in Thailand, the presence of shared values, agreements, and mutual trust between farmers were also crucial for a group, because it provided the energy for further

social learning, collective awareness, and capacity building (Kruijssen et al., 2009). In Zimbabwe, many local farming groups disintegrated, or become dormant, because there was considerable mistrust between farmers (Masakure & Henson, 2005).

3.3.6.4. Leadership

Kruijssen et al. (2009) indicate that the characteristics of a group leader are essential as they may have an impact on group construction and operation. According to Markelova et al. (2009) a leader should be trusted, have business skills, good networks with other actors, and be able to act as a motivator. In India, the leadership with integrity and capability of managing the business, is accepted within the community, as well as the market environment, as the most essential factors for a successful farmer organisation (Trebbin & Hassler, 2012).

Similarly, in Uganda, a leader must have the entrepreneurial spirit and trust from the members, as these are influential for making rapid decisions (Kaganzi et al., 2009). In China, Garnevska et al. (2011) found that a leader who has vision, is well-educated, a capacity for business and management, good communication skills, with an enthusiasm for innovation and being open-minded, affects the performance of the organisation.

Scholars agree that a leader should also have a social entrepreneurial spirit. In Ghana, a leader who wants to sacrifice time and effort for the group's survival, will influence the group's sustainability (Lyon, 2003). In Indonesia, Mutmaimah and Sumardjo (2014) found that a farmer group's leader who has more time allocation for the group and is able to maintain the group's atmosphere, is more favourable for the group's members.

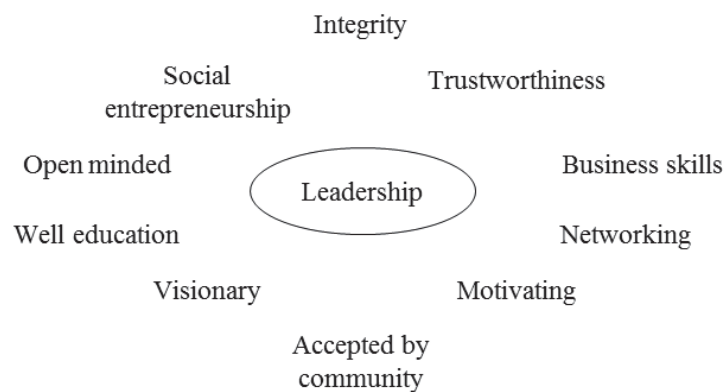


Figure 7. The leadership characteristics that influence group's performance

3.3.6.5. Institutional arrangements

Rules and sanction

According to Markelova and Mwangi (2010), institutional arrangements, such as rules and organisational structures, are important for shaping the farmers' group's function. Ostrom and Wade, as cited in Vanni (2013) argue that the simplicity of rules that are based on local characteristics and are followed by effective monitoring and sanction systems, determine the success of the action. Studies of natural resource management, have found that a simple and understandable rule is more easily followed and increases compliance (Markelova et al., 2009). Moreover, Agrawal (2001) state that the collective action design that facilitate a group to incorporate their own rules tends to be easily understood and adapted to local conditions. Subsequently, a study in Ghana found that the group that is able to enforce the rules and present punishment, tends to be more sustainable (Lyon, 2003). He adds that the rules enforcement can be delivered by the chief of organisation, or through peer pressure and shaming people.

3.3.6.6. Type of products and markets and the incentives to farmers

The characteristics of the natural resources (e.g. type of products/commodities) and its technical requirements are crucial issues in achieving successful collective action (Vanni, 2013). According to Markelova and Mwangi (2010), the types of products may also present an incentive or disincentive for organizing a collective action. Therefore, there is a need to recognize the products with which farmers are dealing, as this influences the group's market performance (Barham & Chitemi, 2009; Hellin et al., 2009; Markelova et al., 2009).

The nature of staple foods, perishables, and cash crops differ significantly (Poulton, Dorward, & Kydd, 2010). Staples (e.g. maize) are bulky, but are easier to store and distribute compared to perishables (e.g. horticulture or livestock products) (Markelova et al., 2009; Markelova & Mwangi, 2010). Meanwhile, perishables carry a higher risk and, to maintain their quality, mostly require technical expertise, which small farmers alone may not able to do (Markelova et al., 2009). However, the farmers' group who is able to address these issues, will have access to a lucrative

market (e.g. supermarkets) and gain greater benefits, as illustrated in the India case and the Kenya case (Narrodd et al., 2009).

There are different potential markets and incentives for each commodity which affect farmers joining a collective group. Staples and perishables are potentially sold in local, national and export markets with various degrees of processing. Meanwhile, cash crops are often linked with the export market (Markelova et al., 2009). Local markets are the easiest to access, yet Markelova et al. (2009) argue that it only offers low potential advantages from collective action, as even individual farmers can sell their products locally. The Mexico case shows that there are many local buyers for their produce (maize) and farmers can sell it individually (Hellin et al., 2009). In this case, there were fewer incentives that were offered by a farmers group. Therefore, farmers did not have the motivation to organise collective marketing because they did not identify any advantages from this organisation.

The national markets tend to attract farmers to join a collective group. These markets, in particular, that are related to the urban market development (e.g. supermarkets and restaurants), offer better incentives to them. This can be seen from the case of potato farmers in Uganda (Kaganzi et al., 2009) and in Meso-America (Devaux et al., 2009).

3.3.6.7. Value upgrading

In addition to the determining factors mentioned before, Kaganzi et al. (2009) found that there are some other important factors that facilitate farmers' collective action, particularly in increasing market participation, they are: production upgrading, improving product quality, innovation and market responsiveness. Production upgrading and improving product quality are important in meeting the contract requirements. Meanwhile, good market responsiveness allows the organisation to identify problems and find rapid practical solutions. For example, when the transportation costs proved to be significantly higher than predicted, the group decided to buy a truck. Another example; in order to maintain the communication with the buyer, the chairman purchased a mobile phone. Moreover, as part of the relationship building, the chairman invited the buyer manager to visit their village.

3.3.6.8. The external environment

According to Vanni (2013), the external environment may be interpreted as financial and non-financial support. Mills et al. (2010) states that financial support is particularly relevant at the initial phase of the collective action, since it is usually costly compared to individual activities. This support can be provided by government, NGOs, research agency, and the private sector (Faure, 2004; Hellin et al., 2009; Kruijssen et al., 2009; Markelova et al., 2009). The Uganda case shows that financial support has an important role in improving collective marketing (Kaganzi et al., 2009). In this case, the Government of Uganda promoted the establishment of the saving and credit cooperative (SACCO) that provided saving and loan services to the farmers.

The non-financial support is also important for farmers' collective action performance. A supportive political and economic environment is essential for the success of collective marketing, as the operation cannot be organised in a state of hostility or macroeconomic instability (Chirwa et al., 2005; Thorp et al., 2005). In Meso America, the government can help to ensure that the legal and judicial system support low-cost contract endorsement, facilitate the flow of market information, and make transport, electricity, water, and other infrastructure systems widely available to help support small enterprises (Hellin et al., 2009). Moreover, the non-financial support can be presented through a supportive legislation, as can be seen in India (Trebbin & Hassler, 2012). In India, the Government amended the Companies Act 1956 in 2002. The new Act legitimized farmers to establish a farmer producer company so that they were able to compete in markets.

3.3.7. Challenges and constraints on collective action development

Studies show the processes of initiating and sustaining a farmer organisation mostly are challenging. These challenges often emerge when setting up the rules, ensuring members' commitments to obey the rules, and monitoring and enforcing the rules (Hellin et al., 2009). Vanni (2013) identifies two main problems to collective action, being higher transaction costs and free-riding. In some cases, the establishment of farmer organisations requires a transaction cost. As a consequence, farmers prefer not to do the organizing (Stockbridge et al., 2003). Subsequently, according to

Mancur Olson, collective action often involves some individuals who tend not to contribute to group activities yet gain benefit from other member's activities (Vanni, 2013).

In the context of farmer groups in Indonesia, there are many constraints that may impede the collective action development. Nuryanti and Swastika (2011) and Nasrul (2012) have summarized the constraints as follows: Firstly, the poor work ethic and unprofessional management in organizing a farmer group present barriers for farmer group development. Moreover, members' participation level is relatively low, which can be seen from the regular meeting attendance. Secondly, the labour market tends to be more open. This leads to a higher rate of farmer mobilization to urban areas. As a result, there will be a shortage of workers within farmer groups. Thirdly, there is a phenomenon in which a farmer group is used as a tool to get the grant from Government. This will increase the farmers' dependency on Government subsidy and eliminate their self-reliance. On the other hand, most farmer group development projects tend to utilize the top-down approach. In that regard, the drivers tend to implement the replication model for all farmers without considering the local situation. Fourthly, despite the drivers that have facilitated the group establishment, the farmer development program may not be beneficial for all group members. It is because the program is delivered to the farmer group representative only, as it requires less programme budget. Fifthly, the drivers failed to develop the organisational culture in the farming community. They tend to encourage farmers to establish the formal structure of an organisation rather than to promote the organisational culture among farmers. As a result, the organisation only appears on paper, as the farmers did not optimize its existence to develop their farms.

3.4. Chapter summary

This chapter provides the theoretical framework on capturing value within value chain systems and empirical evidence on how collective action facilitates small farmers to improve their farms so that they can compete and gain more benefit from value chain systems. Collective action enables farmers to improve production efficiency and capacity, as well as assist farmers to upgrade the value of their products. Moreover, through collective action, small farmers are offered the opportunities to participate in the different markets, not only the traditional market, but also the national market, and

other market actors: such as supermarkets, retailers, restaurants, and hospitals. However, there is little evidence on the impact of collective action in improving the value chain of farmers who produce grains, such as rice. Collective action is more attractive for perishable commodities, such as fruits and vegetables.

This chapter also shows that establishing a farmer group is not straightforward. There are many aspects to be considered, such as the farmers' motivation itself and the role of the external agents. Moreover, there are many factors that may facilitate collective action, particularly in order to improve the farmers' market participation, namely: group characteristics, institutional arrangements, types of products and markets, external environment, social capital, production upgrading, product quality, and innovation and market responsiveness. In addition, there are some challenges faced by farmers in developing their group, such as free-riders, the high transaction cost, and members' participation.

Chapter 4. Methodology

This chapter examines the research approach and methods used in this study, beginning with an outline of the research design. It then describes the method and presents the rationale behind the method selection. The sampling of cases and participants are presented, along with the tools used to collect data, and data analysis techniques. In addition, it explains the process of the field work.

4.1. Research design

Meinzen-Dick et al. (2004) state that the appropriate approach to collective action studies depends on the aim of the study. In that regard, studies show that both qualitative and quantitative approaches have been used for collective action studies (Barham & Chitemi, 2009; Fischer & Qaim, 2012, 2014; Garnevska et al., 2011; Hellin et al., 2009; Kaganzi et al., 2009; Kruijssen et al., 2009; Trebbin & Hassler, 2012). This section reintroduces the aim and objectives of the research in order to explain the method.

This study aims to get a deeper understanding how a collective group of smallholder farmers is able to perform capacity and improve their capability. Therefore, it will provide insight for the government and/or other farmer groups and/or other institutions as to what may be required for organising collective action so that farmers can gain benefit from the rice value chain. In order to achieve the aim, therefore, this study has two objectives as follows:

1. To identify and describe what benefit captured through collective action and how.
2. To identify and describe how smallholder rice farmers act collectively within a group and why.

A qualitative method was selected as it enables the researcher to achieve the study aims and objectives. In the collective action study, the qualitative method allows the researcher to build rapport with responders, who in turn can provide the insider's view so that the researcher can understand the situation (Meinzen-Dick et al., 2004). Subsequently, the case study approach was selected as this research addresses an explanatory question. As stated by Bouma (2000), the case study approach is

appropriate to answer the “how” research question. This approach does not facilitate the researcher to generalise from the case (Thomas, 2011). However, it can provide rich descriptions, or insightful explanations (Bouma, 2000) from different perspectives (Thomas, 2011).

4.2. Case selection

This study used a single case study because there are few examples of smallholder rice farmers working collectively within a group that are able to optimise the support from government to improve their capability and capture benefit through it. The Gapoktan Sidomulyo, a collective farmer group in the Special Region of Yogyakarta, was selected because it was identified by the central and local government as a well-developed collective group of smallholder rice farmers. The government internal assessment shows that this group is able to improve their value chain within the rice chain system. This group is a collective group who own a rice processing business unit (Pranyoto, 2016), have produced their own brand and marketed their products to different markets (e.g. food manufacturers and restaurant chains).

In brief, both central government and local government have identified Gapoktan Sidomulyo as an example of a “successful” smallholder rice farmers’ collective action. As stated by Jones (2004), success in collective action can be indicated by how the actors organise collectively and show economically productive behaviours.

4.3. Participant selection

In this study, the participants were selected by using a purposive sampling method. The purposive sampling method was used to ensure that “certain types of individuals or persons displaying certain attributes are included in the study” (Berg, 2007, p. 44). This study involved participants from the Gapoktan Sidomulyo and actors that are related to the group and relevant to the study. The participants from the internal group were selected based on their role within the collective group. Meanwhile, the participants external to the group were selected based on their relation to the group development, current operation and market interaction.

The internal participants involved in this research are the Leader of Gapoktan Sidomulyo, the Rice Processing and Distribution Unit (RPDU) Manager, the Food Stock Unit (FSU) Manager, the Poktan Leaders, and the Sidomulyo Farmers. The aim

of selecting participants with different roles was to gain information about the collective group, such as the establishment process, its governance, and what contributes to the group's performance, from different perspectives.

The internal participants, in particular, the Poktan Leader and the Sidomulyo Farmer, were selected based on information provided by the key informant (The Gapoktan Leader and RPDU Manager). The researcher interviewed the key informants to obtain information about the general characteristics of the Poktans under Gapoktan Sidomulyo and the farmers' typology in Sidomulyo Village. The researcher then considered the information that was gained from the key informant to determine the potential participants to be invited.

Subsequently, this study involved the participants external to the group. The researcher interviewed the government officers of Agriculture Department at the regency level as they have a closer relationship to the group compared to the headquarter officer and province level officer. These officers could also explain the legal environment of agriculture development from the national context and the regency context as they are the actor who implemented the national programmes and the regency level programmes. The agriculture department officers involved in the interviews are the officer from the Regency Office of Agriculture Department Food Security Division (ROADFSD) and the officer from the Regency Office of Agriculture Department Processing and Marketing Division (ROADPMD). They were selected as they facilitated the Gapoktan Sidomulyo to access the Local Food Distribution Program (LFDP) and Rice Processing Unit Revitalisation Program (RPURP). Furthermore, the researcher interviewed the Agriculture Extension Officer, who has been involved in the group development for years. Moreover, the researcher interviewed the former ROADFSD officer. The key informant suggested the researcher invite the former officer because he is knowledgeable about the group performance in the establishment period.

In addition, the researcher interviewed the buyer who supplies the restaurant chain and the buyer who supplies the food manufacturer. These participants were selected as they could provide information from the non-traditional market. These participants were also selected based on the information provided by the key informant.

4.4. Data collection method

This study used two different methods. They were semi-structured interviews and document collection. These methods were selected in order to get a better understanding of a situation from different sources. As stated by Thomas (2013) that including as many different methods and procedures is often important for understanding what was going on in a particular situation.

4.4.1. Semi-structured interview

This study used semi-structured interviews as the main data collection method. The semi-structured interview was selected because it was relevant to answer the research question, which was aimed to get a deeper understanding as to why the Gapoktan Sidomulyo is able to operate as a group and obtain benefit from the market. The researcher set up open-ended questions, which were set based on the study framework from the literature review, to be asked of the participants.

Moreover, the semi-structured interview helped interviewers to ask questions systematically, yet still allow them to probe far beyond the answers to their prepared structured questions (Berg, 2007). This tool enabled the researcher to gain richer information and to clarify the information that was gained from the observation. This tool also provides an opportunity to understand the particular issues surrounding the subject, from the informant's perspective (Boeije, 2010).

Additionally, in order to support the data collection through the interview, the researcher tried to observe the group by spending time in the village. The researcher visited the site and talked to people around the site. Accompanied by the Gapoktan Leader, the researcher visited the Poktan Leader's house in order to build rapport and observe the situation of the village. The researcher also attended the regular meetings at the gapoktan level and at the poktan level. This enabled the researcher to observe the interactions between farmers and group organisers. The group observations allowed the researcher to understand the real situation of this group owing to "a first-hand experience with participants" (Creswell, 2009, p. 179).

Overall, the researcher interviewed 18 participants in eight face to face interviews and three group interviews. The group interview was selected to collect data from the farmers and the poktan Poktan leaders to help the researcher to create a better

atmosphere than face-to-face interviews. The researcher wanted to avoid an uncomfortable situation that may influence the data collection process.

Table 5 The participants and interview model

Participants	Number of Participants	Interview model
Former government officer	1	Face to face interview
RPDU Manager	1	Face to face interview
Government officer	2	Face to face interview
Sidomulyo farmer	3	Group interview
Sidomulyo farmer (part-timer)	3	Group interview
Poktan Leader	4	Group interview
Gapoktan Leader	1	Face to face interview
Food Stock Unit Manager	1	Face to face interview
Buyer	2	Face to face interview

4.4.2. Document collection

This research also utilised the secondary data from the document collection. This study used secondary data from a selected group, the central government, and local government. The secondary data that were used to support this research are the Ministry of Agriculture ordinance, Ministry of Agriculture technical guidelines, local government ordinance, and the Gapoktan Sidomulyo's documents, such as the organisation article, administrative documents, and the group's report.

4.5. Data collection process

The field work was planned very well and the case was selected carefully. There were some considerations in selecting the case, including the information from the government officers, starting from the headquarter office to the regency office. The researcher also considered the government assessment document. All of this information was collected to ensure that the case is appropriate for the study. Thereafter, the researcher started to build communication with the Gapoktan Leader and the RPDU Manager. This was aimed to introduce the research to them and to ensure that they want to participate in the research.

The field work was conducted from the third week of May, 2016 until the third week of August, 2016. There were some challenges during the field work. Arranging the

schedule for interview was not easy, particularly with the participants from the government. They were busy with their job as this was their peak period. Sometimes, there was a bureaucratic requirement to be followed. Subsequently, interviewing farmers was challenging because the farmer and the researcher use a different language for the daily conversation. The farmer generally uses the local language, while the researcher uses the national language. There was some terms need to elaborate during the interview, so that the researcher can understand the meaning of the terms. Meanwhile, for the participants for the buyer, the challenge was to ensure that this research is not about their institution. In addition, not all of the participants felt comfortable being recorded. In that regard, the researcher only took notes and wrote the important information.

4.6. Data analysis

The data in this study was analysed using qualitative data analysis techniques. A combination of techniques for analysing qualitative data was used after the recorded interviews were transcribed. The data analysis involved several stages as suggested by Dey (1993) which are description, classifications, and making connections. The description is an overview of the data that is obtained from the interview (Gray, n.d.). It describes important aspects of the phenomena (Gray, n.d.). This covers “the context of an act, the intentions of the actor, and the process in which action is embedded” (Dey, 1993, p. 31). The next step aims to categorise the raw data. It involves taking text data gathered during data collection, segmenting sentences (or paragraphs) and labelling those categories with a term (Creswell, 2009). In the making connection stage, the researcher identifies the essential relationships between categories (Gray, n.d.). In addition, these processes were reiterated several times in order to produce better understandings of the Gapoktan Sidomulyo’s collective action.

4.7. Potential risks of the study

This research was conducted in Yogyakarta Province, where the people, in general, use their own local language for daily conversation. The information, or some expressions, were possibly not translated precisely into *Bahasa Indonesia* and English. As a consequence, this may influence the quality of analysis. In addition, the different language that was used in this study have affected the duration of data analysis.

4.8. Ethics

According to the screening ethics questionnaire, this research was classified as low-risk research. This research was conducted in a province that has no potential risk of harm to the researcher. The research did not lead to person/group discrimination, nor did it involve health and disability topics.

Moreover, regarding human ethics, the researcher obeyed the major ethical principles: “respect the person; minimisation of harm to participants, researcher, institutions and groups; informed and voluntary consent; respect for privacy and confidentiality; the avoidance of unnecessary deception; avoidance of conflict of interest; social and cultural sensitivity to the age, gender, culture, religion, social class of the participants; and justice” (MUHEC, 2015). The researcher informed the participants clearly about the research. The participants were invited to participate voluntarily. They also had a right to not continue their participation during the research or ask to not to be recorded. Furthermore, the researcher gave detailed information to the participants confirming that their personal identity would not be published, or made available to anyone.

4.9. Chapter summary

This study used a qualitative case study research design in order to answer the research question and achieve the research aim. A single case study research was conducted to gain insight on how smallholder rice farmers work collectively and gain benefit from doing so, thus they are able to capture value from the rice value chain. A farmers' group in Yogyakarta province, named Gapoktan Sidomulyo, was selected, based on the internal assessment of the Ministry of Agriculture, which covers the organisation management performance and rice processing unit business performance. The researcher also takes into account the provincial agriculture department officer's recommendation.

The primary data was collected through semi-structured interviews. Subsequently, in order to understand the setting of the case, the researcher conducted field observations before the interview process and during the field work. Interviewees were selected by using purposive sampling. The interviewees were the actors who are relevant to the research, such as the Gapoktan Leader, the RPDU Manager, the FSU Manager,

Poktans' Leader, farmers, government officers, and buyers for restaurant chains and food manufacturers.

Meanwhile, secondary data was collected from the government and the farmer group. The possible documents that were gathered are the Ministry of Agriculture ordinance, Ministry of Agriculture technical guidelines, local government ordinance, the organisation article, administrative documents, group report, and any other group's documents considered relevant to the study. The data was analysed using qualitative data analysis techniques. This technique included description, classifications, and making connections.

This research was classified as low-risk for the researcher and the participants. Furthermore, the researcher has minimized the risk that may emerge during the research. In that regard, the researcher has obeyed the major ethical principles.

Chapter 5. Case Description

5.1. Introduction

This chapter describes the contextual background of the case, explaining the geographical situation, climate, and demographic situation in the Special Region of Yogyakarta. Subsequently, it highlights the geographic and demographic situation in District Godean. Thereafter, this chapter pictures the situation in Sidomulyo Village. It provides the village's geographic and demographic information, also showing the agriculture sector, the local culture, and the village government structure. This chapter then describes the external supports that were gained by the Gapoktan Sidomulyo, and also highlights its organisation structure.

5.2. The Special Region of Yogyakarta

5.2.1. Geographical situation

The Special Region of Yogyakarta is situated in the middle of Java Island (see Figure 8). It is surrounded by some regencies under Central Java Province: Klaten Regency, Wonogiri Regency, Purworejo Regency, and Magelang Regency. The Special Region of Yogyakarta consists of four regencies and one city. They are Kulon Progo Regency, Bantul Regency, Gunung Kidul Regency, Sleman Regency, and Yogyakarta City.



Figure 8. The Java Island Map
Source: (D-Maps, n.d.)

Gunung Kidul is the largest regency in Yogyakarta. It covers 46.63% of the province's total area. The second largest is Kulon Progo Regency, followed

respectively by Sleman Regency, Bantul Regency, and Yogyakarta City (18.4%; 18.04%; 15.91%, and; 1.02%). Meanwhile, based on the physiographical situation, the Special Region of Yogyakarta consists of four different areas: Mount Merapi, the Southern Mountains, Kulon Progo Mountains and the South Mainland, and the mainland between Southern Mountains and Kulon Progo Mountains. In addition, 65.65% of the areas in this province, lies at a height between 100 and 499 metres above sea level (BPS Provinsi D.I.Yogyakarta, 2015).

5.2.2. Climate

From the data provided by the Meteorology, Climatology and Geophysics Agency, the Statistic Agency Yogyakarta Office reported that the monthly average temperature in 2014 was between 25.3⁰C and 26.8⁰C. Meanwhile, the average precipitation was 169 mm and the average rainy day was 13 days per month. Moreover, it was reported that there were 17 rainy days in a month. The peak of the rainy season is in December with 28 rainy days in a month (BPS Provinsi D.I.Yogyakarta, 2015).

5.2.3. Demographic situation in the Special Region of Yogyakarta

In 2014, the population of the Special Region of Yogyakarta was estimated to be around 3.6 million people. The population density was 1,142 people per square kilometre. The Yogyakarta City had the highest density, namely 12,322 people per square kilometre. On the other hand, Gunung Kidul Regency had the lowest density with only 470 people per square kilometre. Meanwhile, the population density of Sleman Regency was 2,025 people per square kilometre (BPS Provinsi D.I.Yogyakarta, 2015).

The proportion of male and female population in the Special Region of Yogyakarta was nearly equal, 49.47% of males compare to 50.53% of females. Most of the population is in the age group of 15-65 years old. This population was dominated by people who work in the agriculture sector and wholesaler, retailer and restaurant sector (see Figure 9) (BPS Provinsi D.I.Yogyakarta, 2015).

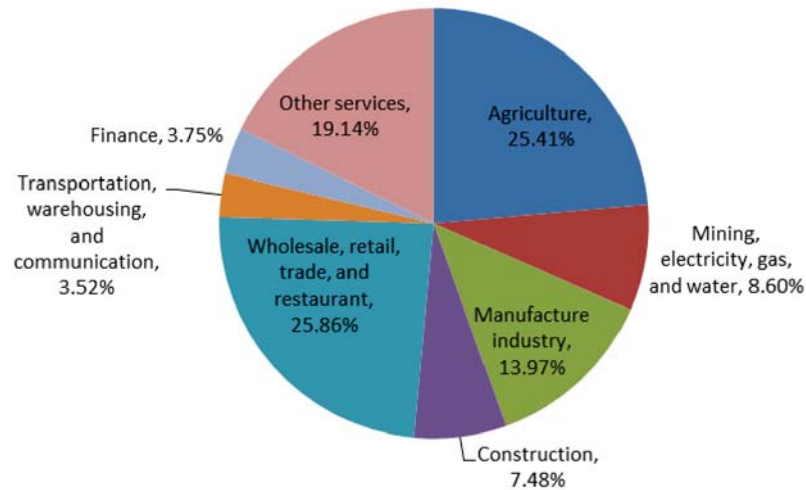


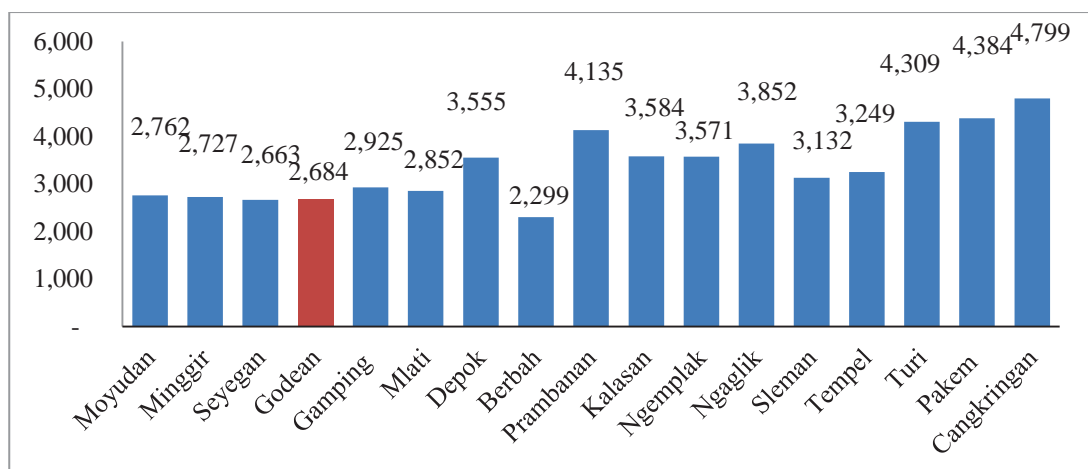
Figure 9. The proportion of employees in the Special Region of Yogyakarta based on the field work 2014

Source: (BPS Provinsi D.I.Yogyakarta, 2015)

5.3. District Godean

District Godean is one of 17 districts in Sleman Regency. It is situated about 35 kms to the south of Mount Merapi and 10 kms from Yogyakarta City (see Figure 11). It covers an area of 2,684 hectares or 4.67% of the total area in Sleman Regency (see Figure 10) and around 1,360 hectares of the District Godean's areas were covered by farming area (BPS Kab.Sleman, 2015a).

In 2014, District Godean was inhabited by more than 21,300 households. In total, there were more than 65,800 inhabitants who lived in District Godean (see Table 7). The population density was 2,452 inhabitants per square kilometre.



Source: (BPS Kab.Sleman, 2015b)

Figure 10. The area in each district in Sleman Regency, 2014 (Hectare)

5.4. Sidomulyo Village

5.4.1. Geographic information

Sidomulyo village is the smallest village amongst seven villages in District Godean. It only covers an area of 250 hectares, with most of the areas are dominated by farming (150 hectares of the total area). Meanwhile, the rest are used as residential, infrastructure, and other non-farming areas. The farming area in Sidomulyo Village is mostly used to grow horticultural commodities such as rice, maize, and ground nuts (BPS Kab.Sleman, 2015a).

Table 6 Total area, farming area, non-farming area, and marginal land in District Godean

Village	Total Area (Ha)	Farming area (Ha)	Non-farming area (Ha)	Marginal Land (Ha)
Sidorejo	544	268	104.68	170.95
Sidoluhur	519	297	136.89	85.11
Sidomulyo	250	150	68.92	31.08
Sidoagung	332	150	126.12	55.90
Sidokarto	364	183.22	133.70	47.08
Sidoarum	373	154.84	151.75	66.81
Sidomoyo	302	164.71	102.03	35.26
District Godean level	2,684	1,367.77	824.09	492.19

Source: (BPS Kab.Sleman, 2015a)

5.4.2. Irrigation system and agriculture sector in Sidomulyo Village

The irrigation system that was used to supply water to farm areas in District Godean is classified as semi-technical irrigation system. The irrigation infrastructure is not fully developed. The tertiary irrigation infrastructure, which distributes water from the primary or secondary irrigation (e.g. dams, canals) is not fully permanent and it is not equipped by a water debit control valve. Farmers in Sidomulyo Village use soil to build the irrigation and to control the debit of water.

The water to irrigate the farming areas in Sidomulyo Village is sourced from Van Der Wijck Canal and Mataram Canal. These canals distribute water from the same headwaters, a dam of Progo River. These canals help farmers to grow rice five times every two years as they always get a water supply for their farm.

In 2014, the Sidomulyo farmers were able to produce around 2,540 tonnes of rice with the average productivity of 6.07 tonnes per hectare (BPS Kab.Sleman, 2015a).

In addition, apart from rice farming, Sidomulyo Village is also known as the pig farm centre in District Godean. Around 80 percent of pigs in District Godean were fostered in Sidomulyo village (BPS Kab.Sleman, 2015a). This indicated that the community in this village is diverse. There were a significant number of non-Moslem populations in this village. According to Bureau of Governance Yogyakarta Regency (2015), the percentage of people who practice Christianity was 28.6% and this was higher than other villages in District Godean. Additionally, the existence of pig farms influenced the rice farms in some part of the village in ensuring the halal status of the rice.

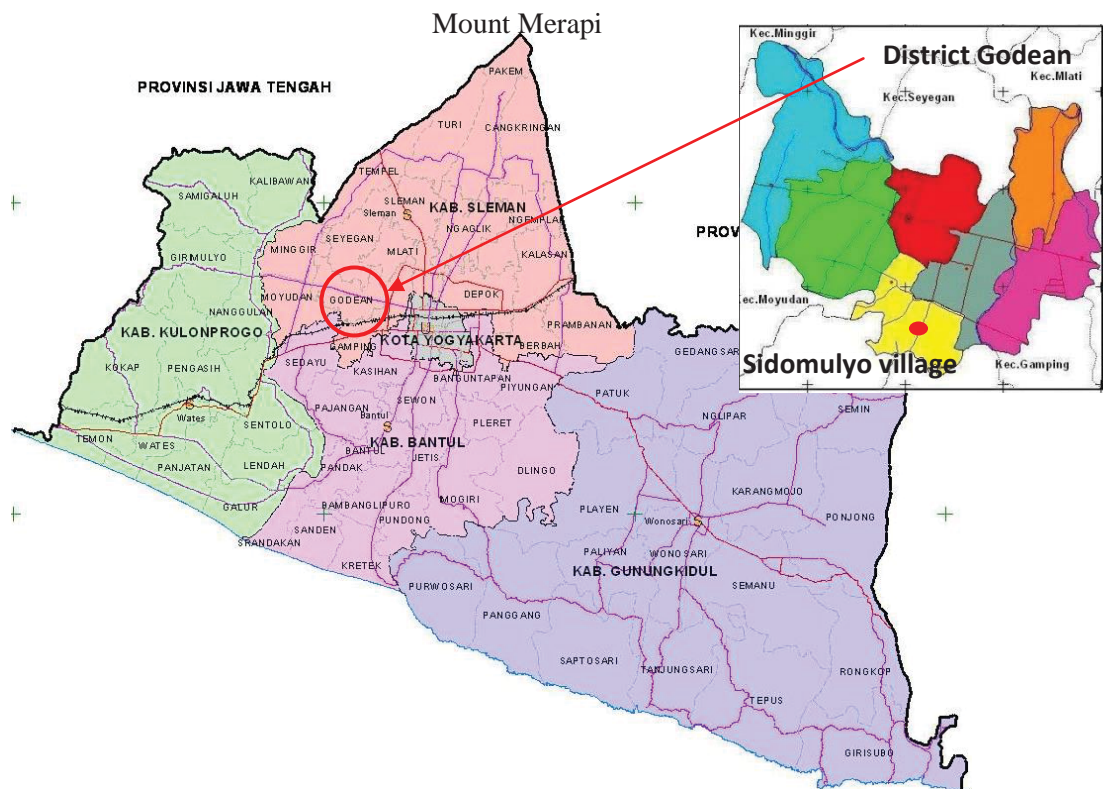


Figure 11. Special Region of Yogyakarta Map
Source: (Pekab Sleman, n.d.; Pemprov DIY, n.d.)

5.4.3. Demographic situation in Sidomulyo Village

In 2015, Sidomulyo Village was inhabited by more than 1,980 households, or around 6,000 inhabitants (BPS Kab.Sleman, 2015). The population density in this village was around 2,400 people per square kilometre. According to the village government document, more than 50 percent of the village population was in the productive age and most of them work in the agriculture sector. Both men and women are involved in the agriculture sector. The men, who are the head of the household, were the

decision-makers. They represent their farm or their household in the local meetings and poktan/gapoktan meetings. Meanwhile, the women help the men to grow rice. Most of the farmers in Sidomulyo Village were aged 50 or over.



Figure 12. A farmer in Sidomulyo Village removes weeds on his farm

In addition, most farmers in Sidomulyo Village were classified as subsistence farmers, with their average landholding being only around 0.2 hectares. In general, they used their produce for daily consumption. They did not sell it to market as they did not have any surplus production. To cover the other basic needs, they worked as labourers in the city.

Table 7 Number of households, number of population, and density per square kilometre

Village	Households	Population	Density (People/km ²)
Sidorejo	2,206	7,082	1,302
Sidoluhur	4,028	10,783	2,078
Sidomulyo	1,988	6,080	2,432
Sidoagung	2,920	8,000	2,410
Sidokarto	3,534	11,947	3,282
Sidoarum	4,110	13,767	3,691
Sidomoyo	2,590	8,165	2,704
District Godean level	21,376	65,824	2,452

Source: (BPS Kab.Sleman, 2015a)

5.4.4. The culture and the character of Sidomulyo Village

The culture in Sidomulyo Village is quite similar to any other rural areas in Yogyakarta Province. In general, the local community have a strong community spirit. They have a willingness to voluntarily work together for a purpose. For example, it is common for the local community to help a family who hold a reception

to cook and prepare the food. This tradition is called “*sambatan/rewangan*”. Another example, there was a day when the village people work together to do community service (*gotong royong*). They commonly do that to welcome the Independence Day celebration or other special occasion.

5.4.5. The Village Government

The village government is the official institution that has the authority to manage and develop the village. This institution is led by a leader called *kades*. The village leader is supported by the village secretary called *carik*, the social and welfare development deputy and the economy development deputy. The village leader is elected by the village people through the general election in the village level. Subsequently, the deputy is selected by the government organisation from at a higher level, such as the district level or the regency level. The people who want to be the deputy have to send in their application and pass the selection process. Meanwhile, unlike the village leader and the deputy, the *carik* position is filled by a civil servant. They are selected by the district office.

Villages in Yogyakarta possess some areas which are commonly called the village ground. These areas are used to support the government to operate the organisation and to be used for public facilities, such as the cemetery or worship place. Subsequently, some of the village grounds are lent to the village government officials. They have the right to manage and earn income from the land.

5.5. The history of community-based organisations in Sidomulyo Village

Gapoktan Sidomulyo is not the first farmers’ group that is established in Sidomulyo Village. More than a decade before the establishment of Gapoktan Sidomulyo, the farmers in a hamlet in Sidomulyo village decided to form a poktan (farmer group). They did that in order to access the seeds and fertilisers from government. At that time, the farmers faced a difficult situation in growing rice regarding farms, as they were finding it difficult to obtain seeds and fertilizers. They then tried to find support from government to manage the problems. Meanwhile, they thought that the government would pay more attention to them if they formed a group. A few years later, a gapoktan was established in order to access the Social Net Safety Program, in particular, related

to food security, which was offered by the government. However, it was indicated that this gapoktan was not improved.

There is another community-based organisation around Sidomulyo Village. It is a rural cooperative called KUD Godean. It serves their members from Godean District. Initially, this cooperative was established to serve people in Godean District who want to apply for electricity. Currently, this rural cooperative is also selling agriculture inputs and equipment.

5.6. Legislation support

The Ministry of Agriculture (MoA) has provided policies and programs in order to improve the smallholder farmers' capacity, to increase their market participation, such as the regulation on poktan/gapoktan establishment and development, the Rural Agribusiness Program (RADP), the Local Food Distribution Program (LFDP), and the Rice Processing Unit Revitalisation Program (RPURP). These policies and programs have been published through different units under the MoA, such as the Agriculture Extension and Human Resources Development Body (AEHRD), the National Food Security Agency (NFSA), and the Directorate General of Processing and Marketing of Agriculture Commodities (DGPMAC). The policies and programs are delivered to farmer groups through a regency office under the coordination of a provincial office. The farmer groups have to propose the program to the regency government and, thereafter, the regency government delivers the proposal to the provincial government. This system allowed the local government and local community to actively participate within the programs offered by the MoA.

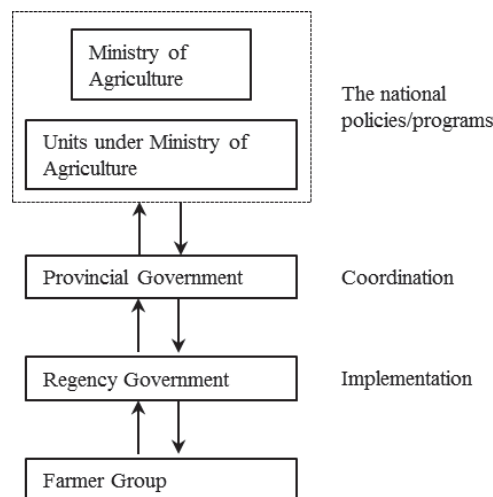


Figure 13. The national programs delivering system to farmer group

5.6.1. Ministerial regulation on poktan/gapoktan establishment and development

In 2007, the Ministry of Agriculture (MoA) issued a regulation about the guidelines for the establishment and development of poktan/gapoktan. This regulation was issued in order to support the national policy to improve the competitive advantage of the agriculture sector. This regulation is used as the legal basis and guidelines for the government officers -from the headquarters level to the district level officer- to implement the national policy by facilitating farmers to establish a poktan/gapoktan. The expected outcome of this legislation is to assist farmers to work collectively so that they are able to explore the potential in agriculture, to solve the agribusiness problems effectively, and to improve their access to information, market, technology, and capital.

5.6.2. Rural Agribusiness Development Program (RADP)

In 2008, the MoA, through the AEHRD, issued a ministerial regulation about the rural agribusiness development program (RADP). The RADP is addressed to gapoktan in Indonesia. This program facilitates gapoktan with financial capital so the smallholder farmers can borrow money from the gapoktan. The aim of the RADP is to develop the small-scale agribusiness in the rural area. The expected outcomes are to provide employment and to reduce poverty in rural areas. By the end of 2009, Gapoktan Sidomulyo was selected by the MoA to manage the RADP program.

5.6.3. The Local Food Distribution Program (LFDP)

Program description

The NFSA have issued the LFDP as they found that most farmers face problems selling their produce, such as rice and maize, at a good price, particularly during the harvest season. The price tends to drop during the harvest season, so that the farmers could not earn a return from their crops. Meanwhile, farmers may also face crop failure risks. Therefore, as a producer, they may not earn money from their farm and on the other hand, as a consumer, they do not have direct access to the staple food.

In 2010, the NFSA selected Gapoktan Sidomulyo to manage the LFDP. The LFDP provided incentives for Gapoktan Sidomulyo, so that they could buy rice from farmers at a good price. This program also facilitated them to build a village granary.

Principally, this program aims to develop the ability of gapoktan to distribute farmers' produce, improve the gapoktan market networks, reduce price volatility, and develop the local food security system (National Food Security Agency, 2009).

Program implementation

As the headquarter office, the NFSA involves the Regency Office of Agriculture Department Food Security Division (ROADFSD) and the Provincial Office of Food Security Department (POFSD). The ROADFSD has the authority to identify the potential gapoktan to be offered to the POFSD. They also have the authority to evaluate the performance of the agriculture extension officer, who assists gapoktan to improve their organisation. Moreover, they have to organise workshops or training for farmers and agriculture extension officers.

There were several things are considered by the ROADFSD in selecting a gapoktan to run the LFDP. The first consideration was their ability to manage and develop the RADP that was started a year before the LFDP. Secondly, they considered the organisation's performance. In that regard, the ROADFSD monitored the organisation's operation a year before they sent the proposal for LFDP to the POFSD. They considered the performance on group funding, member's participation, and their willingness to be developed. Thirdly, the ROADSFSD also considered the performance of the agriculture extension officer in charge to the Gapoktan Sidomulyo.

Meanwhile, the POFSD has the authority to verify the potential gapoktan that was offered by the ROADFSD and the people who will assist the gapoktan. They also have the authority to recommend the potential gapoktan to the NFSA. Moreover, they have a responsibility to monitor and evaluate the implementation of LFDP.

5.6.4. The Rice Processing Unit Revitalisation Program (RPURP)

Program description

The RPURP aims to develop the small-scale rice processing industry so that they are able to improve the processing efficiency and rice quality. Therefore, smallholder farmers are able to improve their market participation. The RPURP has facilitated gapoktan to access the modern small-scale rice processing technology and supported

them to establish a rice processing plant that met the GMP standards. In 2012, the DGPMAC selected Gapoktan Sidomulyo to organise the RPURP.

Program implementation

Similar to the LFDP implementation system, the DGPMAC also involves the Regency Office of Agriculture Department Processing and Marketing Division (ROADPMD) and the Agriculture Department Provincial Office (ADPO). The regency office and the provincial office are working as a ‘technical team’, whose authority is to verify the gapoktan that had proposed for the RPURP. They also organised training and a workshop, such as on good handling practices and good manufacturing practices, as part of the program implementation.

The selection processes

To be selected by the DGPMAC, a gapoktan has to send a proposal to the ROADPMD. The ROADPMD Officer will then verify the gapoktan before they send the proposal to the ADPO to be legalised and to be delivered to the DGPMAC.

There were some factors that are considered by the ROADPMD officer for the verification. Firstly, they considered the farm areas covered by a gapoktan because it influenced the on-farm production capacity. Secondly, they considered the number of the existing rice-milling plants around the gapoktan. This was aimed to avoid competition in obtaining raw material inputs. There were four rice-milling plants that exist in Sidomulyo Village. Thirdly, the ROADPMD officer considered the human capability, such as the machinery operator and the group organiser. Fourthly, the ROADPMD considered the information about the gapoktan’s performance provided by ROADFSD and Agriculture Extension Officer. In Sleman Regency, the ROADPMD and the ROADFSD is under the same institution, the Regency Office Agriculture Department (ROAD). This leads to better coordination between the Processing and Marketing Division and Food Security Division.

5.7. Other support from non-government institution

Gapoktan Sidomulyo also received programs from the Central Bank of Indonesia Yogyakarta Office (CBIYO) and their business partner. The CBIYO selected Gapoktan Sidomulyo to participate in their Coaching on Management Program. Subsequently,

Gapoktan Sidomulyo had received a rice production training program from one of their buyers. They were trained to improve their skills to implement the organic rice production so that they can supply the market with organic quality rice. The buyer trained the farmers to produce liquid organic fertilizers and also educated the farmers to implement the principles of good farming and handling practices.

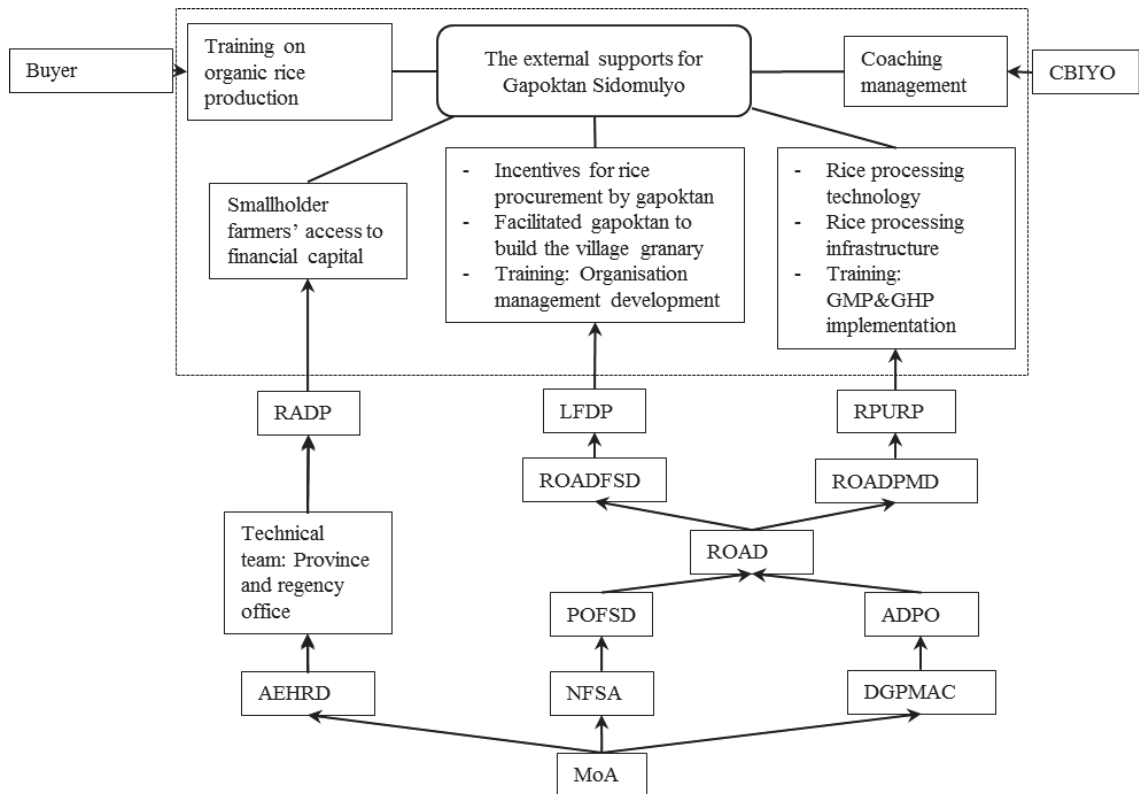


Figure 14. The external organisations and its support to Gapoktan Sidomulyo

5.8. Gapoktan Sidomulyo organisation structure

Gapoktan Sidomulyo consists of farmers under the six poktans in Sidomulyo Village, namely: Poktan Tani Mulyo in Dukuh (hamlet) Pirak Bulus, Poktan Sri Rejeki in Dukuh Brongkol, Poktan Ngudi Makmur I in Dukuh Sembuh Lor, Poktan Tani Rukun in Dukuh Sembuh Kidul, Poktan Ngudi Makmur II in Dukuh Gancahan V and VI, and Poktan Manunggal Karso in Dukuh Gancahan VII and VIII. The Gapoktan acted as a coordinator for these poktans. They do not have the authority to directly coordinate the farmers. The poktan will do the coordination and deliver the message from the gapoktan to their farmers. The structure of Gapoktan Sidomulyo consists of the board, the advisory board, supervisor, and operational management (in this study, the organisation board and the operation manager then called as the leadership team). This structure is

filled by the representative from the poktan's organiser. There are three or four representatives from each poktan required to be involved in the management structure of organisation.

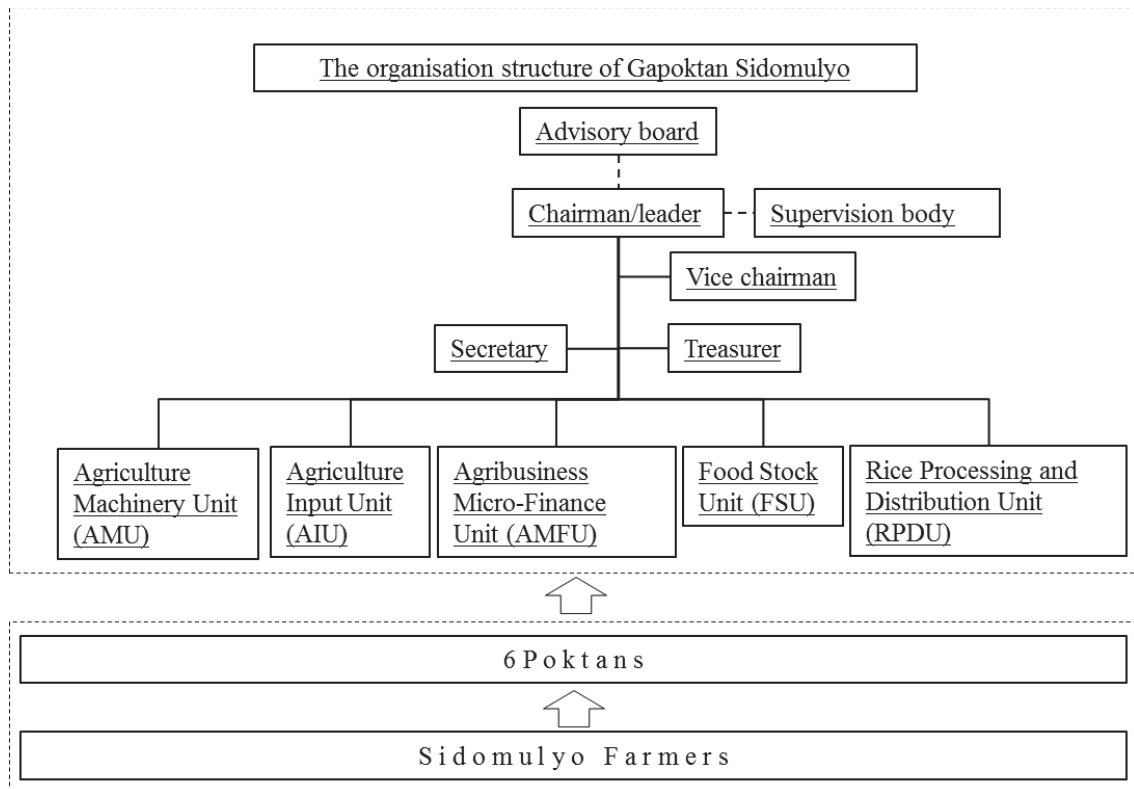


Figure 15. The organisation structure
Source: Gapoktan Sidomulyo (2016)

Board organisation

The board of this organisation consists of a chairman, a vice-chairman, a secretary, and a treasurer (Gapoktan Sidomulyo, 2008). The board members were elected by the general assembly and are elected every three years at the group's annual meeting.

The board has the authority to select the advisory board, supervision body, and the operational management, namely the management of Agriculture Machinery Unit (AMU), Agriculture Input Unit (AIU), Agribusiness Micro-Finance Unit (AMFU), Food Stock Unit (FSU) and Rice Processing and Distribution Unit (see Figure 15). Subsequently, the board has the authority to determine the unit's budgeting policy, for example, related to the capital from external sources and organisation securities.

However, they do not have the authority to manage the group daily operation; this function is executed by the unit managers.

Advisory board and the gapoktan supervisor

Gapoktan Sidomulyo has an advisory board, which consisted of the district government leader and the village leader. The board is not actively involved within the group operation. It was indicated that this position was included in the organisation structure in order to maintain the relationship between the gapoktan and the local government. Meanwhile, the gapoktan supervisor consists of three members who were village public figures. According to the organisation article, the members of the gapoktan supervisor have to know about micro-small scale agribusiness, and actively participate in the local community (Gapoktan Sidomulyo, 2008). The supervisors not only monitor the unit managers, but also facilitate in the event of conflict between members.

The Agriculture Machinery Unit (AMU)

The AMU provides the post-harvest machinery service such as the power thrasher. There are two benefits that can be obtained by using this service. Firstly, this enables farmers to reduce the post-harvest losses. Compared to the traditional technique, when farmers hit the rice straw on a wooden board, the power thrasher is more efficient. Secondly, it increases the unhusked rice quality, which leads to a better rice quality. Some of the machineries' procurement was facilitated by the MoA, while some of the others were bought by Gapoktan Sidomulyo. Despite some being supported by government, farmers still have to pay for the service in order to cover the operation's costs.

Agriculture Input Unit (AIU)

The AIU serves farmers to access seeds, pesticides, and fertilisers. This unit commonly obtain the subsidised seeds from government. The unit then distributes the seeds to farmers. Meanwhile, for the fertiliser procurement, this unit has a partnership arrangement with the rural cooperatives in District Godean (KUD Godean), which was selected by the fertiliser producer to be one of the authorised fertiliser distributors in District Godean.

The Sidomulyo Village farmers, who want to buy the fertiliser, have to register their farm area with the poktan. The poktans then arrange their definitive plan in order to calculate the fertiliser demand (based on the farm area). Thereafter, they submit the plan to the AIU. This unit then orders the fertiliser from the rural cooperative and distributes it to farmers.

Agribusiness Micro-Finance Unit (AMFU)

The AMFU have the authority to provide a loan service to gapoktan members. This loan is aimed to assist farmers, or farmers' households, to develop their farms or their off-farm businesses. Farmers who borrowed money from this unit have to return the capital at an interest of 1.5 percent per month, and they will receive an incentive if they could repay the debt on time. Mostly, the Sidomulyo farmers use the loan to cover the rice production cost as they have to pay for the seeds, fertilisers, rice planters, and rent the tractors. In general, they do not have the capital to cover the cost as they tend to use rice, instead of money, as their savings.

Food Stock Unit (FSU)

The FSU is the Gapoktan Sidomulyo's non-profit unit, aimed to maintain the food security in the village level. They initially managed IDR 20 million (around NZD 2,000) to operate this unit. The funding was obtained from the government as part of the social services. In order to support this unit, the village government issued a village policy that urges farmers who cultivate more than a 500 metres square area, to save 5 kilograms of rice from their production to this unit. Farmers could borrow rice up to 100 kilograms and they can return the rice after they harvest their crop.

Rice Processing and Distribution Unit (RPDU)

This unit provides rice processing and rice distribution services. It collects rice from farmers, processing and selling it collectively. Principally, they facilitate farmers to participate in the market. This unit produces an environmentally friendly product from a different variety of rice, such as IR 64, Ciherang, Inpari, Mentik Wangi, Mentik Susu, and red rice. The unit, which obtained support from the MoA, was facilitated with a budget to build the infrastructure and the rice processing technology (e.g. rice miller,

rice polisher, sorter, and packaging unit). *This unit is the main focus of the research and is included in the results chapter (Chapter 6).*

Gapoktan members

According to the organisation article (2008), the member of Gapoktan Sidomulyo is classified into five different categories, namely: the honoured founder member, the founder member, the general member, the extraordinary member, and the honoured member. However, in the factual condition, there are only two different groups of members. They are the active member and the passive member (see Figure 16).

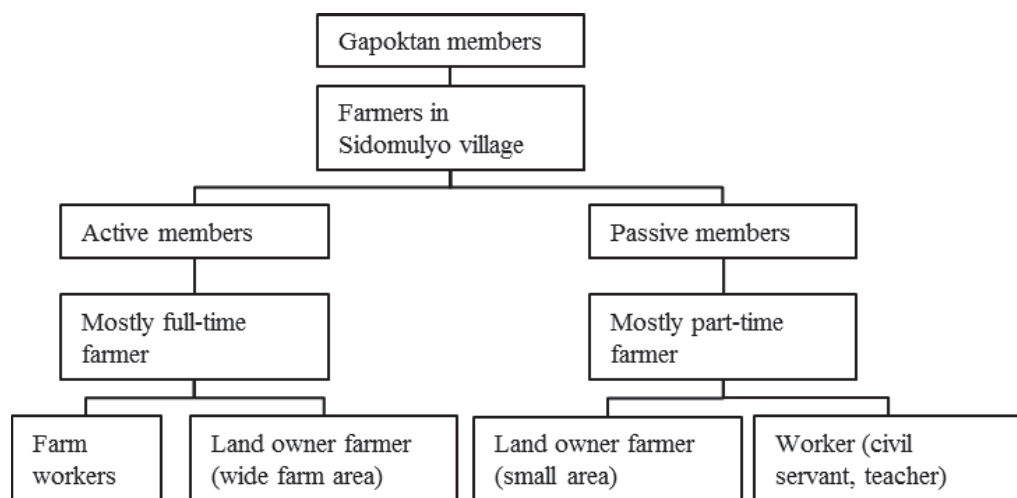


Figure 16. Gapoktan Sidomulyo members

Source: Data collection

Farmers in Sidomulyo Village are automatically recorded as a Gapoktan Sidomulyo member. However, not all of these farmers are registered as active members of Gapoktan Sidomulyo. To be an active member, farmers have to register and pay the membership fee. The membership fee was IDR 20,000 (around NZD 2). They also have to pay a monthly payment, which was only IDR 1,000 (around NZD 0.1). There were around 200 farmers registered as active farmers and, in general, they were who spend their time mostly on the farm (full-time farmers). These full-time farmers were mostly farm labourers and the land-owner farmers who managed a large farm area (more than 1 ha).

The active members have some rights, such as a right to elect and to be elected as a board member and a group organiser. Each member has one vote for the board election. They also have a right to raise opinions to the board or group organiser, and monitor the gapoktan's progress regularly. Moreover, by the end of the year, they will receive a

dividend from the gapoktan's organiser. In addition, the active farmers have an opportunity to earn more income since they have better access to information about the group's productive activity.

On the other hand, the passive farmers are the farmers who had not registered and paid the membership fee and monthly payment. This group was dominated by part-time farmers who held a small farming area. The passive farmers do not have the right to receive the dividend, elect or to be elected as the board members. They also do not have the right to raise their opinions and monitor the group's progress.

Chapter 6. Results

6.1. Introduction

This chapter describes how Gapoktan Sidomulyo operates. Firstly, it explains the process of group establishment and, secondly, the group governance and group activities. Thirdly, the chapter describes the rice production and rice processing and marketing under Gapoktan Sidomulyo.

Subsequently, this chapter describes the benefits that are gained from Gapoktan Sidomulyo. It pictures the benefit from a different perspective, such as from the Gapoktan board and organiser, the member, the local community, and the buyer. In addition, factors are explained that seem to contribute to Gapoktan Sidomulyo's operation so that they are able to gain benefit from the rice value chain system.

6.2. How Gapoktan Sidomulyo is operating as a group

6.2.1. The establishment process

The information about RADP triggered the agriculture extension officer in Sidomulyo village to initiate the establishment of Gapoktan Sidomulyo. He then disseminated this information not only to poktans in the village, but also to the village leader and local public figures. He talked about the village's agriculture potential that could be developed with the program's support. The agriculture extension officer stated, *"In 2007, there was information about RADP. In 2008, Sidomulyo did not receive the program, but, still, I had to prepare the people to organise the program, so that we would be ready in case we got the program"* (Agriculture Extension Officer, 2016).

The agriculture extension officer was fully supported by the village leader (*kades*) of Sidomulyo Village. The *kades* was a retired soldier and had led Sidomulyo Village for three decades. Moreover, he was the second Indonesian president's relative. This kinship had influenced the attitude of the villagers toward the *kades*. The *kades* supported the agriculture extension officer in establishing a gapoktan and proposing the RADP because it supported his vision to develop the agriculture industry in the village. Therefore, it provided more employment opportunities for the local

community and reduced the urbanisation rate. His support was essential for the agriculture extension officer as he was respected by the local community and had a strong influence on them. The local community tended to obey him and followed his instructions. As stated by the agriculture extension officer, *“The former village leader was very responsive to the agriculture sector. When we (the agriculture extension officer and the gapoktan) faced problems, he tried to help us to solve the problems”* (Agriculture Extension Officer, 2016).

A similar sentiment for former village leader was also expressed by the RPDU Manager:

The former village leader was very supportive, particularly for the group development. The local community respects him very much. He allowed us to share his land to be cultivated so that we can sell the produce and earn money. He had a great spirit. He tried to actively participate within the group. He tried to attend every meeting with the district government (RPDU Manager, 2016).

Supported by the *kades*, the agriculture extension officer encouraged farmers under poktans in Sidomulyo Village to establish a gapoktan. The agriculture extension officer, facilitated by the *kades* and his staff, arranged some meetings to follow up the information about RADP. In these meetings, he involved the village government representatives, the poktan representatives, and local public figures who had influence in the community. Therefore, the local farmer communities and the local stakeholders in Sidomulyo Village were aware of this program and supported the gapoktan establishment. The RPDU Manager stated, *“We had met several times to transfer information, three times, if I am not mistaken. We talked about the legislation background. We also talked about the purpose of group establishment and the government facilitation”* (RPDU Manager, 2016).

The agriculture extension officer conducted several meetings before the gapoktan establishment, and involved different actors to gain support, as he wanted to prepare this group carefully. Setting up the organisation structure and the people involved within it, was a very crucial stage, because this would affect the future of the group in managing the RADP. If the people involved were not ready and did not have the capability to manage the program, this group may not be able to optimise the government support. As a consequence, the smallholder farmers would not benefit

from this program. In addition, the gapoktan's performance would also influence the agriculture extension officer's assessment of his working performance, as revealed from this sentiment:

I have to prepare the human resources before the gapoktan receive the government program. It is important for me. I don't mind if people hate me (because this may take time, while farmers may want the program immediately). This process will not present any disadvantages for farmers and government. On the other hand, I will put myself at risk if the group failed to manage the program (Agriculture Extension Officer, 2016).

In short, the process of the group establishment is described in the Figure 17.

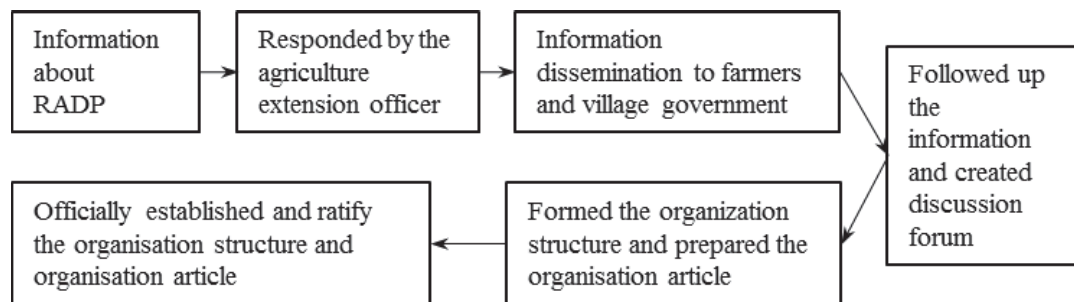


Figure 17. The processes of group pre-establishment and post-establishment
Source: Data collection

Despite the agriculture extension officer having approached different local people and sharing information and visions about the agriculture potential in the village, he still found negativity among farmers about Gapoktan Sidomulyo. Some farmers did not want to participate as they thought that Gapoktan Sidomulyo was just the same as the previous gapoktan, which were not beneficial to them. In that regard, the agriculture extension officer and other people who were involved in the group establishment did not reassure these farmers by words. They preferred to take real action and implemented their plan to prove that Gapoktan Sidomulyo was different from the previous collective farmer group.

6.2.2. Regular Meetings

After Gapoktan Sidomulyo was officially established, they then started to have a regular meeting, on the tenth day of each month. In the early years, these meetings

were facilitated by the village government and held at the village meeting hall. At that time, they did not have an office. Moreover, there were not many activities organised by Gapoktan Sidomulyo. Accordingly, the organisation committee and the poktan representatives used these meetings to talk about current issues on rice farming and to strengthen their relationships. As stated by the Gapoktan Leader, who was involved in the group from the beginning, “*We had not received any government subsidies (in the first two years) so we just talked about current issues related to agriculture. We tried to build the internal connection and familiarise one another*” (Gapoktan Leader, 2016).

After the first two years, eventually Gapoktan Sidomulyo started to organise the RADP program, and to have a regular activity. They also built their own office. Nevertheless, this office is not used to hold the regular meeting. The regular meeting is held in rotation around the houses of the leadership team (gapoktan board and unit managers), the active members and other local people who are included in a program called *arisan*.

Arisan is a program that is held during the regular meeting. This is similar to a lottery. The *arisan* members have to give some money (it was IDR 20,000 or equal with NZD 2.2) to the *arisan* administrator, who is selected from the *arisan* members. Subsequently, the administrator will draw out a name. The winner will get the total amount of money that has been collected from the *arisan* members. To win the prize, the *arisan* members have to attend the meetings. Thereafter, the winner will be the host for the next regular meeting.

Each *arisan* member will win the *arisan* in an *arisan* period. For example, if the *arisan* involves 12 participants, the administrator will collect the money from the participants 12 times. The administrator will also draw a name for 12 times. The participant's name who already won the *arisan* will not be included in the next drawing, but this participant still have to give the money to the administrator until all of *arisan* member won the lottery.

Arisan was used to maintain the leadership team and the non-leadership team's participation in fostering the gapoktan. It triggered them to attend the meeting as they have a chance to win the *arisan* during the meeting. Subsequently, as the winner will be the host of the next meeting, this compelled the farmers to actively participate

within the group. As stated by one of poktan leader, *“It was only a small amount of money. This (the arisan) was just the way to maintain the member’s participation in the group’s meeting”* (Poktan Leader, 2016).

The regular meeting enabled the leadership team to disseminate the gapoktan’s progress report and the gapoktan’s next plan to the poktan level and other stakeholders as these meetings involve different actors from the village community. This also enabled them to obtain information from farmers about the current situation in Sidomulyo’s agriculture sector. Moreover, by meeting regularly, allowed the meeting participants to actively participate in fostering the gapoktan. It facilitated them to speak their views, and make suggestions to the leadership team in addressing issues. In addition, the meeting allowed the participants to be involved in the group decision making.

An opinion from a Sidomulyo farmer about the regular meeting was expressed during the interview:

“They would listen to us. We could raise our views here. That was the purpose of the meeting. If I had any opinion to be expressed, I would do that during the meeting. If my opinion was good for the group, the discussion forum would accept and (the organiser) would implement that” (Sidomulyo Farmer, 2016)

In addition, the monthly meeting allowed the group organiser to avoid the potential conflict that may emerge within the group. It helped the organiser to clarify in case there was a misunderstanding between the gapoktan leadership team and poktans. The poktan representatives could ask the leadership team. On the other hand the leadership team could give an explanation to answer the question.

We conducted the monthly meeting to inform the farmers and village community about the gapoktan’s progress. (Subsequently) We did this monthly, so that we could immediately take action in case of facing some problems. Therefore, we could reduce the potential of conflict, before it gets bigger and bigger (RPDU Manager, 2016).

6.2.3. Rice production and supply

The RPDU obtained the raw materials from the internal production and the external supply. The raw material procurement was arranged with contract farming and direct purchasing, as can be seen in Figure 18.

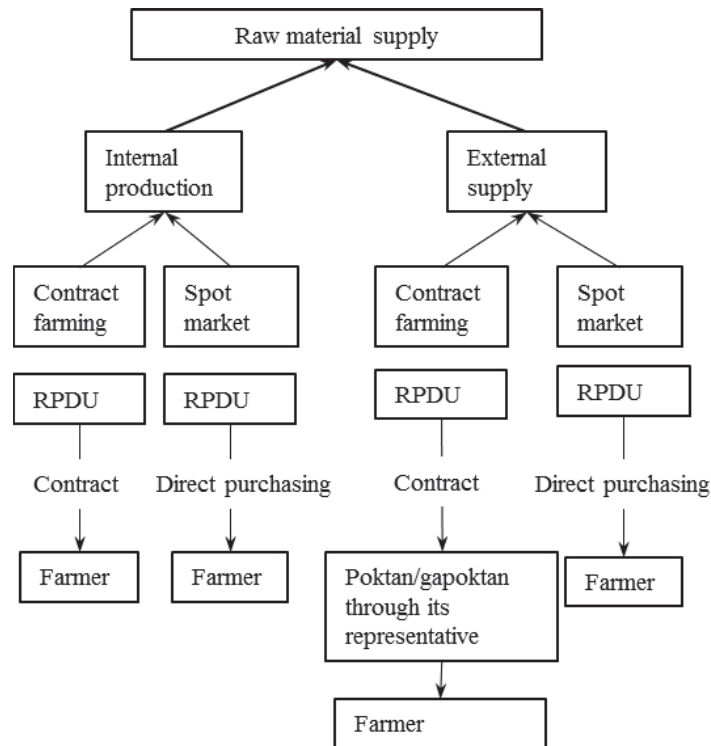


Figure 18. The raw material supply in Gapoktan Sidomulyo

6.2.3.1. The Internal production

The internal production means Gapoktan Sidomulyo, through the RDPU, collect the raw materials from farmers in Sidomulyo Village. In general, there were two different methods from the internal raw material procurement, being contract farming and spot market.

Contract farming

In contract farming, the RDPU offers the contract to Sidomulyo farmers who want to work under contract. This offer is sent directly to the farmers and not passed through the poktans. The direct contract enables the RDPU Manager to connect to the individual farmers and direct them without involving the poktan. Therefore, the RDPU Manager can ask the farmers directly to fulfil their demand as mentioned in

the contract, for instance, asking farmers to use some particular seeds, or to grow the rice with some particular production system.

The contract is set before the growing season, wherein, the RPDU will set the price, which is higher than the floor price that has been set by government. For example, if the floor price is IDR 3,800 per kilogram, they will set the price for farmers under contract at IDR 4,200. Subsequently, they will provide the farmers who want to join the contract with seeds and organic fertilisers. Moreover, they will provide a soft loan with a higher amount than the loan provided by the AMFU. In return, the farmers under contract must obey the contract and sell not less than 50 percent of their production to the RPDU. The RPDU does not obligate them to sell more than that volume in order to maintain the safety stock in the household level. This is also aimed to give space to the farmers to sell their produce to other buyers, in case there are other buyers who offer a higher price.

The contract farming method is part of the RPDU management's strategy to encourage farmers to support their mission to develop environmentally friendly farming. Initially, the farmers will be asked for their willingness to implement the environmentally friendly farming method by reducing their use of chemical fertilisers and pesticides. Eventually, they will be asked to implement the full organic farming system, which means they not only have to utilise the organic materials, but also to keep the water supply clear from chemical contamination. The aim is to produce the premium rice so that they can enter the higher market that offers more value with fewer competitors. As stated by the RPDU Manager, "*we want to play within the market segmentation that has fewer competitors*" (RPDU Manager, 2016). Annually, the farmers who work under contract are ranging between 30 and 60 farmers. These farmers hold between 20 and 40 hectares of farming area and are mostly full-time farmers.

Spot market

Not all of the farmers in Sidomulyo Village want to join the contract farming. In that regard, the RPDU will not push them to join. The non-contracted farmers are under no obligation to sell any of their production. On the other hand, they do not have the right to access the seeds, organic fertilisers and loans from the RPDU.

Unlike the contract farming method that enables the RPDU to set the price before the growing season, in the spot market method, the RPDU will use the current market price and the government floor price, as their reference. They will check the produce quality, such as the colour, the percentage of the broken rice (if the farmers prefer to sell the milled rice, *see rice processing section*), and set the price based on the quality. However, in general, they will still offer a higher price than the market price, or at least the same as the floor price. Sometimes, the market price is lower than the government floor price due to over-supply, particularly during harvest feast. The RPDU still offer farmers with a higher price as they have a moral obligation to help the smallholder farmers to gain a better price as part of the government LFDP's objectives, as stated by the RPDU manager *"For the spot market, we still consider the floor price. This is because we obtained the government incentives. Therefore, we set the rice price (for the spot market) at least the same as the floor price"* (RPDU Manager, 2016).

Block coordinator

The block coordinator is the person who coordinates farmers under the same farming block. The farming block is the group of farming areas that are based on its border or its location within the village. For example, the farming block to the North/South of the railway (there is a railway across the paddy field) or the farming block to the South of Mataram Canal. The block coordinators work under poktan and manage the schedule for the growing season of each block. Moreover, the block coordinator can suggest to the farmers to apply certain rice farming systems that have been decided during the monthly group meeting. The block coordinators also assist farmers to manage the water supply from the irrigation system.

The time to start growing rice is varied. This farming area (refer to farming area under a poktan) consists of four blocks. Farmers in these blocks will not start to grow their crops at the same time. Each block will have an interlude about 10 to 15 days (Sidomulyo Farmer, 2016).

Farmers in Sidomulyo Village will follow the schedule that is announced by the block coordinators because this will affect their paddy field. This sentiment is expressed by one of the farmers in Sidomulyo:

So, if we start growing our crops at the same time, this will reduce our risk of being attacked by pests, in particular rats. If there is a different growing schedule in the same block, it will be very hard for us to fight the rats (Sidomulyo Farmer, 2016)

Another farmer emphasises the importance of coordination between farmers. He states *“that’s why we work together, so that we can address the rats attack”* (Sidomulyo Farmer, 2016).

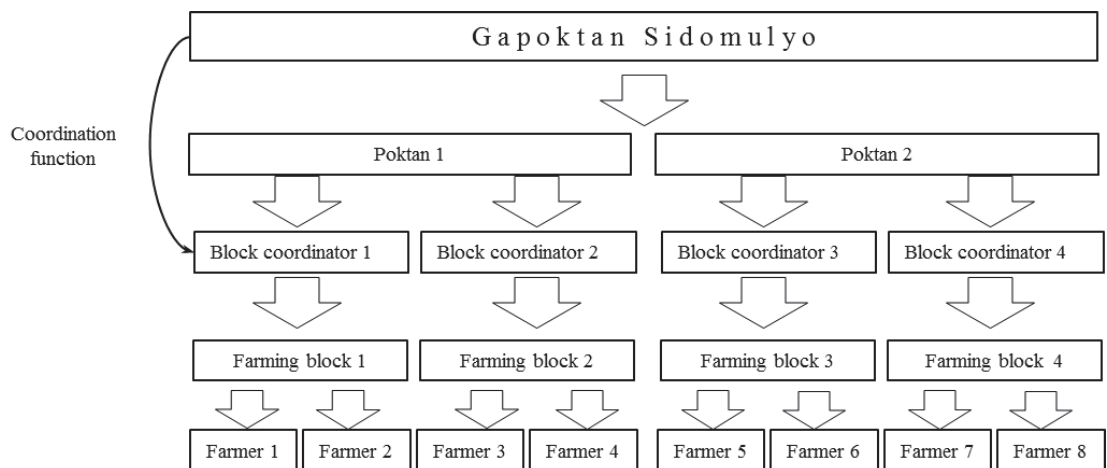


Figure 19. The illustration of connection between Gapoktan Sidomulyo and block coordinator

The situation in the internal production

Despite the fact that Gapoktan Sidomulyo has incorporated more than 600 farmers in Sidomulyo Village who cultivate 150 hectares of farm area, the RPDU still cannot fulfil the market demand from the internal production. Firstly, there are only around 200 farmers who are registered as active members. Not all of the farmers want to register as active members as they did not find more incentives from being registered. Mostly, they are subsistence farmers who hold less than 0.5 hectare of farm area. They cannot produce a significant volume of rice and achieve the production surplus. In general, these farmers use their produce mostly for daily consumption. As stated by one of the farmers, *“Farmers tend to not sell their rice to the gapoktan. Commonly, the rice production is only for the farmer household’s daily consumption”* (Sidomulyo Farmer, 2016). Moreover, if they have any surplus, it is not presenting a significant benefit from the selling profit margin.

If they sell all of their produce and consume the subsidised rice provided by government (the government provided the subsidised rice for the low income household and, in general, the rice quality is low), they may gain profit yet, not significant to cover their living costs, and they cannot eat good tasting rice. Furthermore, as they only earn an insignificant profit, they still have to work as a labourer in the city. Meanwhile, if they hold their own rice, they can sell the subsidised rice and earn a small benefit from that. They may still need to work in the city. Nevertheless, they can eat better tasting rice.

Our members commonly prefer to consume their own rice, which are (the variety) Cianjur, Mentik Wangi, Mentik Susu. If they get the subsidised rice, they will sell it. This is because the taste of their rice is better than the subsidised rice. They said they can eat their rice only with a fried tempeh (a simple traditional side dish) (Poktan Leader, 2016)

Secondly, the fact is that the active farmers may not always sell their produce to the RPDU as not all of them work under contract. Therefore, they do not have an obligation to sell their produce to the RPDU. Moreover, the farmers under contract are not obligated to sell all of their production to the RPDU.

Thirdly, it is usual in this village for farmers to use their produce as a means of saving. They tend to stock their produce, rather than saving money. This is because they can use it for their daily consumption and if they need money, for example to cover the rice production cost, they can sell it to market (this can be to the gapoktan or other buyer). As stated by a farmer in Sidomulyo:

If we want to cultivate our land, we will sell the unhusked rice (the stock). Some of it will be consumed for our family. Some others will be returned to the paddy field (this means they will sell the rice to cover the rice production in the next season) (Sidomulyo Farmer, 2016).

The internal production situation implies to the RPDU in maintaining their rice supply to market. This is because the raw material supply from the internal members cannot cover the market demand. According to the RPDU Manager, the internal production only covers less than 50% of the total market monthly demand. *“We may only obtain 200 tonnes every three months (from the internal production).*

Meanwhile, the average distribution volume is 120 to 140 tonnes per month” (RPDU Manager, 2016).

6.2.3.2. The external supply

In order to maintain the supply continuity, Gapoktan Sidomulyo has arranged partnerships with other farmer groups around Yogyakarta Province and Central Java Province. As stated by the RPDU Manager, *“Our resources are limited, the people and the land. Therefore we have to make a partnership as suggested by the government”* (RPDU Manager, 2016). A similar reason was expressed by the Gapoktan Leader, *“We have a lot of partners. We have to make a partnership in order to avoid stock out. That is our action to address the challenge in sustaining our supply”* (Gapoktan Leader, 2016).

The partners

Gapoktan Sidomulyo’s partners mostly are the gapoktan that run the LFDP Program. They tend to work with them because these other LFDP gapoktans already have the basic knowledge about the program so that they know how to distribute rice from farmers collectively. Moreover, they have the financial capacity to cover the cost as the LFDP also provide initial capital for the program recipients. *“Most of our partners are the gapoktan that manage the LFDP. Therefore, we don’t need to start from zero”* (RPDU Manager, 2016). However, Gapoktan Sidomulyo also has partners from non-LFDP group.

The RPDU is very selective in choosing their partner. Not all of the farmer groups could be in a partnership with them. They will inspect their partner so that they know the real situation in the field and the areas that are used to grow rice. This allows them to trace back their product starting from the up-stream level to the down-stream level. Despite the fact that they will mix the same rice variety from a different paddy field, it is claimed that their ability to trace back sources of the raw material, allows them to maintain the final product quality. In the procurement process, they will check the raw material quality and the sources of these materials, before they mix it together. They can refuse the raw material supply from certain areas if it does not fulfil their quality requirements.

In addition, Gapoktan Sidomulyo will inspect their partner because not all of the farming area can be accepted by buyers due to the soil quality. The buyer -particularly from the food manufacturer supplier- requires a certain quality standard, such as the rice should be produced in a farming area that has passed the soil test. They will not accept rice from soil that is contaminated by heavy metal. Therefore, they have to ensure that their rice was coming from the farming areas that have passed the soil test by their buyer.

Similar to the supply from internal production, the RPDU also do contract farming and direct purchasing (spot market). However, the contract with the external partner is slightly different from the contract with farmers in Sidomulyo Village. For the external supply, they do contracts with the farmer organisation, not the individual farmer. The farmer organisation can be a gapoktan or a poktan. Through the RPDU, Gapoktan Sidomulyo, offers contracts to other poktans or gapoktans, as it helps them to reduce the coordination costs.

The supervisor of the external suppliers

The supervisor of the raw material suppliers external to the group, has a similar function to the block coordinator. The RPDU selects one representative from their partner (other poktan/gapoktan) to organise and supervise the rice production under contract farming. The group supervisors will work for the RPDU and represent the RPDU to their partner. They will obtain incentives from their work. In return, the RPDU management can instruct the group supervisors, in particular, about rice production and farm management. They can ask the supervisors to set the growing schedule of the farmer under contract. Moreover, farmers under contract will obey the group supervisor as it is part of the contract arrangement. The group supervisors have the authority to direct the farmers under contract to implement the RPDU requirement. The authority of the RPDU to instruct their partner group through the group supervisors, to set the growing schedule, allows them to manage the agriculture input supply (e.g. seeds, fertiliser) and to maintain their rice supply.

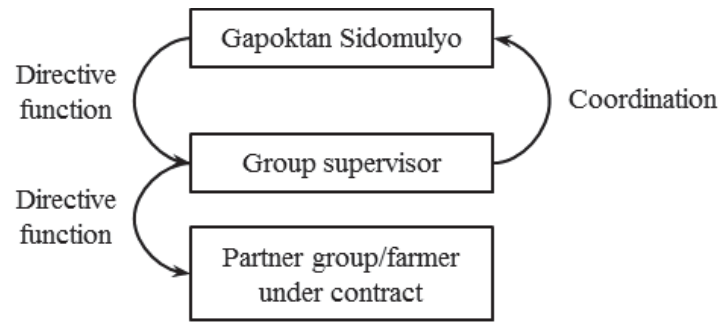


Figure 20. The connection between Gapoktan Sidomulyo, group supervisor, and their partner (other poktan/gapoktan)

6.2.4. Rice processing

The RPDU has a small scale rice milling unit, which is only able to process around 1.5 tonnes of unhusked rice per hour. This unit consists of a rice miller, a rice polisher, a mist blower (see Figure 21), and a rice sorter. This unit is operated by four operators, one of whom is a very experienced operator. These operators received training to operate this machinery from the machinery provider. This training is part of the RPURP as the MoA obligated the machinery supplier to train the operator from the selected group.



Figure 21. Rice processing unit at Gapoktan Sidomulyo's plant

There are two different raw material inputs that are processed by the RPDU. The first is the unhusked rice. The RPDU buy the unhusked rice from their supplier and fully

process it to rice on their rice-processing plant, starting from the milling stage to the rice-sorting stage. The suppliers who sell the unhusked rice mostly come from the internal members and the farmer group partners that do not have rice milling unit. This type of procurement allows the RPDU to control the quality of their product as the raw materials are fully processed in their plant.

The second input is the milled rice. The RPDU buy the milled rice from their supplier (from internal member and external to the group). They polish and sort it before they pack the rice. Some internal members prefer to sell the milled rice to the RPDU. They will mill their produce in the other rice millers around Sidomulyo Village. This is because they want to bring some volumes of rice back home for household consumption and sell the rest to the RPDU. Subsequently, some farmers want the rice bran because it can be used as feed. As stated by a farmer who also led a poktan, *“I sell the rice to Gapoktan Sidomulyo because I need the rice bran. So, it is better for me to mill my produce first and sell the rice (to Gapoktan Sidomulyo), so that I can take the bran”* (Poktan Leader, 2016).

Moreover, the suppliers from the external group prefer to sell the milled rice as some of them have a rice-processing plant. In that regard, the RPDU Manager does not obligate them to mill their produce in the RPDU’s rice processing plant, so they are still able to operate their rice-milling plant. However, these suppliers have to fulfil the RPDU’s demand on certain rice quality, such as the percentage of the broken rice must be small and the colour of the milled rice must be clear.

The (milled) rice to rice production type allows the RPDU to improve their production efficiency. Their processing capacity is small and the (milled) rice to rice production type enables them to shorten the rice processing in their plant. They do not have to process the raw materials starting from the milling stage. As a result, they can improve their supply capacity.

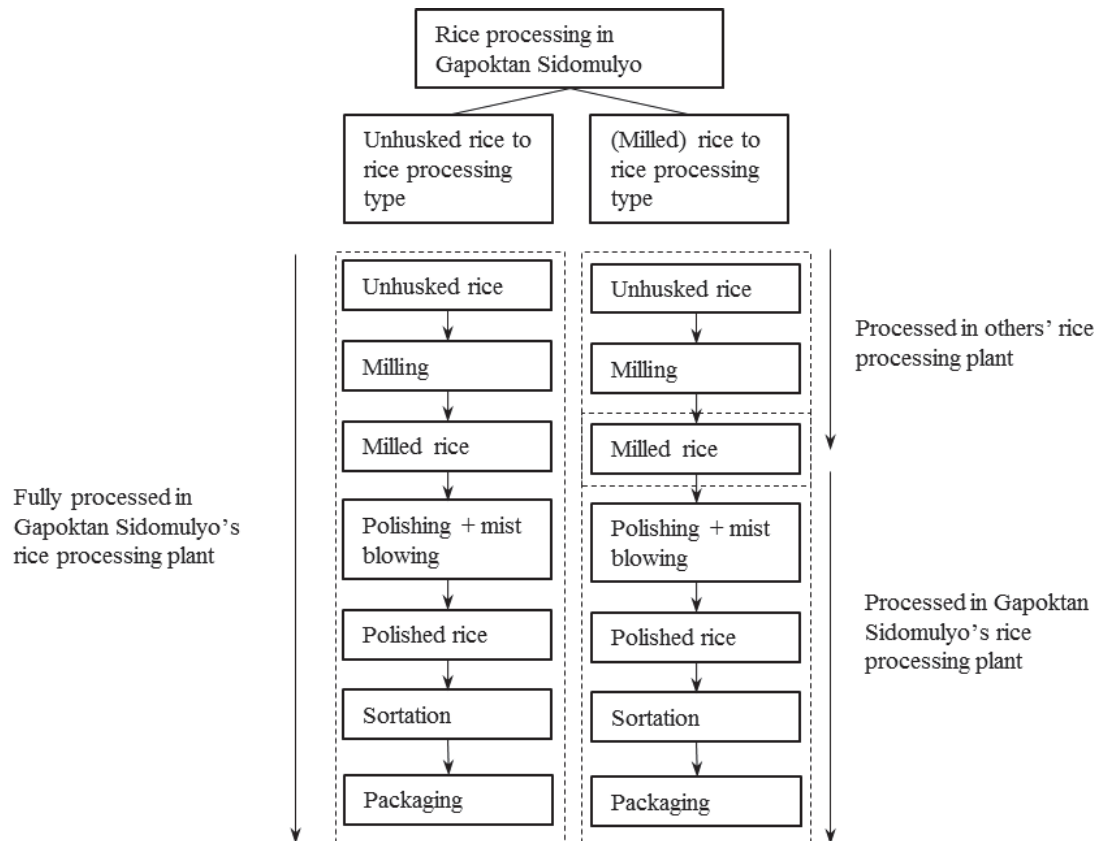


Figure 22. The process of rice manufacturing

6.2.5. Rice Marketing

The RPDU sells the white rice, such as Pandan Wangi, Mentik Wangi, and IR 64. They also offer the red rice to market. The RPDU sells the white and red rice in different packages. They sell the rice in 2 kilogram, 5 kilogram, and 25 kilogram package.

They sell organic product or product with the similar quality with the organic product. They do not claim their product to be organic products and prefer to claim to have the same quality as organic products, as not all of their products have the organic certificate. However, they are trying to encourage farmers to do an environmental friendly rice production and ensure the buyer that they have products that have the same quality as organic products. Moreover, they keep the broken rice proportion under five percent. In brief, they want to offer the premium quality rice to market as they want to target the middle and high income market.

We produce the premium rice so that we can access the higher market. It is obvious that the challenges will be harder. However, if we can reach this market, we can help farmers to gain more benefit (from the market price). If we can sell our product in a higher price, we will also buy the raw materials from farmers with a higher price as well (RPDU Manager, 2016).



Figure 23. The illustration of broken rice (left) and the 5 kilograms package (right) with the tag line "taste good, nice texture, and healthy"

Source: (BB-Padi, n.d) and Gapoktan Sidomulyo Document

Unlike the common structure of the rice market chain in Indonesia, the RPDU sells their product to different markets, such as households, convenience stores, rice suppliers for food manufacturer and restaurant chains, and rice traders (see Figure 24). They sell their own rice brands to the household market and the convenience stores around the Yogyakarta Province. Subsequently, they also allow their buyers to use their own labels and packaging. Commonly, these buyers come from the rice suppliers and rice traders. However, they still have to put the information about the source of the product.

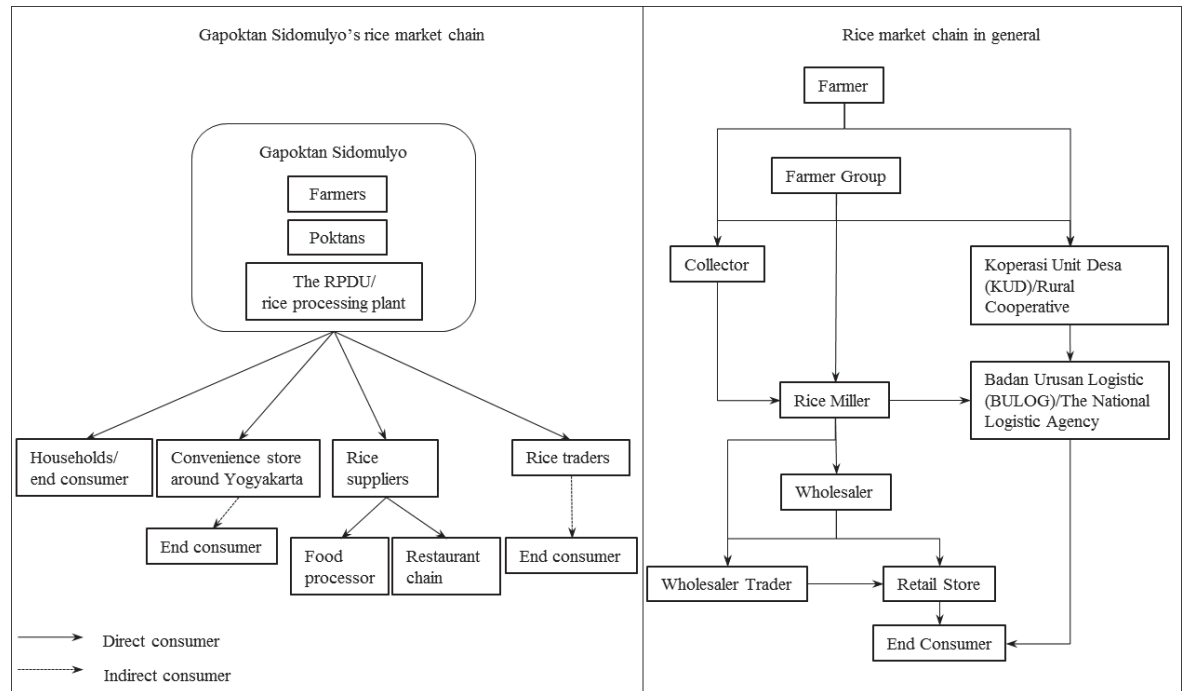


Figure 24. Gapoktan Sidomulyo's market chains compare to rice market chain in Indonesia in general

At the beginning, the RPDU did some promotion activities to introduce their product to the market. Firstly, they did the online promotion. The RPDU Manager offered their product to the potential buyers by sending them an email. Subsequently, they created a product tasting event. The RPDU Manager, together with the unit member, went to a shopping centre in Jakarta, which is the capital city of Indonesia, where they conducted a food-tasting event. This event was inspired by the RPDU Manager's experience when he attended an agribusiness training program in Japan. They also promoted their product on-air. They used the local radio as part of their promotional activities to introduce their brand. In addition, the RPDU attended some agriculture and food fairs, such as in Jakarta, and this helped them to meet the big buyers.

Currently, the RPDU has a large rice demand from the restaurant chain buyers and rice traders. Therefore, they have reduced their promotion activities as they may not be able to fulfil the new market demand. They have even stopped their supply to the food manufacturer supplier in the last few months as their household market has tended to emerge, and they prefer to sell their product under their own brand.

Gapoktan Sidomulyo still attends the local farmer market event that is organised by the ROAD. This event helps them to improve their selling to the household buyer

around Sleman Regency. Selling their product to the household consumer is beneficial as they do not need to wait to earn money, as they get the cash on the spot. Unlike the online promotion and food tasting events that were organised and facilitated by the RPDU Manager, the weekly farmer market event is organised by the Gapoktan Leader. This is part of his support for Gapoktan Sidomulyo.

6.3. The benefit offered by the Gapoktan Sidomulyo

The previous section shows that Gapoktan Sidomulyo had helped farmers to access the government programs. Moreover, there are some other benefits that can be gained from Gapoktan Sidomulyo. The interviews indicate the differing range of benefits that could be gained from Gapoktan Sidomulyo as expressed by different actors.

6.3.1. From gapoktan leadership team's perspective

From the leadership team's perspective, the Gapoktan Sidomulyo allowed them to build a network with other institution. They could obtain more information than the non-group organiser. *"We met a lot of people. People know us and we could share information. We could share each other's experiences"* (Gapoktan Leader, 2016). Subsequently, the Gapoktan Sidomulyo allowed them to obtain some financial benefits from the organisation. The leadership team's work is paid by the organisation through the share of the Gapoktan Sidomulyo benefit. The value may not be large, but this made them feel appreciated by the organisation. Moreover, as the leadership team, they could also gain a financial benefit as they were usually invited by other institutions as a speaker.

However, there are some disadvantages as the member of the leadership team. They have to reduce their time with family; they had to work for their family, and for society. They have morning as well as evening meetings to attend, along with their regular activities. Moreover, they sometimes have to use their own money to fund the gapoktan's activity before it was paid by the group. As the leadership team member, they have to be ready as the group's front man.

6.3.2. From the farmers' perspective

The interview with farmers in Sidomulyo Village revealed some other benefits, apart from accessing the government programs, which are offered by Gapoktan

Sidomulyo. Firstly, the Gapoktan Sidomulyo can be used as the price benchmark for farmers in the village. Farmers can ask the buying price offered by the RPDU before they decide to sell their produce to any other local trader. This information can then be used by the farmer to bargain the price with the other buyer.

However, the farmers in Sidomulyo who have excess production tend to sell their produce to the Gapoktan Sidomulyo as the gapoktan offer a higher price than other buyers. According to the RPDU Manager, the farmers already have a high benchmark for the rice price, as explained in the previous section (6.2.3.1 *The internal production*) that the Gapoktan Sidomulyo never buys the rice from farmers under the floor price that have been decided by the government, even during the harvest feast. Therefore, farmers in Sidomulyo have good options to sell their produce. As stated by one of farmers in Sidomulyo, *“I prefer to sell my produce here at the Gapoktan Sidomulyo. I can sell it at a higher price, compared to any other local rice collector. It is more beneficial for me”* (Sidomulyo Farmer, 2016).

The high benchmark that is set by the Gapoktan Sidomulyo, affects the rice collector existence in Sidomulyo Village. One of the farmers in Sidomulyo said that there was a rice transaction system called ‘*ijon*’ system in this village. The ‘*ijon*’ system means the rice collector will offer the transaction and set the price before the farmers harvest their produce. The rice collector sets the transaction based on the farm area, not the volume of rice. Generally the rice collector offers a low price to farmers. Currently, the ‘*ijon*’ practice does not exist in Sidomulyo village.

6.3.3. From the buyer’s perspective

From the buyer’s perspective, having the Gapoktan Sidomulyo as their partner/rice supplier is beneficial. Firstly, they can monitor the product offered by the Gapoktan Sidomulyo. They can trace back the product start from the rice farm to the processing plant. They are not only able to monitor the rice processing in the Gapoktan Sidomulyo’s rice processing plant, but can also monitor the potential rice availability on the farm. They can inspect the field and calculate the harvest time and the potential of rice production in a farm.

Our demand is the warranty of the produce. For example, if I buy rice from the rice collectors, I may get the rice from different areas. They don't care about the sources of the produce as they only want to finish the transaction and earn a profit. We don't accept that. That's why we prefer to work with Gapoktan Sidomulyo as we can monitor the product, starting from the rice farm (buyer, 2016).

Secondly, the Gapoktan Sidomulyo helps their buyer to maintain the rice supply to the buyer's market as the gapoktan can maintain their supply to the buyer. The Gapoktan Sidomulyo is owned by rice producers so that they can pool the produce from its members. Moreover, the Gapoktan Sidomulyo has arranged a partnership with other farmer groups (poktan/gapoktan). In addition, the buyers have more options for the partnership arrangement with the Gapoktan Sidomulyo, and can do contract farming and/or purchase agreements with them. This enables the Gapoktan Sidomulyo's buyer (from food manufacturer supplier/restaurant chain) to have the certainty of rice supply. The Gapoktan Sidomulyo cannot suddenly stop their supply to their buyer as they are attached to the contract.

Having a partner from the farmer's organisation is more promising than having a partner from the individual rice collector. The rice price that is offered by the gapoktan may be higher than the rice collector's price. However, the rice collector may fail to maintain the supply as they do not have the on-farm resources (Buyer, 2016).

Thirdly, having the Gapoktan Sidomulyo as a partner enables them to reduce the price volatility. This is because they are working with the Gapoktan Sidomulyo under agreements as explained previously. The buyer and the Gapoktan Sidomulyo set the price that is reasonable for the buyer and the farmers for a certain period of the contract. For example, they set the price under contract with x price. This price will be valid, for example, for six months. In the next contract, they can use the same price or renegotiate the price. They can offer a new price level adapted to the market situation. On the other hand, the Gapoktan Sidomulyo can also ask for a renegotiation as the production cost tends to increase. In addition, the buyer can get a price incentive when they buy the rice in a large quantity.

Fourthly, the buyer can get a good quality product. The Gapoktan Sidomulyo has implemented the standard operation procedures that mostly are consistent with the rule of good manufacturing practices. Moreover, the Gapoktan Sidomulyo already has the processing equipment that other groups do not have, such as the metal detector equipment. This helps them to detect and remove the metals that contaminate the product. Eventually, this helps them to improve the product quality.

6.3.4. From the government's perspective

It is indicated that the government, in particular, the regency government, also benefits from the Gapoktan Sidomulyo. It is identified by the government that the Gapoktan Sidomulyo is able to optimize the program that they offer. Therefore, the Gapoktan Sidomulyo has helped the government to realise their objectives, such as to improve smallholder farmers' market participation and eventually increase farmer households' income.

The Gapoktan Sidomulyo not only helps farmers in Sidomulyo Village to market their produce, but also helps the local economy. The Gapoktan Sidomulyo has presented employment opportunities for the local communities. Currently, they are hiring around 20 local people who work as administrative staff, the machinery operator and the rice sorter. The Gapoktan Sidomulyo also hires the local people who own trucks to deliver their product to Jakarta and Central Java. Moreover, they also facilitate the local community, for example, the female group, to do the productive activity as they can participate in the event that is held by the Gapoktan Sidomulyo. They can sell traditional foods or other products to the visitors from outside of Sidomulyo Village.

6.4. The key attributes of the Gapoktan Sidomulyo operation

The interviews with different participants have indicated factors that have contributed to the Gapoktan Sidomulyo to work collectively in order to capture the benefit from the rice value chain. They are motivation, financial capital, group characteristics, institutional arrangement, managing potential conflict, social punishment, external environment, and social capital.

6.4.1. Motivation

Having a gapoktan helped farmers to access the government subsidy. In this case, farmers in Sidomulyo Village agreed to form a gapoktan in order to access the RADP as this program can only be accessed by a group of farmers, not an individual farmer. As stated by one of the poktan leaders, *“the reason for the group establishment was to access government subsidies. Without this group, we could not obtain the subsidies. Meanwhile, the subsidies would help us a lot”* (Poktan Leader, 2016). A similar sentiment was also expressed by one of the farmers:

We established a farmer group because it was difficult to find the agricultural inputs, for example, fertilisers, seeds, and any other farmer’s needs. We were trying to solve these problems. So, why didn’t we form a group, so that government paid attention to us. This was because we would not be noticed if we work individually. That was our hope in establishing a group (Sidomulyo Farmer, 2016).

The motivation to access the government subsidy was also expressed from a different perspective. As indicated by the RPDU Manager, the Gapoktan Sidomulyo was established since the government changed the subsidised seeds and fertilisers distribution method. The government used to distribute the agriculture inputs through rural cooperatives. However, many rural cooperatives abused their authority to distribute the agriculture inputs. Recently, the government involved gapoktan as the distribution entry point and as the coordinator for inputs distribution.

In addition, the participants also expressed a different motivation for the group establishment, apart from accessing the government subsidies. A farmer said that the aim is to unite farmers in Sidomulyo so that they could grow rice collectively. This group will facilitate them to build coordination amongst farmers so that they could start growing their crop simultaneously. Subsequently, they can pool their yield and sell it together. As stated by one of the farmers, *“This (gapoktan) is to unite us, for example, we can decide what rice variety to be grown, then we can sell it here, in this gapoktan”* (Sidomulyo Farmer, 2016). Another reason was expressed by the gapoktan leader:

Gapoktan Sidomulyo was initially established to get the subsidy, but then we also wanted to facilitate and to build coordination amongst farmers. Our job is

to help farmers in Sidomulyo. This is the place to learn and build communication (amongst farmers) (Gapoktan Leader, 2016).

Meanwhile, one of the unit managers who was also involved in the process of group establishment stated:

The aim of group establishment was to unite the poktans in this village in order to raise our power. Everything should be discussed together (to make decisions). At the end, we could market our produce. A long time ago, I can say that we were suppressed by 'tengkulak' (rice collector). They bought our product at a low price. Our hope was this gapoktan would help us to sell our produce (at a higher price) (FSU Manager, 2016).

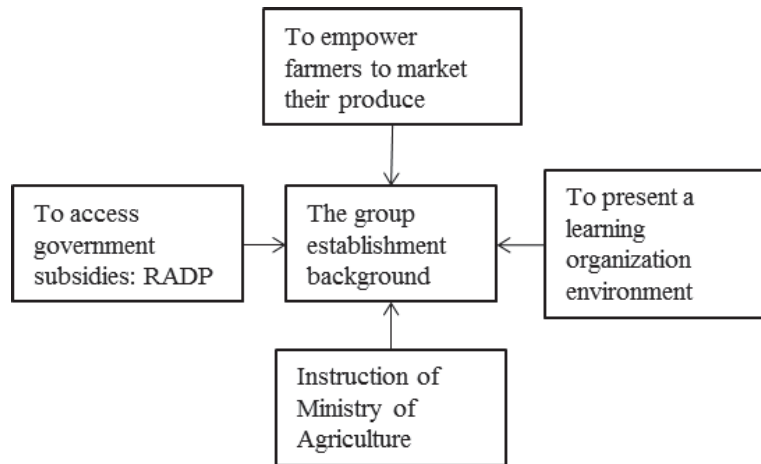


Figure 25. The establishment background

6.4.2. Financial capital

It has been shown that having financial support contributed to the group existence and development. In the early period of the group establishment, the Gapoktan Sidomulyo got support from its leadership team and the village government. For example, the rice tasting was funded by the RPDU Manager with his personal budget and sometimes the leadership team had to cover the unplanned activities with their personal budget. As stated by the Gapoktan Leader, “*we (the leadership team) are the 'ujung tombak' (the frontman) and the 'ujung tombok' (the first who have to cover the unexpected costs) of the group*” (Gapoktan Sidomulyo Leader, 2016)

Subsequently, they got support from the MoA through the RADP and LFDP. They used these programs to start their business. Apart from the external supports, Gapoktan Sidomulyo also collects the membership fees and monthly payments from its members. In addition, they obtain money from the services provided by the units under Gapoktan Sidomulyo. One of the farmers in Sidomulyo Village who helped the group to distribute seeds stated:

There is no free service even though we got the government subsidy. We have to pay the transportation and labour costs. We don't want to organise the service if we don't have the budget to operate. Therefore, farmers were asked to pay for the service (Sidomulyo Farmer, 2016).

However, the financial capital that was provided by the government and sourced from the internal members was not sufficient to fund the group activities as they were growing, and they needed to improve their production capacity. Therefore, the board and the RPDU Manager have agreed to apply for a loan from a bank. Gapoktan Sidomulyo was able to obtain the bank loan because the RPDU Manager had agreed to lend his land certificate as the collateral. He believed that the rice industry has the potential for development and the RPDU is able to pay the debt regularly. His prediction was correct, the debt was paid on time and, therefore, they were offered a new bigger loan from the bank.

6.4.3. Group characteristics

Age

Gapoktan Sidomulyo has been organised by different actors and has involved farmers of different ages. The combination of the young farmers and the senior farmers help them to improve. The young farmers represent the energetic character and easy to accept new knowledge. They are able to operate the new technology, such as computers and the internet. *“Most farmers do not really understand how to operate the communication technology and the internet. The young farmers help us to operate the new communication technology so that we can obtain more knowledge”* (RPDU Manager, 2016). Meanwhile, the senior farmers represent the more calm character. They are experienced farmers. They can supervise and give suggestions to the young farmers based on their experience. Moreover, from the

government perspective, the old farmers are very careful about what they are doing and very supportive to the young farmers.

Sometimes, the young farmers do too many experiments. This triggered the old farmers to react. As they have a lot of experience, they will say 'wait wait, let's finish this one first' or 'we do not need that'. We then just realised that it is not good if this group consists of the young farmers only. No one supervises us. Meanwhile, if this group is operated by the old farmers only, they will be too static. Everyone will just say 'yes', instead of criticising or expressing opinions. They may only follow the government instructions. This will not present any innovation (RPDU Manager, 2016).

In addition, sometimes the young farmers and/or organisers are too talkative. They sometimes just attend the meeting and argue with each other. In that regard, the senior members will remind them to stop and to start the action.

Internal composition

Gapoktan Sidomulyo is organised by people from different backgrounds. The different professional backgrounds have presented benefits to the gapoktan as it promotes different skills which are important for the group's business development. *"At least there is a young farmer in the management. Subsequently, we also need the government officer involvement and the person who already has a rice miller. This composition helps us to run the organisation"* (RPDU Manager, 2016).

The Agriculture Extension Officer shared his experience in supervising a group of farmers that were organised by full-time farmers only. He stated that the group that is organised by purely farmers, tends not to develop. This is because, commonly, they have neither the entrepreneurial skills, nor the administrative skills. In addition, they did not have enough time to foster the organisation as they were focused on their farms. They might not attend and participate when they were invited to a meeting. The Agriculture Extension Officer added that it is a real problem for a group to improve when the organisers do not have much time for the group.

Currently, the Gapoktan Sidomulyo is led by a part-time farmer who is also an independent agriculture extension. His background allows him to allocate most of his time to foster the group. Meanwhile, the other leadership team members are part-

time farmers who are retired from their job and who own another business. They are teacher retirement, bank officer retirement, and civil servant retirement. In addition, the RPDU that links farmers to market is led by a village government officer who also has the agribusiness development skills. He used to work for a trading company from Japan and he was sent to Japan to attend a training program on agribusiness development. The varied leadership team's background enable this group to share the organiser's work based on their expertise. *"I tend to do an inside job (stay in the office and manage the rice processing plant) while the leader tends to do the field work. We just harmonize our function"* (RPDU Manager, 2016).

Members' character

The interview revealed that most of the group's members were very easy to be directed and organised. They respected the other farmers and the group organiser. Moreover, they wanted to listen when other people, in particular, the group organiser, give feedback or make suggestions. As stated by one of the farmers, *"I would follow the result of the discussion, such as when the consensus asked farmers to grow a specific variety of rice"* (Sidomulyo Farmer, 2016).

6.4.4. Leadership

The interview revealed that the leadership capacity was an essential factor that has contributed to the group development, so that they could benefit from the market. There were some leadership attributes that were mentioned during the interview, namely: good interpersonal skills, trustworthiness, being a good role model, and having a strong motivation to foster the group.

Good interpersonal skill

The interview revealed that the gapoktan leader has a good interpersonal approach. He is able to understand and handle the farmers with different characters and organise them into a group. Subsequently, the leader is able to build a good relationship with the government officer. As stated by one poktan leader, *"Our leader is a friendly person. He could establish a good relationship with the government officer in Yogyakarta"* (Poktan Leader, 2016). A similar expression was also stated by a Sidomulyo farmer. *"He is not a government officer. However, he does not feel*

awkward when he came to the government office. He acts just like part of them” (Sidomulyo Farmer, 2016).

Trustworthiness

Another trait that was important to the group development is trustworthiness. The interview exposed that a group that is led by an untrustworthy leader would not sustain and improve. One unit manager stated, *“Trustworthiness is the key characteristic (that should be possessed by a leader). A leader should not abuse his authority and use the group’s budget for his personal interest. For example to feather one’s nest”* (FSU Manager, 2016).

Good role model

Moreover, the regency officer revealed that the gapoktan’s leader is a good role model for their members. He is not the type of leader who works behind the desk. The leader does not only give commands to the board member and the unit managers, but is also actively involved in the group’s operation.

Motivation

Furthermore, the interview showed that the Gapoktan Sidomulyo’s leader has got support from the other leadership team members. It was not a one-man show by the leader-only, or by the unit manager. The leadership team members were the people who are strongly motivated. They are tough and patient in facing the group dynamics. Their spirit led to their consistency in fostering the group. According to the gapoktan leader, many farmer groups stopped operating after years because the organisers were frustrated and less motivated. This situation was not occurred in Gapoktan Sidomulyo. *“The other management in other organisations may be less motivated, so that their work was just to fulfil their job description. Thank God, we are still existing and committed to our group”* (Gapoktan Leader, 2016). The actors from the external group also expressed a similar view about the organiser. The regency officer, who had been involved in many farmer group development programs stated that the spirit of the group and the organiser had contributed to the group development.

They (the group) have a spirit and they are led by people who have motivation. If an organisation is led by a leader who has no strong motivation and the leader is not supported by the management, they would not be developed even though their member has a strong intention (to improve) (ROADFSD Officer, 2016).

6.4.5. Institutional arrangements

The leadership team's transparency

The Gapoktan Sidomulyo has been implementing the open management style, which means the leadership team will not conceal information about the group. Farmers in Sidomulyo can ask the group organiser to clarify issues or just to obtain information about the group progress. They can come to the office, or they can raise questions in the monthly meeting. If the group organiser cannot answer the question as it is not within their expertise, or part of their unit, they will help the farmer who raised the question to meet the person that is more capable of answering the question. This allows the group to impede any potential conflict.

When we are able to implement the open management style, we can make everyone stop talking or express something that may trigger conflict. They will try to get information first, before they speak outside. In many other groups, the members expressed their opinions before they clarify the issue. This leads to an uncontrolled situation and this can be bigger and bigger (RPDU Manager, 2016).

Communication flow

The interview and the observation revealed that the Gapoktan Sidomulyo had built up good communication between the leadership team and the poktan's representatives, and they could share information during the monthly meeting. The group organiser will invite the poktan representatives to attend the monthly meeting and on the other hand, the poktan will also invite the gapoktan representatives to attend their regular meeting. This facilitates the gapoktan organiser to share information with the poktan and its farmers.

For the farmers who cannot attend the meeting, they can ask the other farmers who attended the meeting. They also can ask the gapoktan organiser or poktan organiser when they meet them on the farm. *“If I could not attend the group meeting, I will ask about the results of the meeting to the person who went there”* (Sidomulyo farmer, 2016). Other farmers stated, *“The group organiser also has a farm, despite it being a small farm. They still go to the farm to cultivate their land. They can share information on the farm”* (Sidomulyo farmer, 2016).

In addition, the communication technology has supported the gapoktan organiser and poktan organiser to share information. From the gapoktan organiser’s side, this facilitates them to immediately capture some issues that may present disadvantages to farmers and the group.

“Nowadays, both the poktan organiser and gapoktan organiser have a mobile phone. Problems can be identified and informed to others immediately. We do not need to wait for several days to know the issues. Thereafter, if they need to discuss it at the gapoktan level, we will facilitate a meeting” (RPDU Manager, 2016).

Group structure

It was indicated that the organisation structure of Gapoktan Sidomulyo helped the organiser to manage conflict between themselves and the farmers. They initiated a supervision body in their organisation structure, which had the authority to monitor the gapoktan organiser in order to ensure that gapoktan members (from each poktan) were treated equally. They facilitate poktan or farmers, or the local society to explain, or to address issues related to the Gapoktan Sidomulyo. When a poktan felt that they were being treated unfairly, they could report to the supervision body and ask for clarification. The supervisor would then help them to meet the organiser to clarify the issue. Moreover, they would involve the advisory board when they could not manage the problem.

Group monitoring

The operation of Gapoktan Sidomulyo and the group’s progress were not only monitored by the supervision body, but also by the Gapoktan Sidomulyo’s farmers

and the external actors, such as the Agriculture Extension Officer and the regency officer. The monitoring from the different actors influenced the organiser's performance in organising Gapoktan Sidomulyo. For example, the group monitoring by the farmers had prevented the organiser from cheating farmers by giving them lower margins.

If our buyer offered a higher price to us, we will raise our price to farmers. They would know if we gave them a lower price while the selling price is high. It is common for them to ask the purchasing price and the selling price to market. We then should explain the rationale behind the price (RPDU Manager, 2016).

In addition, the ROADFSO has been conducting a monitoring program called stock progress report. This program is aimed to control the expenditure of the incentive given by the government. By the end of the year, the Gapoktan Sidomulyo is required to provide the balance sheet to the government. They have to show their bank account to the government and reported that they have spent the money in the right way. If they failed to show that, the government have the authority to block their bank account, so that they could not withdraw money from the account.

Like it or not, these gapoktans have to keep their plan on track. So far, we did not find any major issues on the program implementation (in gapoktan level). There were some delayed payment cases because the gapoktan had to wait for the third party (the buyer) to pay for their product. However, that was just a matter of time (ROADFSO Officer, 2016).

Sanctions

Similar to any other farmer organisations, the Gapoktan Sidomulyo also faced some challenges regarding the farmers who disobey the group agreement. In these cases, the leadership team would not press these farmers and punish them. However, the other members would do that (peer pressure). There were gradual steps in managing these kinds of farmers. Firstly, the senior members would approach them and talk to them politely. However, sometimes the personal approach between members did not work effectively. In that regard, the other farmers then estranged the disobedient farmers. For example, they did not involve the disobedient farmers in the fertiliser or

seed distribution. They also ignored these farmers when the group wanted to distribute the water supply. Eventually, these farmers would reflect on the other farmers' attitude. *"The disobedient farmers can feel that they were ignored. They will feel that we avoided talking to them. They won't be involved in the seeds, fertilisers, and water distribution"* (Sidomulyo Farmers, 2016).

6.4.6. The external environment

The non-financial and financial support

The Gapoktan Sidomulyo received support from different external agents. Firstly, they got support from the agriculture extension officer. He links the gapoktan to the government's programs and facilitates their access. He also supports them in managing the government program. His experiences, which have been gained from elsewhere, helped him in encouraging and supporting farmers in Sidomulyo Village to implement the government program.

I personally had learned about the government's program implementation from different places. It is not only in Sleman Regency, but also in Kulon Progo Regency. I learnt and compared how farmers in that regency implement the PUAP. I take their experiences into consideration in implementing PUAP in Sidomulyo (Agriculture Extension Officer, 2016).

The agriculture extension officer has been working with the Gapoktan Sidomulyo for years. He knows the field situation, knows the people's character in the village and the culture. He has a strong connection with the Gapoktan Sidomulyo's organiser, and he feels part of the village. As a result, he works as though he was one of the internal actors.

Secondly, they received support from the village government. The village government facilitated the Gapoktan Sidomulyo to plan an action and to create group bonding. Moreover, the village government leader allowed them to use his land to be cultivated so that the gapoktan could have an activity to earn money. In the early period, the group's operation was supported by the board members and the village government. *"In the first two years, our meetings were facilitated by the village government and some of them were funded personally by the board members"* (Gapoktan Leader, 2016).

Thirdly, they were supported by the MoA, which provides the initial capital so that they can fund the group and the business operation. The MoA also facilitate them with post-harvest and processing technology. The programs provided by the MoA were delivered with support by the Provincial Office of Food Security Department (POFSD), Provincial Office of Agriculture Department (POAD), and Regency Office of Agriculture Department (ROAD).

In addition, the MoA was also supported by the program provided by the local agriculture office. For example, the local office provided a soft loan program for the farmers' group. Through this scheme, the smallholder farmers were able to get credit. In return, they had to pay the principal and the contribution fee, which was four percent per annum. The contribution fee is not only aimed for the local office, but also for the group development. One fourth of the contribution fees will go to the farmer group, while the other will go to the provincial government.

The local government also encourages gapoktans in Yogyakarta Province to establish an association of gapoktan. This association facilitates the gapoktans to share knowledge. It also provides support for its members in case they face financial problems. When a gapoktan faces a problem in paying a debt, the association will collectively bail them out of the debt and, in return, they have to pay the association. Moreover, the local offices deliver the human capacity development programme that is aimed at the gapoktan member. They have organised training on group management development and marketing management.

The external agents' character

It was indicated from the field observation and the interviews with different participants, that the external agents had a good relationship with the Gapoktan Sidomulyo. They were able to build communication and treat farmers as their partner, instead of the object of a government program. The regency officer, for example, used the personal approach in building the relationship with the gapoktan organiser. This allowed them to know more about the farmers within a group and the potential of a group. On the other hand, the personal approach helped the government officer to build the farmers' commitment.

Another example was from the agriculture extension officer. The interview revealed that the connection between the agriculture extension officer and farmers is more than a work relationship. The officer treated the Gapoktan Sidomulyo as though he was part of the group, vice versa.

However, despite both of the external agents having a good relationship, and having built good communication with farmers, they were very selective in delivering the government program. They would not select a group of farmers that was not ready to receive the program. In the agriculture extension case, he was quite suspicious of a group of farmers that accepted his offer (the government program) immediately.

6.5. Chapter summary

Gapoktan Sidomulyo is a group that was initiated by an external agent from government office. This group was established in order to access government supports. The aim was to help smallholder farmers to improve their rice farm and address issues related to rice agribusiness. The group establishment had passed through different stages, started from receiving information about the programs and responding it, disseminating this information to farmers, creating discussion forum, and forming an organisation.

There were important activities related to this collective work. The first was regular meeting. This was important as this enabled the group organisers to disseminate group's progress report. This also promoted information exchange between farmers and group organisers. This enabled group organisers to involve farmers in decision making and to manage the potential of conflict. The second was the group's operation in processing rice. This operation helped smallholder farmers to add value to their produce. This collective group obtained raw material, which can be unhusked rice and milled rice, from their members and from farmers external to the group. They did both contract farming and spot-market purchasing for the procurement method. These raw materials then were processed in small-scale rice processing plant that implementing modern technology, before they sold it to different markets.

There were benefits offered from being involved within the group. Firstly, this enabled the farmers to share and exchange information. Secondly, this enabled them to improve their bargaining power. Working collectively helped them to set price that can be used

as price bench mark. For buyers, having business relationship with a group of farmers helped them to ensure the quality of product with predictable supply.

There are some key attributes for the group operation, such as having the motivation to work as a group, having the financial capacity, having a different characteristic of people within the group, having good leadership, having institutional arrangement that promotes transparency and information exchange, as well as having external supports.

Chapter 7. Discussion

7.1. Introduction

This thesis examines how smallholder rice farmers work collectively and how they gain benefit from doing so, so that they can capture value from the emerging rice value chain in Indonesia. In that regard, this chapter draws information from the previous chapters, compares and contrasts the results of the study to other studies reviewed in Chapter 3, while answering the research question. This begins with a description of the characteristics of the case. Subsequently, it discusses how working collectively presents value for farmers. Thereafter, it discusses the influencing factors that enable farmers to work collectively as a group, before concluding with a summary. The last two sections before the summary are also presented in hierarchical diagrams in the appendices.

7.2. Characteristics of the case

The purpose of this section is to highlight the features of the case and present its context. The case is Gapoktan Sidomulyo, a collective of smallholder rice farmer groups in a developing country. This group illustrates what Meinzen-Dick et al. (2004) identify as institutionalised collective action as there were rules applied within the group. This can be interpreted as what scholars refer to as a farmer organisation (Fischer & Qaim, 2012; Hellin et al., 2009; Markelova et al., 2009). The group is quite similar to what Bourgeois et al. (2003) defined as a farmer organisation in the Indonesia context. It is an active farmers' group, which is identified by the existence of regular meetings and various activities such as loan services and collective marketing services. Considering the Davies et al. (2004) group typology, this group can be classified as a mixed type, which is in between top-down collective action type and bottom-up collective action type. The group was initiated by an external agent (in this case the agriculture extension officer). However, the group's development operation is driven by the farmers themselves.

Regarding the character of the group's members, the rice farmers in Sidomulyo Village were mostly part-time small-subsistence farmers. In general, they hold less than 0.5 hectares of land and they use their produce for household consumption. In order to

afford their other primary needs, they did another job in the city. These farmers are usually in their middle-age or senior citizens (more than 50 years old).

In this village, rice has been grown for many generations. Similar to other areas in Java Island, this village also has a suitable temperature, humidity, and precipitation to grow rice. Moreover, farmers in Sidomulyo Village can grow rice throughout the year, as they have the access to irrigation from the Mataram Canal and the Van der Wijk Canal. However, some areas may not obtain adequate volumes of water as these areas are farther from the water source than others.

Regarding market access, Gapoktan Sidomulyo is not remote from the market. This group is situated close to the Godean District traditional market and also to the urban market, either in Yogyakarta City, or in the Sleman Regency. Furthermore, despite their rice-processing plant being closer to the rice farms in the village than to the main road, they did not face serious problems in distributing their product. This is because the village road leading to the main road and market is already paved and could be accessed by trucks. In this case, good infrastructures supported the forming and the development of a farmer group as these can reduce the costs and help them link to other producers outside the village.

Another characteristic that may influence farmers' collective action, in this case, is the culture. This case is situated in the Special Region of Yogyakarta, Indonesia. In this region, particularly in the rural area, people are very engaged to their community. There is a norm, for instance, to participate in community works. Therefore, this influences the quality of relationship and interaction amongst the local people in Sidomulyo Village.

7.3. Improving value chain through collective action

This case is an example of how small-scale rice farmers through collective action improve their value chain and gaining benefit from the rice value chain. This study shows that the farmers of staple commodities can capture more value from the rice chain through what Trienekens (2011) refers to as market upgrading. These farmers obtained this value by moving away from the low income market to the middle-high income market, as suggested by Trienekens (2011), and acting collectively enabled them to upgrade their market, more than if they acted individually. This is similar to

other cases, such as the potato farmers' case in Uganda (Kaganzi et al., 2009) and in Meso-America (Devaux et al., 2009).

As stated by Reardon et al. (2014), rice value chain transformation has presented more market options for the producers with more efficient distribution as the market chain tends to be shortened. This also been identified in this study. The opportunity to enter the more lucrative markets emerged as the rice market in Indonesia had been transformed. The numbers of supermarkets and convenience stores were increasing as well as the middle-income population. Similarly, the agrifood industries, such as restaurant chains and food manufacturers, were growing. This was not only in Yogyakarta, but also in other provinces on Java Island. In addition, this transformation was supported with good infrastructure, thus these producers did not have problems in rice distribution.

This study also shows that entering the national market was not the only option to gain value from the rice value chain. It demonstrates that the local market could also present value to the producers, as it comprised a different market segmentation (e.g. middle-high income consumers). Instead, the local market could present more value compared to the national market. For instance, it could present a higher profit margin as they were able to sell their produce directly to households. They did not need to share the profit with other intermediaries. Subsequently, they could earn money immediately as the payment was made right after the consumer gets the product. Moreover, the local market could be more efficient as the transportation cost was lower than the non-local market. This is dissimilar to what has been shown by scholars that the local market offers lower value (Markelova et al., 2009; Trienekens, 2011) and is less attractive than the national market (Devaux et al., 2009; Kaganzi et al., 2009).

However, entering new and different emerging markets was not easy, as the producers had to meet the markets' requirements. For instance, the markets demanded better quality products with sustainable supply and less volatile (predictable) prices. This is consistent with observations of other scholars, see Trienekens (2011), Lee et al. (2012), and Reardon et al. (2014). Therefore, this case also suggests that rice farmers were more likely to gain benefit from markets through collective action if they also did production upgrading, as identified by Trienekens (2011). This supports Hellin et al. (2009), who argued that staple crop farmers also need to look for new opportunities to add value to,

or to differentiate their products, so that they can gain the benefits through collective action.

The benefits gained from working collectively in this research include: improving competitive advantage, improving human capability, improving bargaining power, and shortening the rice value chain. Collective action enabled Sidomulyo's farmers to pool their produce and sell it collectively. This improved their ability to sustain their supply to market, although eventually they had to source raw materials from other groups around Yogyakarta Province and Central Java Province as their markets were beginning to expand. This also enabled the farmers to improve product quality. The farmer group coordinated farmers to implement the farming system that improves the rice quality. They also monitored the source of the inputs, implement the standard that is accepted by food industry, and utilise modern technology. Subsequently, collective action enabled farmers to present collective management. Therefore, they could combine their skills and complement each other's. This helped them to promote their product, build networks with other actors, and improve their business. Furthermore, collective action enabled farmers to improve their bargaining power, as this group gives higher prices than the market price. Moreover, this action helped these farmers to reduce the role of intermediaries.

These benefits have also been identified from collective action in other developing countries. For instance, in Uganda, collective action supports farmers to meet basic market requirements for minimum quantities, quality, and frequency of supply (Kaganzi et al., 2009). In Thailand, working collectively helps farmers to improve their capability to produce hygienic food products (Kruijssen et al., 2009). In Ghana, this action helps farmers to raise bargaining power to set the price (Lyon, 2003), while in India, this helps farmers to reduce the number of intermediaries (Trebbin & Hassler, 2012).

However, this case also revealed that this action would work only for some farmers. They were farmers who already had sufficient production capacity. The very smallholder farmers tended not to actively participate in the group as they cannot produce sufficient surplus, thus they cannot gain significant incentives from the group. This is similar to Zheng et al. (2012).

From the group's perspective, collective action was not necessarily reducing transaction costs. This is inconsistent to what has argued by Markelova et al. (2009) and found in the Andes (Devaux et al., 2009). It was because the group had to deal with a lot of small farmers. This means there were more costs for coordination. This supports the claim of Trebbin and Hassler (2012) that the character of small-scale farmers has implications on transaction costs.

Moreover, collective action did not always improve sufficient funds from members or access to credit. Collective action could help farmers to raise money, but this might not always significantly improve the group's production capacity. This is dissimilar to the potato farmers' case in Uganda (Kaganzi et al., 2009), where collective action enabled them to pool financial resources and use that for the group operations. In the Gapoktan Sidomulyo case, a significant amount of money was still sourced from the bank. To access credit, they still depended on the individual's certificate of land ownership, not the group's certificate of their assets. In that regard, this also differs with Meinzen-Dick and Di Gregorio (2004), who stated that collective action helps farmers to obtain credit as they can use the group's assets as collateral.

7.4. The influencing factors for the group's development

The results of this study shows factors that had influenced the group's development, they are: the willingness to work collectively (motivation), trust building and a shared vision (social capital), building a leadership team that has organisational management and business capability (leadership capability), maintaining the group cohesion, maintaining the participation of a leadership team and active farmers in fostering the group (participation), and a supportive environment. Similarly, in the literature, those factors identified were social capital (Kaganzi et al., 2009; Pretty & Ward, 2001; Vanni, 2013), leadership capability (Garnevskaja et al., 2011; Kruijssen et al., 2009; Markelova et al., 2009; Trebbin & Hassler, 2012), participation (Faure, 2004), and supportive environment (Kaganzi et al., 2009; Trebbin & Hassler, 2012). However, there are also some differences that can be identified from this case and these are discussed further in each section.

7.4.1. Willingness to work collectively

This case shows that farmers in Sidomulyo Village were willing to form a group and work collectively. It shows that the motivation to work collectively was triggered by the potential to get incentives from government. This is similar to other cases, such as in the maize farmers' case in Mexico (Hellin et al., 2009) and many cases in Indonesia (Syahyuti, 2010). Moreover, this case supports Hellin et al. (2009) and Fischer and Qaim (2012), who argue that collective action is often catalysed by external agents.

However, this case also highlights the importance of the process in encouraging farmers to act collectively. It was important for the external agents to promote what Koelen and Das (2002) refer to as a social learning process in encouraging them to work collectively. It was not merely encouraging them with incentives. It was essential to prompt farmers to discuss the current situation and what could they do with the external support, so that they knew what the reasons are to work collectively and what to do next. Thus, they had the enthusiasm to undertake activities as a group to respond to barriers (McCarthy, 2004). Therefore, the motivation was not only to access the government programs, but also to address the issues faced by them. The government programs were a tool to achieve their objective. They were not the main objective. In that regard, this case is different from what has been highlighted in Mexico (Hellin et al., 2009) and Indonesia (Syahyuti, 2010), where farmers tend to form a group merely to access the government subsidy. Those farmers did not follow up the government support to improve their market participation. As a result, their groups could not be improved.

7.4.2. Trust building and shared vision

This case also reveals that trust building and a shared vision between members in the initial stage of the group establishment was important for collective action. This is quite similar to the Costa Rica case (Faure, 2004) and the Andes case (Devaux et al., 2009). In Costa Rica, the collective action establishment was started by strengthening the relationship between farmer organisations, while in the Andes, meetings were held in order to build trust among participants.

The case in this research is similar to the aforementioned cases, where people external to the group contributed to build social capital. However, what was significant in this study was that the people external to the group were embedded in the community, had good relationships with and were respected by the community. Their words tended to be followed by the community and it helped them to deliver the messages and build the trust and commitment with the farmers' communities. This kind of relationship between the external actors and farmers has not been highlighted by other cases. For instance, in Costa Rica studies by Faure (2004) and Andes by Devaux et al. (2009), the external agents involved were NGOs and these people may not be embedded in the local community. Their relationship with the community may only exist during the program.

In this case, the importance of trust, as part of social capital, for collective action principally is consistent with what has been mentioned by Faure (2004), Kruijsen et al. (2009), and Vanni (2013). According to Kruijsen et al. (2009), social capital may increase reciprocity. People feel confident to participate as they know that others will do the same thing and this, according to Pretty (2003), contributes to the development of commitment between people. In the case of this research, the trust had helped the group to get a shared vision, which led to farmers' commitment to participate within the group.

7.4.3. Maintain the cohesion of the group

Group cohesion was also highlighted as an important factor in the Gapoktan Sidomulyo development. This supports Kaganzi et al. (2009), who found that strong internal cohesion, combined with specialised management, may help farmers in Uganda to improve group market performance. The finding is also consistent with what has been argued by Stockbridge et al. (2003), that internal cohesion is a characteristic that determines group viability.

This case shows that the internal cohesion could be promoted through avoidance/reduction of problems that lead to potential conflict, maintain the members' awareness of the group's current situation, and good management. Conflict management was important as the internal conflict might make people feel reluctant to engage in the group. Meanwhile, maintaining the members to be

informed of the group situation was also essential, as it increased their willingness to stay involved. This could be promoted through maintaining the communication between leadership team-farmers and farmers-farmers. Subsequently, the good group management contributed to better harmony in the collaboration between the leadership team and the active members. This had been presented through the balance of power-sharing between the leadership team and the active members. On the one hand, the leadership team had the ability to organise the group and, on the other hand, the group's members were able to monitor the leadership team. This had prevented the abuse of power and cheating by the leadership team. Nevertheless, this would be more effective if the leadership team promotes information transparency. The government intervention in the group monitoring also encouraged the leadership team to maintain the group's accountability. This differs to what was found in the literature. Internal cohesion may be promoted by the size of the group (i.e. small) (Agrawal, 2001; Fischer & Qaim, 2014; Kaganzi et al., 2009), the same group activity (i.e. go to the same church) (Kaganzi et al., 2009), and kinship (Stockbridge et al., 2003). This research highlights how a large group from a heterogeneous community (e.g. different religion, Islam and Christian) could achieve group cohesion.

7.4.4. Build a capable leadership team

This case highlights the value of a leadership team with capabilities across a range of relevant areas for collective action. A capable leadership team had enabled the group capturing value from the rice value chain. This study revealed that the leadership team needs to have strong motivation, entrepreneurship characteristics, social entrepreneurship characteristics, administration skills, marketing skills, good interpersonal skills, as well as trustworthiness and to be accepted by the farmers' community.

The combinations of these characteristics were important for collective action as these enabled the leadership team to build social capital, obtain support from the group members, and improve business performance. For instance, interpersonal skills were important as they enable the leader to build networks with other actors, such as the government and the buyers. It also enabled the leader to manage people within the group with different characteristics. Meanwhile, the business skills enabled the

group to implement different marketing activities (e.g. food tasting, on air marketing, and e-marketing), which helped them to improve their market participation.

This study is consistent with the literature in which the importance of leadership capability to manage organisation and business for group development was identified (Garnevska et al., 2011; Kaganzi et al., 2009; Lyon, 2003; Mutmaimah & Sumardjo, 2014; Trebbin & Hassler, 2012). In China the group performance was determined by the leader's ability to manage the business and to build communication with other actors, with an enthusiasm for innovation and being open-minded (Garnevska et al., 2011). In Uganda, a leader is argued to need the entrepreneurial spirit and the trust from the members as these influence making rapid decisions (Kaganzi et al., 2009). The leader also need to possess social entrepreneurship characteristics (e.g. willingness to spend more time for the group) (Lyon, 2003) as well as be accepted by the community and the market environment (Trebbin & Hassler, 2012).

However, unlike the other studies, this research revealed that the range of capabilities could also be obtained from collective leadership. The important leadership capabilities for group development could also be presented by a number of leaders, instead of one individual, as shown in other cases such as in China (Garnevska et al., 2011). The people in this group realised that an individual may not possess all of the essential characteristics aforementioned. Therefore, they combined the members of the leadership team from different backgrounds of profession and ages, as they possessed different skills and characteristics. Thus, they could complement each other.

Moreover, the collective leadership presented benefits for the group as the group was not controlled by an individual. This may lead to better group sustainability as the group was not dependent on one leader. This is different from what had been identified in the China case (Garnevska et al., 2011), which highlighted that the leader handled different roles within the group.

7.4.5. Maintain the leadership team and the active farmers to participate within the group

Participation was the other essential factor for group development that had been highlighted in this study. In this context, participation means the involvement of

active members within the group's operation. As stated by Ostrom (2004), that collective action will work if more than one individual contributes to an effort to realise an objective. Principally, this is similar to other studies, such as in Costa Rica (Faure, 2004) and in Kenya (Fischer & Qaim, 2014). In Costa Rica, lack of participation was one of the factors that led to failure in sustaining the farmer organisation. While in Kenya, low participation in collective activities may have reduced the ability of the group to provide useful services to its members.

The factors that enabled the gapoktan to maintain the active members' participation rate include: facilitating members to speak their views and give suggestions openly and be involved in decision-making, involving members in enforcing rules/agreements, encouraging members to attend the regular meeting, and maintaining the leadership team stability in fostering the group. The first two factors had also been identified in other studies, in China (Zheng et al., 2012) and Indonesia (Sandyatma & Hariadi, 2012).

The inclusion of farmers' voice may raise farmers' sense of belonging to the group. They would feel that they have contributed to the group and this may increase their willingness to participate. This is consistent with what had been identified in China (Zheng et al., 2012) and Indonesia (Sandyatma & Hariadi, 2012). From a different perspective, the China case shows that autocratic management of the group reduced the motivation of farmers to actively participate within the cooperative. In Indonesia, farmers did not feel appreciated as their voices were not taken into account by the leader, thus they felt reluctant to participate within a group.

This case shows that the rules/law enforcement also influenced the farmers to participate within the group. The rule was the tie to keep the members engaged within the group. When farmers broke the rule and there was no enforcement, the group tended to be more likely to lose cohesion. This could also reduce the others' commitment. This is similar to what has been found by Sandyatma and Hariadi (2012). However, this case also emphasized the importance of members' involvement in the rules' enforcement. This case suggests that rules enforcement were more effective if it was done by another member (farmer), not the leadership team. They could do that in a different way. The fact that they had close relationship

with the other members had helped them to do personal soft approach. They could also do peer pressure, by estranging the disobedient farmers.

This study also revealed the importance of encouraging farmers to attend regular meetings, as these meetings were essential for the group operation. Regular meetings supported the leadership team and the active members to maintain social capital, manage conflict, and incorporate farmers' voices. This could be promoted through organising attractive activities that are accepted by the community. This could also be promoted by issuing a rule that the meeting has to be conducted in each member's house in rotation. This not only compelled farmers to participate, but also promoted reciprocal connection between members, as they had the same opportunity to host the meeting. People would feel bad if they did not attend the meeting in someone's house and vice versa.

Moreover, this study revealed the importance of maintaining the participation of the member of leadership team in fostering the group as they have a crucial role for the group development. This has not been identified in the other studies, particularly when the group is driven by a chain champion. This could be promoted through two actions. Firstly, the group have to ensure that the member of leadership team had the character that was defined as social entrepreneur characteristics, which could be identified from their willingness to spend their time (Lyon, 2003; Mutmaimah & Sumardjo, 2014) or even their money for the group. This could be obtained through the appropriate selection process. Firstly, these people could be invited, instead of appointing them. People who have the willingness to be part of the team, with all of the responsibilities, will accept the invitation. Secondly, it was also important to acknowledge their effort in fostering the group. This could be presented by giving them a percentage of the group's profit. In this case, the value might not be significant. Nevertheless, according to one of the leadership team members, it made them feel appreciated.

7.4.6. External support

This study shows that a supportive external environment was important for farmers' collective action and for improving their value chain. The involvement of external agents (in this case government) had triggered farmers to work collectively. Their

support was needed to build the social capital, in particular, related to the coordination between poktans. This was because it required money, and farmers are usually reluctant to spend their money on something, which, from their perspective, may not present a positive outcome. Moreover, external support was still needed to improve the group's capability and capacity, to fulfil market demand, which may be difficult to achieve by smallholders alone. This case principally supports what has been identified by other scholars, such as Faure (2004), Hellin et al. (2009), Fischer and Qaim (2012), and Trebbin and Hassler (2012), who had identified the importance of external agents in initiating and developing collective action.

Subsequently, this study highlights that the government was the more appropriate facilitator of smallholder farmers' collective action than other organisations, such as private companies and NGOs. Unlike the private companies, they did not face conflict of interest in terms of profit sharing, instead they are promoting 'pro-poor' growth development. They have the authority to set the supportive policy environment and they have the financial power that may not be compared to other external agents. They also have sufficient human resources. They have the supporting staff, such as an agriculture extension officer and a quality development facilitator. These attributes may not appear within the NGOs or private sectors, as has been identified in Indonesia, see Hermantyo (2007) and in other developing countries, see Hellin et al. (2009) and Markelova et al. (2009).

However, this study also highlights two important points regarding the involvement of government. First, it was important for the regency government to build good connections with the leaders of the group. This helped them to gain the group's commitment to build together the agriculture sector, as part of the government's objectives. Second, it was important for the government to encourage farmers to initiate actions, instead of driving them. This could reduce the group's dependence on government. In brief, it was important to present collaborative interactions between the government and farmers, rather than using the top-down method only, otherwise, their support might not present a positive influence on the group development and ongoing performance. This is basically consistent with what has been identified by both Thorp et al. (2005) and Markelova et al. (2009). These cases

highlighted the domination of the external agents (NGOs) on the farmers' collective action tended to increase farmers' dependency.

7.5. Chapter summary

This chapter compares and contrasts the findings of this study in relation to the literature review. This study is an illustration of how smallholder farmers work collectively and gaining benefit by doing so, thus they can capture value from the rice value chain. This case shows that collective action helped farmers to build competitive advantage, improve human capability and bargaining power, and shorten the rice value chain. However, this study also highlighted that only some farmers were able to gain benefit through this action. They were farmers who could produce enough and consistent rice volume. From the group perspective, this study revealed that collective action was not always able to reduce coordination cost, instead, as the group consists of smallholder farmers, the coordination cost tended to high.

This study revealed factors that had influenced farmers to sustain and develop their group collectively. The first is the farmers' motivation to address their issues. In a culture where the government had a strong role and had encouraged collective action, this study has shown the fact that encouraging farmers with incentives was not enough. The external agents also needed to encourage farmers to initiate the actions. The second is the importance of trust building. It was not only between farmers, but also between farmers and the external agents. The way the external agents engaged with the group was important to build trust between them. This helped these agents to deliver shared vision and gain commitment from farmers. The third is the importance of leadership. It was critical for a group of farmers to have good leadership, but importantly, this study highlighted that the leadership does not mean an individual. A good leadership could also be provided by a team of people. Collective leadership could be a result from the fact that it was hard to find the required capabilities from one individual from smallholder farmers. However, collective leadership was a positive thing, as it could reduce the domination of an individual in a collective action. The fourth is the importance of maintaining the group cohesion and the study reveals different factors from what had been found by other studies that may lead to group cohesion. They are conflict management, maintaining the members' awareness on the group's current situation, and presenting good management. The fifth, this study revealed that

members' participation rate and the leadership team's participation rate within the group needed to be maintained. The members' participation rate could be maintained through members' voice inclusion, included in decision-making; involving members to enforce the rules, and attracting members to attend the meetings. Meanwhile, leadership team participation rate could be maintained through conducting the right selection process and acknowledging their effort to foster the group. Lastly, this study also showed the importance of external support for the group initiation and development so that they could gain benefit through it, as the nature of the smallholder rice farmers might curb them to do that alone.

Chapter 8. Conclusions and recommendations

8.1. Introduction

Collective action has widely accepted as one of strategies to improve farmers' capability to gain benefit from the agrifood value chain. The same approach has been conducted by the Indonesian Government in developing rice agribusiness sector. Nevertheless, many such attempts had not met the aims. Considering the importance of rice agribusiness and the fact that it was dominated by smallholder farmers, there is a need to investigate smallholder rice farmers who have worked collectively and gain benefit through it. Therefore, they can capture value from rice value chain system. The objectives of the research were to identify and describe what benefit captured through collective action and how, and; to identify and describe how these farmers act collectively within a group and why.

The research question was answered and objectives addressed by using a single case study. A farmer group named Gapoktan Sidomulyo was selected as it was identified by the central and local government as a well-developed collective farmer group, in term of how they can organise collectively and by doing that they can improve their value chain. Semi-structured face to face and group interviews were conducted as the primary data collection. The participants were selected by using a purposive sampling method in order to ensure that the insights from the important and relevant actors to the group development were included in the study. The participants included: the Gapoktan Sidomulyo leader, the members of leadership team, the poktan leaders, the active farmers, the government officers, and buyers for restaurant chains and food manufacturers. Subsequently, field observations and document collection were conducted in order to support the primary data.

8.2. Conclusions

Benefit could be obtained by smallholder rice farmers from working collectively as a group. Benefits include: improving competitive advantage, improving human capability, improving bargaining power, and shortening rice value chain. These benefits then enabled them to capture more value offered by markets and the benefits enabled farmers to upgrade the value chain. Farmers could produce good quality rice with consistent

supply. This also helped them to link with different buyers, from local market and national market, thus, this action helped them to improve their market. Nevertheless, only some farmers were able to gain benefit through this action, and they were who can produce consistently volume beyond their household requirements.

Smallholder rice farmers were able to gain benefit from the rice value chain through collective action as a consequence a number of factors. Firstly, collective action by farmers that enabled them to gain benefit from a rice value chain required external incentives and support as well as a motivated group of farmers. Even when collective action was supported by government, it was essential to motivate farmers to act collectively and see the benefits for doing so. Trusted external agents could assist farmers to recognise the potential benefits of acting collectively in improving the value chain. Therefore, there was enthusiasm to undertake activities as a group based on this knowledge.

Secondly, trust and a shared vision between members of the farmer group was an important element for collective action that ensured farmers' benefits from the rice value chain. These formed the basis for building horizontal relationships between farmers. This affected the reciprocity between them and their commitment. Therefore, this increased their willingness to be involved within the group.

Thirdly, in a group that was heterogeneous, in terms of religion (Islam and Christian) and reliance on farming as an income source, group cohesion could be achieved through effective group management. Effective management is management that promotes transparency and active communication between farmers and the leadership team, and giving an opportunity for each actor within the group to play their role. These reduced the potential of conflict and maintained the farmers' awareness of the group so that they keep engaged within the group.

The leadership capability was the other factor that determined the group performance. It was not only related to the organisation's management, but also business capability. Leadership with strong motivation, good interpersonal skills, social awareness, as well as administration and marketing skills were essential for the group's development. What was significant in this study is a good leadership can also be provided by a team of people. These capabilities could be built collectively, instead of individually. This study shows that heterogeneity was not always disadvantageous for the group development,

instead it presented power for the group. In addition, it was essential to have a trustworthy leader who is accepted by the community, otherwise it would be difficult for a leader to organise farmers under a group.

Fifthly, maintaining the active members and the leadership team's participation was essential as they were the key actors for the collective action. For the active farmers, this include: facilitating members to raise their voice and be involved in decision making, involving them to enforce rules, and conducting activity that attract them to attend regular meetings. Meanwhile, for the leadership team members, conducting an appropriate leadership team selection process was essential to maintain the leadership team members' participation. Farmers who have the capability were invited to be part of the leadership team, rather than appointing them. This process screened the people who have the capability and who really want to be part of the team. Nevertheless, it was also important to maintain their motivation in fostering the group by acknowledging their effort by giving them incentives.

Lastly, despite there was a culture to work as a group, it was important for having trusted external agents to facilitate farmers and motivate them to act collectively, particularly when this requires money in initiating the action. However, there were some points to be considered: It was important for the external agents work collaboratively with farmers to encourage active farmers' engagement in the group. This enabled the external agents to gain the shared vision and build the farmers' commitment. It was also important for the external agents not to be too attached to the group to reduce farmers' dependency on the external agents. Additionally, support from external agents, such as technology and finance, was important to build farmers capability in improving the value chain.

8.3. Implication of the research and recomendation

This research is useful for organisations who are involved in the smallholder farmers' development programs, such as NGOs and governments. It may also be useful to other farmer organisations. This research provides substantial evidence of a successful smallholder rice farmer group in improving their value chain and expanding their market. Based on findings from this research, there are some recommendations for policy, as follows:

1. Collective action for smallholder farmers' market development is not only about putting the same actors in the same group, but also about placing actors who have farm business capabilities under team management. External support will not be optimally utilised by farmers if they do not have the capability to use it. Therefore, farmers have to be facilitated to improve their knowledge, not only about farm production, but also farm management and the agriculture industry. This policy may not be relevant for every farmer. Nevertheless, it may increase the possibility of developing capable farmers and future leaders for the communities.
2. Improving value chain is essential for smallholder rice farmers' collective action to gain more benefit from the rice value chain. Good management has been the key to make it work. This enables farmers to decide the right business model, such as how the business will run, how the leadership will work and decisions will be made. It is also essential to improve the farmers' control within the rice chain. Therefore, they can decide the partner with whom they want to work. They can selectively reduce the intermediary which is no longer relevant. In that regard, apart from providing training on business management, external agents can also facilitate farmers to improve their level within the chain. For instance, encouraging them to vertically integrate. This integration enables them to not only act as producers, but also as processors, so that they have more power within the chain.
3. To improve the smallholder farmers' market participation, there is a need a better connection between farmers and markets. This can be enhanced by establishing or developing a market infrastructure that enables farmers to share information and distribute their produce to consumers easily. The utilisation of communication technology and physical infrastructure such as paved roads are crucial. Farmers also need to be introduced to different marketing platforms, such as online marketing. External agents may initiate the online market platform and involve farmers to utilise this platform. This may increase the opportunity to connect farmers with different markets.
4. Each value chain system has different characteristics. In order to enter a higher value chain system, farmers have to fulfil demanding criteria, such as product quality. There is a need to build farmers' awareness on market situations and to deliver programs that help farmers to improve the quality of their produce.
5. External support is crucial for supporting smallholder farmers to create better value chains. Considering the complexity of the requirement to enter a higher value chain

system that cannot be achieved alone by farmers, it is also essential for the external agents to have the required capabilities, such as business and on-farm abilities. From the government context, these capabilities need to be possessed by the agriculture extension officer, who has intensive interaction with farmers. Thus, it is also important to provide training programs for the external agents to develop their on-farm and off-farm capabilities.

8.4. Methodology assessment

The single case study method was appropriate for answering the research question and meeting the research objectives. This method enabled the researcher to obtain depth and a wide variety of information from different actors. Therefore, the researcher could gain the insight of a case comprehensively. This method also enabled the researcher to observe the case and the interaction between farmers and the village community as there was sufficient time to explore the site. However, findings from this case may be difficult to generalise as this case has a different context, from other cases in other areas.

8.5. Future research

The following are suggestions for further research:

1. The culture may determine the success of collective action and each area, particularly in Indonesia, has a different culture. It would be interesting to find out other cases with different cultures and explore the connection between culture and farmer group development.
2. This research did not highlight the potential of the group to be sustainable and be developed further. It would be interesting to explore how large the group of smallholder farmers could be. It is also interesting to explore how this collective action can be replicated and be a model for rural economic development based on agriculture sector.

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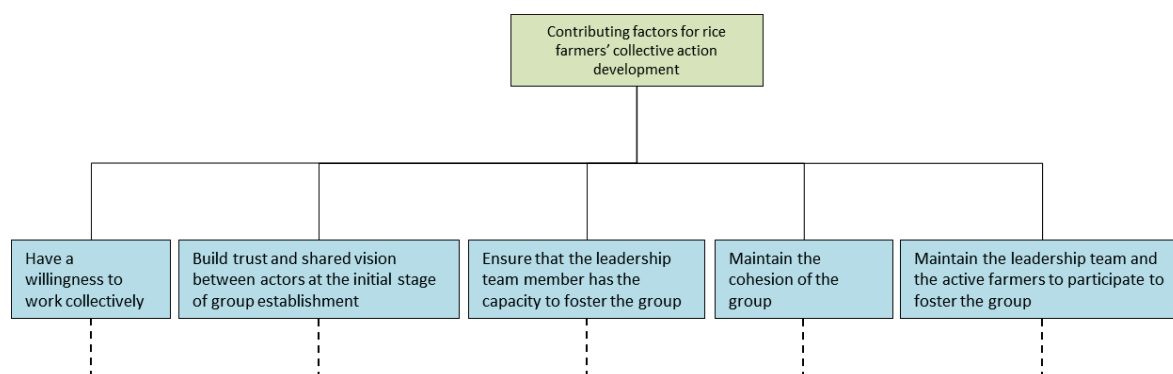
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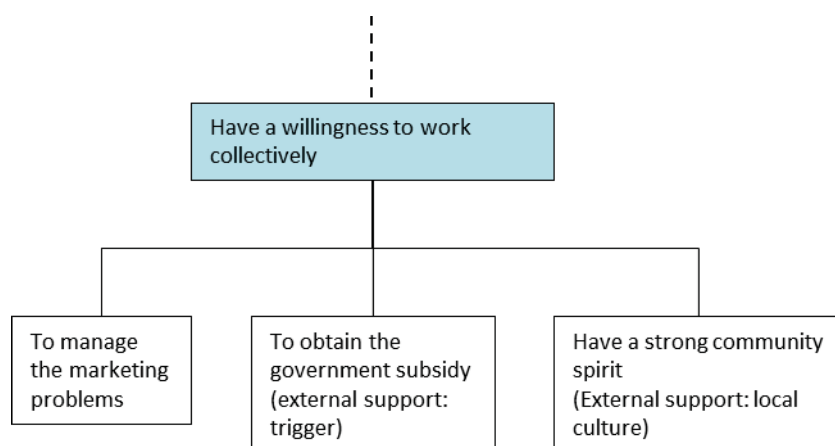
Glossary

<i>Arisan</i>	: Activities to raise money of the same value by a few people. Thereafter, these people draw a name to see who will win the money. These activities are conducted regularly until all members have won the money.
<i>Bimas</i>	: Mass dissemination of Panca Usaha Tani
<i>Carik</i>	: (Village secretary) A person who is selected by the district office to assist the village leader. This position is filled by a civil servant.
<i>Gadu</i>	: The growing season after the main growing season (between rainy season and dry season).
<i>Gapoktan</i>	: A combined farmer group (gapoktan) refers to a group consists of different farmer groups. The combined farmer groups usually formed by 100-150 farmers with a total land holding of around 80-140 hectares
<i>Gotong royong</i>	: A tradition of working together (community spirit).
<i>Ijon</i>	: A term of trade that allows the rice collector to set the transaction and the price before the farmers harvest their produce. The rice collector sets the transaction based on the farm area, not the volume of rice.
<i>Kades</i>	: (Village leader) A person who is elected by the village people through general election to lead the village government organisation.
<i>Panca Usaha Tani</i>	: Five agriculture development programs, including irrigation development, improving qualified seed utilisation, fertiliser distribution, pest management and farm management development.
<i>Poktan</i>	: Farmer group (poktan) is a group of farmers (crops/livestock/state crops) which consist of 20-25 participants that form the organization based on mutual interest; a similar social, economic, and resources environment; a similar commodity; and solidarity to develop members' farms.
<i>Sambatan/rewangan</i>	: A tradition to help a family who hold a reception to cook and prepare the food.
<i>Tabela</i>	: One of the rice farming systems in Indonesia. In the tabela system, farmers directly plant the seed in the paddy field.

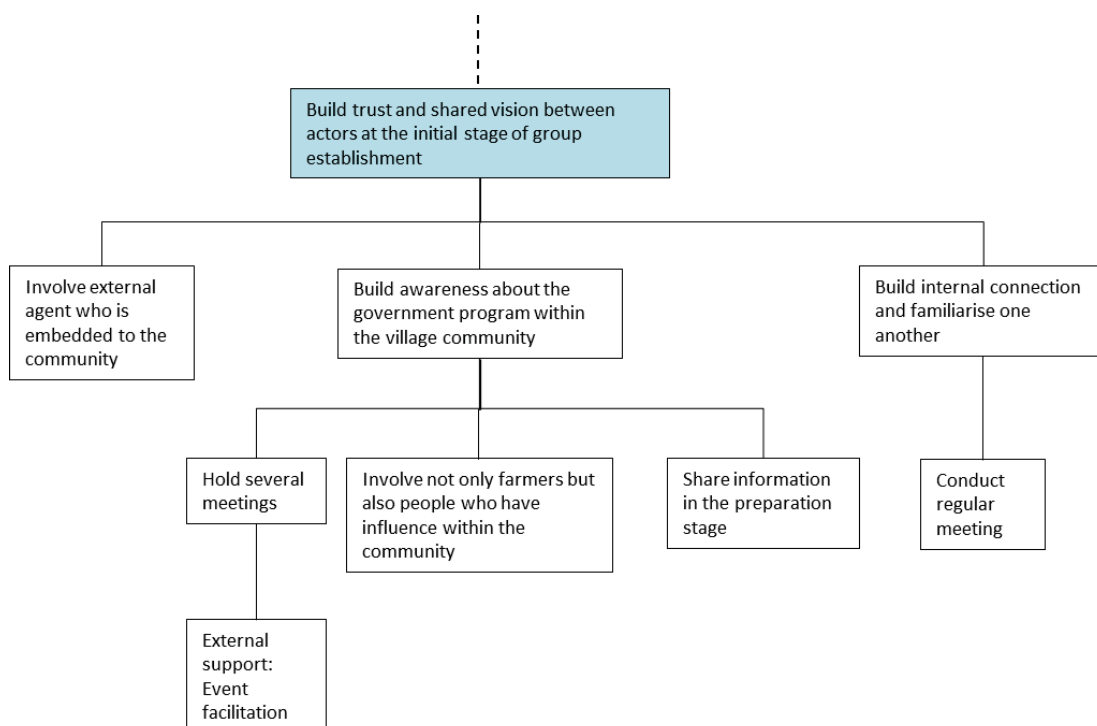
Appendix 1 Hierarchical diagrams of factors contributing to collective action development



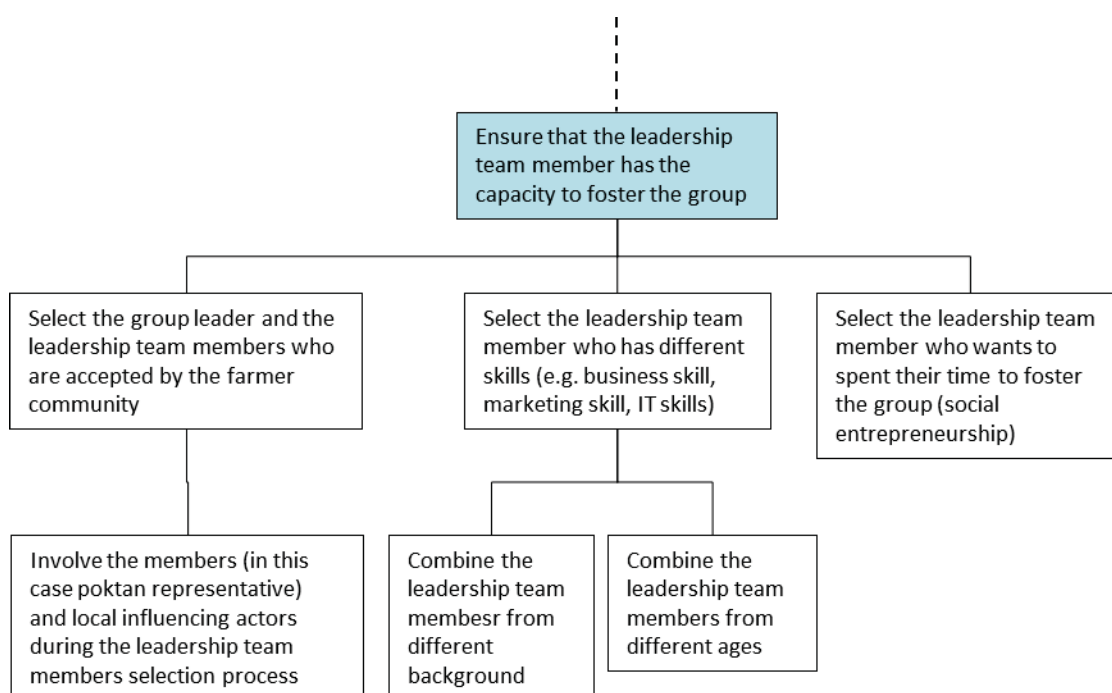
Appendix 2 Hierarchical diagrams of the motivation to work collectively



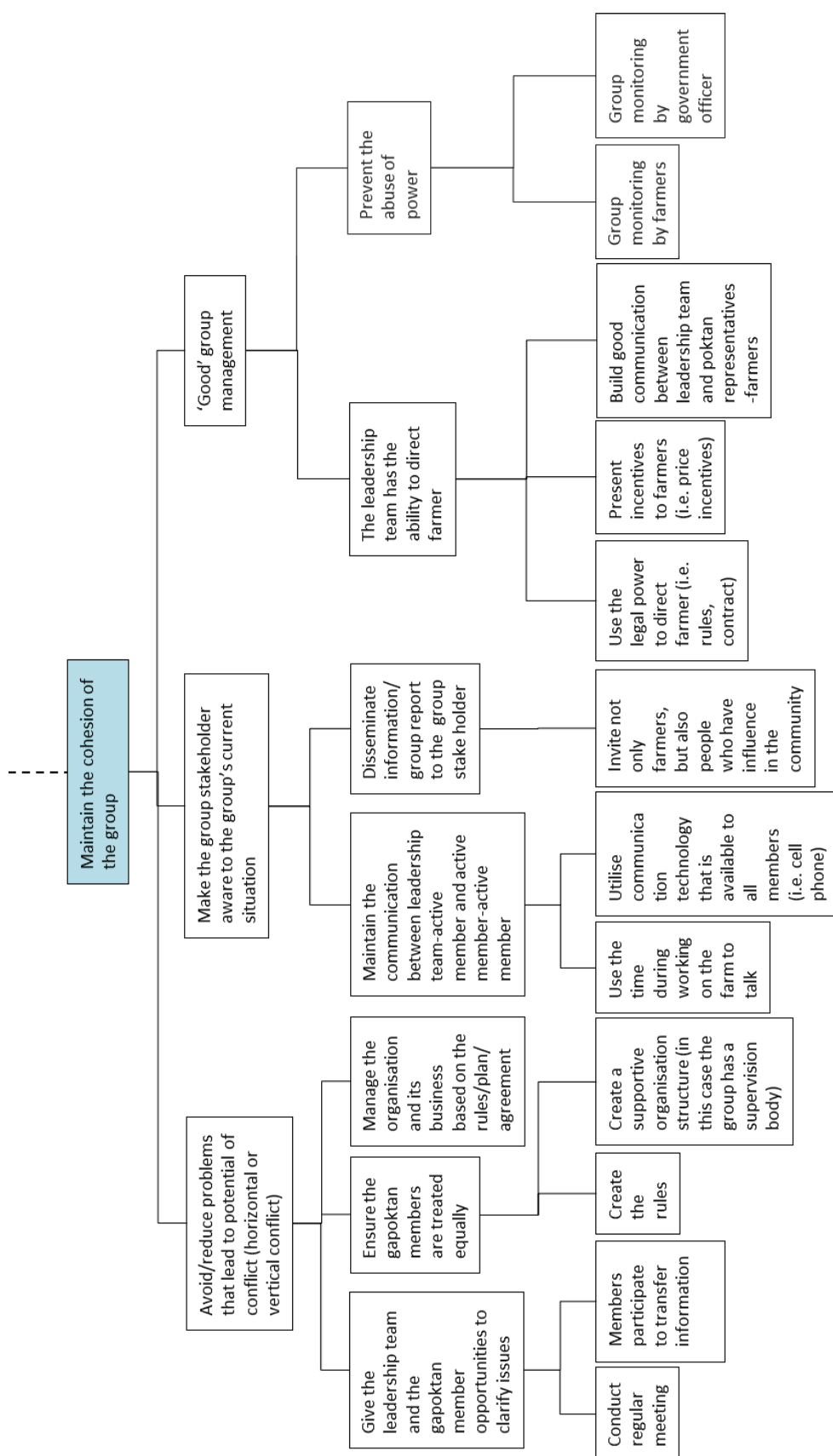
Appendix 3 Hierarchical diagrams of trust building and gaining a shared vision



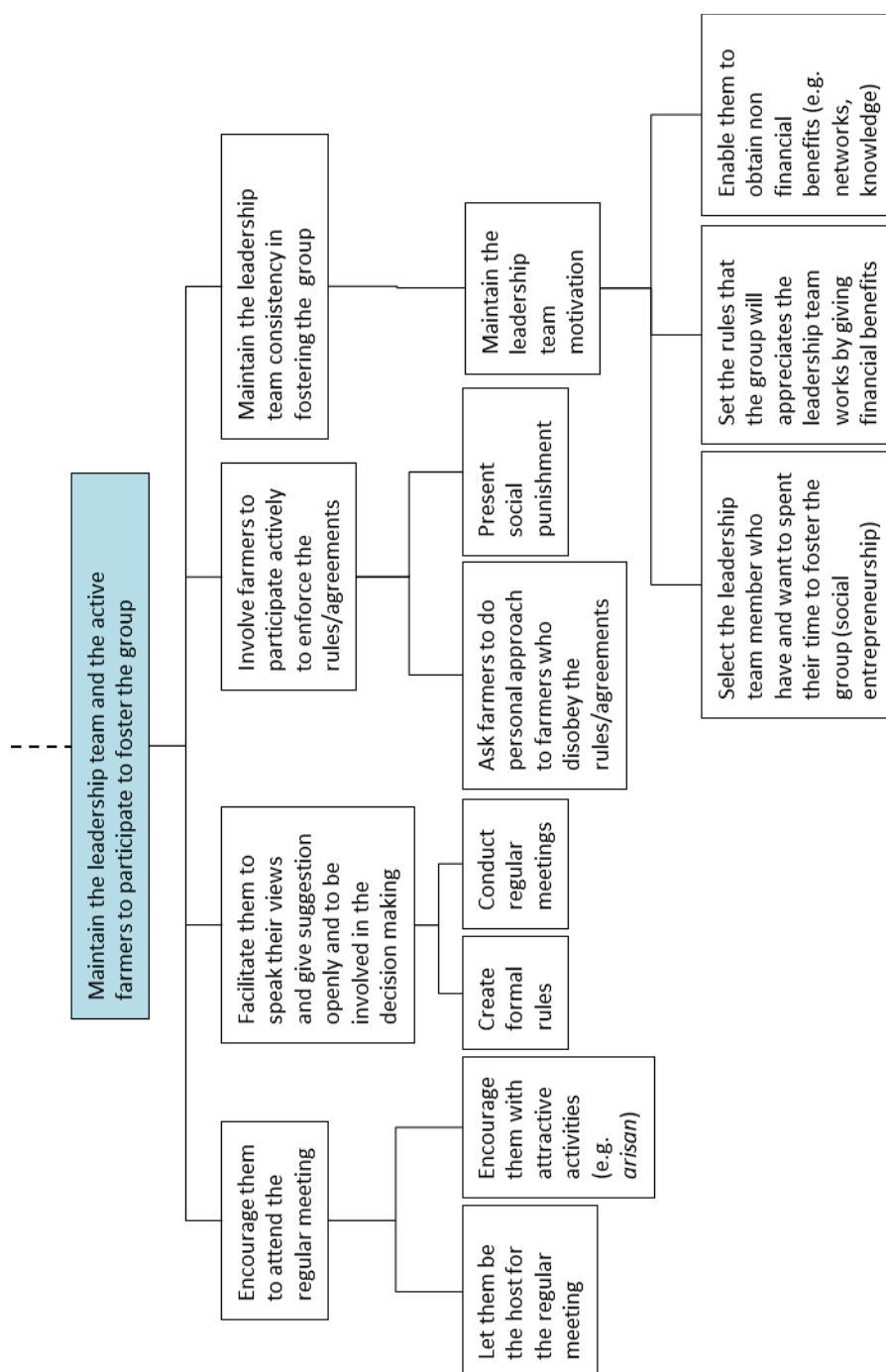
Appendix 4 Hierarchical diagram of how to build a capable leadership team



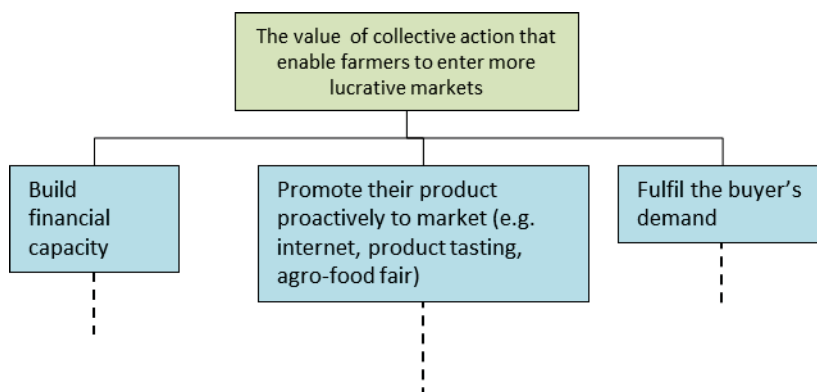
Appendix 5 Hierarchical diagram of how to maintain group cohesion



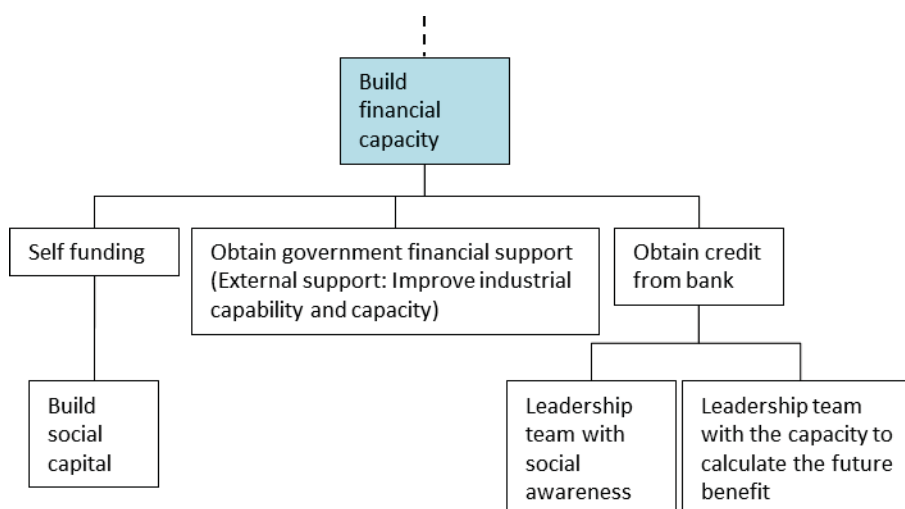
Appendix 6 Hiearchical diagram of maintaining participation rate of active members and leadership team



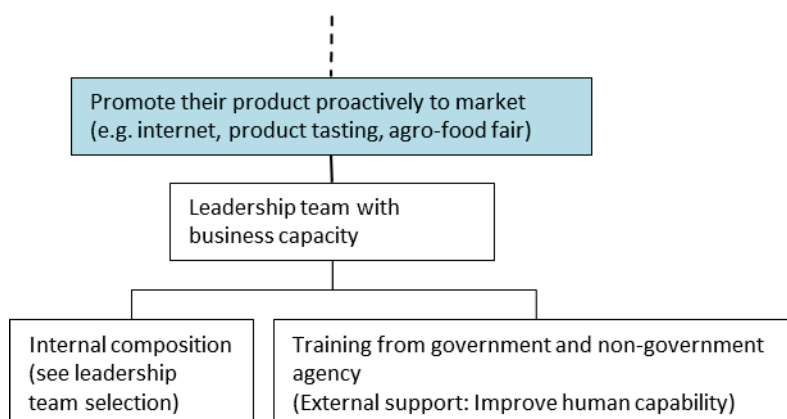
Appendix 7 Hierarchical diagram of the value of collective action for farmers' in improving their value chain



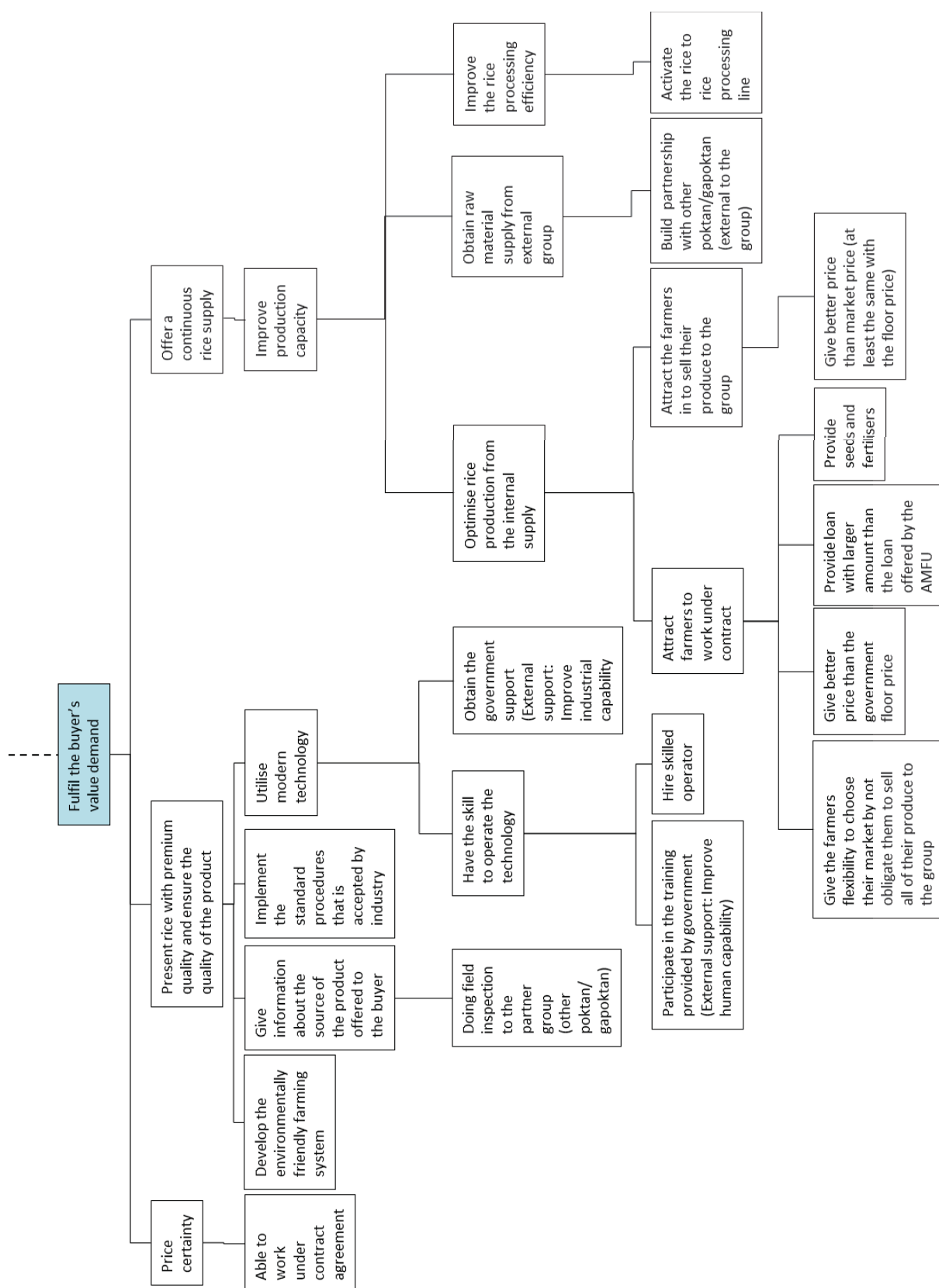
Appendix 8 Hierarchical diagram of improving financial capacity



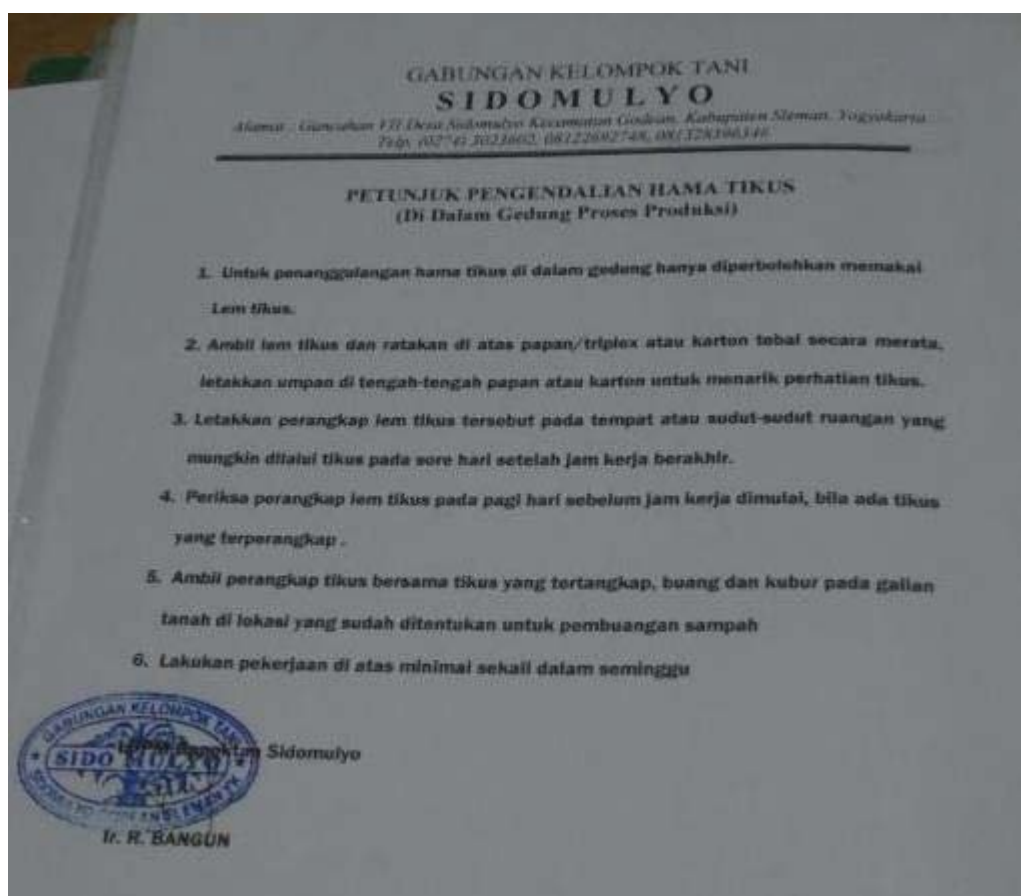
Appendix 9 Hierarchical diagram of product marketing



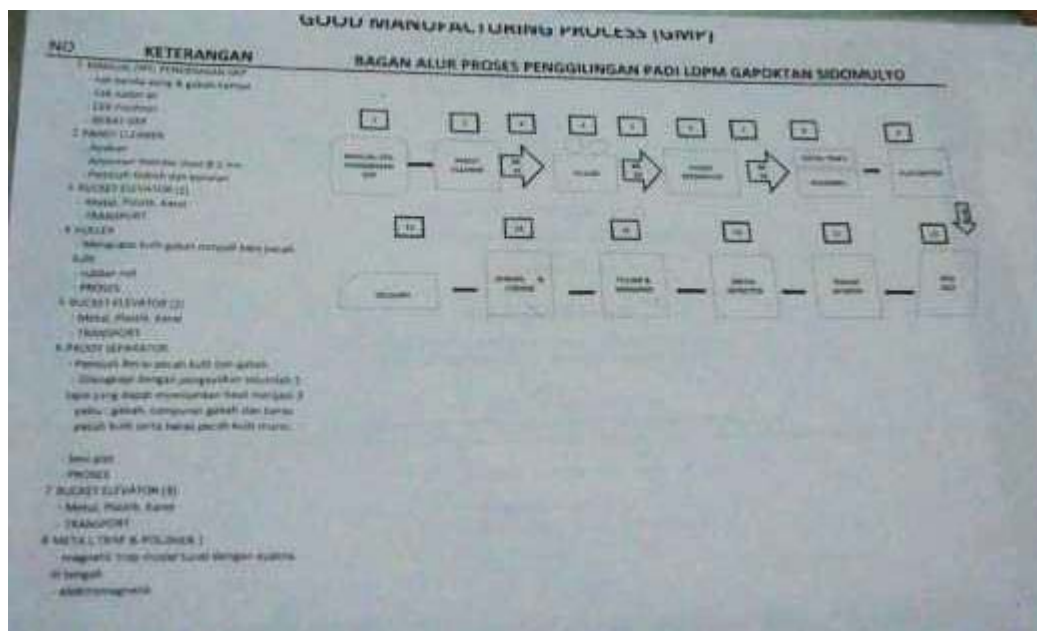
Appendix 10 Hierarchical diagram of managing the market demand



Appendix 11 Instruction sheet for pest management in the rice storage



Appendix 12 Standard operation procedures sheet in Gapoktan Sidomulyo



Appendix 13 Organic product certificate



Appendix 14 Gapoktan Sidomulyo's rice processing plant



Appendix 15 Monitoring form for partner group supervision

**CHECK LIST PELAKSANAAN BUDIDAYA RAMAH LINGKUNGAN PADI MERAH DAN PUTIH
LEPAS GAPOKTAN SIDOMULYO, GODEAN, SLEMAN, YOGYAKARTA**

Nama Petani: <u>Suherman</u>		Proses Jajangan: <u>[Signature]</u>	
Luas Penanaman: <u>500 m</u>			
Tanggal Tanam: <u>19-2-2023</u>			
Jenis & Varietas padi: <u>Morah (mandel) / Putih (Irb4, Cerasang, Inpari) *</u>			
Gapoktan: <u>Kampung Tani Sleman</u>			
Poktan: <u>Budaya Ramah</u>			

NO	ITEM		TAHUN 2023									
			Bulan 1: Januari				Bulan 2: Februari					
			1	2	3	4	1	2	3	4		
			Tgl	Jm	Tgl	Jm	Tgl	Jm	Tgl	Jm	Tgl	Jm
1	Penyerahan Benih ke Petani	50 Kg/ba			17	25					15	20
2	Pupuk Dasar (kompos/Petrogansik)	500 Kg/ba										
3	Tanam (Transplanting)										14	
4	Pelaksanaan Pupuk Susulan I											
	- Urea	100 Kg/ba									10	5
	- NPK	150 Kg/ba									20	7
	- Pupuk Cair R11	1 ltr/ba										25
5	Pelaksanaan Pupuk Susulan II											
	- Pupuk Cair R11	2 ltr/ba										
6	Pelaksanaan Pupuk susulan III											
	- Urea	150 Kg/ba										
	- NPK	200 Kg/ba										
	- Pupuk Cair R11	2 ltr/ba										
7	Pelaksanaan Pupuk Susulan IV											
	- Pupuk Cair R11	2 ltr/ba										
8	Pelaksanaan Pupuk Susulan V											
	- Pupuk Cair R11	2 ltr/ba										
9	Penyemprotan Bio Pestisida (Bevengt), Dilakukan bila perlu, berdasar hal penanaman lapangan	1,55 Kg/ba										
10	Panen											
11	GKP Masuk Gudang Lentera											

Appendix 16 Paddy field around Gapoktan Sidomulyo



Appendix 17 Rice sortation and packaging room



Appendix 18 Weekly farmer market



Appendix 19 Participants interview prompts

PARTICIPANTS INTERVIEW PROMPTS

- Group historical background
 - Why and how they established a collective group?
 - Who were involved in the group establishment and what were their roles?
 - Were there any challenges during the group establishment? How to address this challenge?
 - What had contributed to the group establishment?
 - How it affect the group performance?
- Group operation
 - How and why they decide to operate in certain arrangement?
 - What is the role of the group participants and their rights?
 - What is the role of the external agents on the group operation? (if any)
- The benefit of group from different perspective
 - Why the members/other organization join/working with the group?
 - What benefit provided by joining/working with this group?
 - How the members gain benefit from this group?
 - How this group is beneficial to its member/other organization?
- Group performance
 - What do you think about the group performance?
 - What has contributed to the group performance?
 - Why and how these contributing factors influence the group performance?
 - How these contributing factors are emerged/shaped/accessed?
- Challenges
 - What are the challenges in fostering this group and maintaining its business?
 - What are the challenges in managing the inter-group relationship?
 - How do you address these challenges?

Appendix 20 Low risk notification



Date: 26 April 2016

Dear Shaf Rijal Ahmad

Re: Ethics Notification - **4000015987** - **Improving small scale rice farmers' capacity to capture more value from the rice value chain through collective action**

Thank you for your notification which you have assessed as Low Risk.

Your project has been recorded in our system which is reported in the Annual Report of the Massey University Human Ethics Committee.

The low risk notification for this project is valid for a maximum of three years.

If situations subsequently occur which cause you to reconsider your ethical analysis, please go to <http://rims.massey.ac.nz> and register the changes in order that they be assessed as safe to proceed.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

A reminder to include the following statement on all public documents:

"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named in this document are responsible for the ethical conduct of this research."

If you have any concerns about the conduct of this research that you want to raise with someone other than the researcher(s), please contact Dr Brian Finch, Director - Ethics, telephone 06 3569099 ext 86015, email humanethics@massey.ac.nz.

Please note, if a sponsoring organisation, funding authority or a journal in which you wish to publish requires evidence of committee approval (with an approval number), you will have to complete the application form again, answering "yes" to the publication question to provide more information for one of the University's Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

Yours sincerely

Research Ethics Office, Research and Enterprise

Massey University, Private Bag 11 222, Palmerston North, 4442, New Zealand **T** 06 350 5573; 06 350 5575 **F** 06 355 7973
E humanethics@massey.ac.nz **W** <http://humanethics.massey.ac.nz>

Appendix 21 Information sheet in English



Massey University

Department of Agribusiness
Institute of Agriculture & Environment
Massey University
PO Box 11 222
Palmerston North 4442
New Zealand

Improving small scale rice farmers' capacity to capture more value from the rice value chain through collective action

INFORMATION SHEET

Dear Sir/Madam

My name is Shaf Rijal Ahmad and I am from Sleman, Yogyakarta. I used to work for the Directorate General of Processing and Marketing of Agricultural Commodities, Ministry of Agriculture of Republic Indonesia and now I work for the Directorate General of Food Crops at the same ministry. I am also registered as a student at Massey University in Palmerston North, New Zealand. I am in Yogyakarta and Jakarta to do field work for my thesis for a Master in AgriCommerce.

Project Description and Invitation

Considering the importance of the rice sector for the rural economy development and national food security, the government has been conducting programmes to encourage rice farmers to develop their capacity to gain more value from the rice value chain through farmer groups. These programmes provide subsidies to build infrastructure as well as facilitate technology. However, the government found that many such attempts have failed to meet the objectives. Therefore, there is a need to investigate experiences of farmer groups which are able to organise its members and optimize the supports they have got to build and develop the industrial capacity.

In that regard, Gapoktan Sidomulyo is selected as they are identified by government as an example of a “success” group that can be explored for this study. The aim of this research is to describe how and why this group is well operated. It will provide insight for government and/or farmer groups as to what may be required for organizing collective action and gaining the benefit from the rice value chain.

To fulfill the aim of this study, I intend to interview a range of people involved and knowledgeable of the group's current operation and development within the rice industry. The

people will include (but not limited to) the chairman of the farmer collective group, the rice production manager, the farmer group leader, group members, government officers, and market actors. I am therefore inviting you to participate in this study.

In order to ensure the confidentiality, all information collected from participants (before they are published) can only be accessed by me. Individual details of participants will not be revealed at any time. However, this may not work for some people as they may still be identified from their position/rank. If you decide to take part, you will be asked to sign a participant consent form. With your permission, I would like to audio tape the interview session.

Participant rights:

- Decline to answer any particular question.
- Withdraw from the study at any time during participation.
- Ask any questions about the study at any time during participation.
- Provide information on the understanding that your name will not be acknowledged unless you give permission to the researcher.
- Be given access to a summary of the project findings when it is concluded.
- Ask for the voice recorder to be turned off at any time during the interview.

Data management

Data obtained will be analyzed and used for my Master degree in AgriCommerce thesis and for other related academic publications. If a translator is used to assist the researcher, the translator will be required to sign a confidentiality agreement. All recorded interviews will be kept safely by Massey University and will be erased after a period of five years. The completed thesis will be able to be accessed through the Massey University library.

Project contacts

For your convenience, contact details of me and my two supervisors have been provided below:

Researcher	Shaf Rijal Ahmad	453/1 Ferguson street Palmerston North Telephone: +64 22 6508807 Email: shafrijal_ahmad@yahoo.com
Chief Supervisor	Professor Nicola Shadbolt	Institute of Agriculture & Environment, College of Sciences, Massey University, Palmerston North Telephone: +64 (06) 356 9099 ext 84793 Email: N.M.Shadbolt@massey.ac.nz
Second Supervisor	Dr. Janet Reid	Institute of Agriculture & Environment, College of Sciences, Massey University, Palmerston North Telephone: +64 (06) 356 9099 ext 84812 Email: J.I.Reid@massey.ac.nz

This project has been evaluated by peer review and judged to be low risk. Consequently it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named in this document are responsible for the ethical conduct of this research. If you have any concerns about the conduct of this research that you want to raise with someone other than the researcher(s), please contact Dr Brian Finch, Director (Research Ethics), email humanethics@massey.ac.nz.

Appendix 22 Information sheet in Bahasa Indonesia



Massey University

Department of Agribusiness
Institute of Agriculture & Environment
Massey University
PO Box 11 222
Palmerston North 4442
New Zealand

Meningkatkan kapasitas petani padi skala kecil untuk memperoleh nilai tambah dari sistem rantai pasok beras melalui aksi kolektif

LEMBAR INFORMASI

Salam,

Nama saya Shaf Rijal Ahmad dan saya berasal dari Kabupaten Sleman, Yogyakarta. Saya pernah bekerja pada Direktorat Jenderal Pengolahan dan Pemasaran Hasil Pertanian dan saat ini saya bekerja pada Direktorat Jenderal Tanaman Pangan, Kementerian Pertanian. Saya juga tercatat sebagai mahasiswa di Universitas Massey di Palmerston North, New Zealand. Saat ini saya berada di Yogyakarta dan Jakarta dalam rangka penelitian untuk thesis Master jurusan AgriCommerce.

Deskripsi kegiatan dan undangan kepada calon peserta penelitian

Mengingat pentingnya sektor pertanian (padi) bagi perkembangan perekonomian pedesaan dan ketahanan pangan nasional, pemerintah melaksanakan program untuk meningkatkan kapasitas industri petani kecil agar mereka dapat memperoleh manfaat dari usaha produksi beras. Program yang hanya dapat diakses oleh petani yang berkelompok tersebut antara lain menyediakan subsidi untuk pembangunan unit pengolahan padi dan teknologi pengolahan padi. Namun demikian, pemerintah menemukan bahwa program tersebut banyak yang belum mencapai sasaran yang diharapkan. Oleh karena itu, perlu dilakukan kajian terhadap poktan/gapoktan yang berhasil mengorganisir petani dan mengoptimalkan dukungan yang diberikan untuk membangun dan mengembangkan kapasitas industri mereka.

Gapoktan Sidomulyo dipilih karena mereka telah teridentifikasi oleh pemerintah sebagai contoh kelompok yang “sukses” yang dapat digunakan untuk penelitian ini. Tujuan penelitian ini adalah untuk menggambarkan bagaimana dan mengapa kelompok ini dapat beroperasi dengan baik. Ini akan memberikan pengetahuan bagi pemerintah dan/atau kelompok tani lainnya mengenai faktor yang berpengaruh dalam mengelola sebuah kelompok dan mengambil manfaat dari usaha bersama produksi beras.

Untuk mencapai tujuan penelitian tersebut diatas, saya bermaksud untuk melakukan wawancara terhadap pihak yang terkait dan mengetahui mengenai pengelolaan dan perkembangan kelompok, antara lain: ketua gabungan kelompok tani, manajer produksi, ketua kelompok tani, anggota kelompok, petugas pemerintah pusat dan daerah, pelaku pasar, dan

pihak terkait lainnya. Berkaitan dengan hal tersebut diatas, saya mengundang bapak/ibu untuk berpartisipasi didalam penelitian ini.

Dalam rangka menjaga kerahasiaan, semua informasi yang didapat (sebelum dipublikasikan) hanya dapat diakses oleh saya. Identitas peserta tidak akan dibuka kepublik sampai kapanpun. Namun demikian, perlu diketahui bahwa kerahasiaan tidak dapat sepenuhnya terjamin bagi orang-orang tertentu karena orang-orang tersebut dapat teridentifikasi melalui posisi mereka dalam organisasi.

Jika bapak/ibu berkenan untuk turut berpartisipasi, bapak/ibu diminta agar dapat menandatangani surat persetujuan peserta. Wawancara ini akan berlangsung kurang lebih satu jam dan dengan persetujuan bapak/ibu, saya akan merekam sesi wawancara tersebut.

Hak peserta penelitian:

- Berhak untuk menolak menjawab pertanyaan.
- Berhak untuk mengundurkan diri sebagai peserta selama penelitian berlangsung.
- Berhak untuk mengajukan pertanyaan terkait dengan penelitian selama kegiatan penelitian berlangsung.
- Memberikan informasi dengan catatan nama bapak/ibu tidak akan dicantumkan kecuali bapak/ibu memberikan persetujuan.
- Berhak untuk mendapatkan akses terhadap ringkasan hasil penelitian.
- Berhak untuk meminta peneliti mematikan alat rekam selama proses wawancara.

Pengelolaan data

Data yang didapat akan dianalisa dan digunakan untuk tesis Master AgriCommerce dan publikasi ilmiah lainnya. Jika peneliti membutuhkan bantuan penerjemah, penerjemah tersebut akan diminta untuk menandatangani lembar kesepakatan untuk menjaga kerahasiaan. Rekaman wawancara akan disimpan oleh Universitas Massey dan akan dihapus setelah lima tahun. Tesis yang telah selesai ditulis akan dapat diakses melalui perpustakaan Universitas Massey.

Kontak yang dapat dihubungi

Untuk kenyamanan Bapak/Ibu, berikut adalah informasi kontak yang dapat dihubungi:

<i>Peneliti</i>	Shaf Rijal Ahmad	453/1 Ferguson street Palmerston North Telephone: +64 22 6508807 Email: shafrijal_ahmad@yahoo.com
<i>Pembimbing pertama</i>	Professor Nicola Shadbolt	Institute of Agriculture & Environment, College of Sciences, Massey University, Palmerston North Telephone: +64 (06) 356 9099 ext 84793 Email: N.M.Shadbolt@massey.ac.nz
<i>Pembimbing kedua</i>	Dr. Janet Reid	Institute of Agriculture & Environment, College of Sciences, Massey University, Palmerston North Telephone: +64 (06) 356 9099 ext 84812 Email: J.I.Reid@massey.ac.nz

Penelitian ini telah dinilai sebagai proyek beresiko rendah. Oleh sebab itu, proyek ini tidak dievaluasi oleh komite etik universitas. Peneliti yang namanya tertera diatas bertanggung jawab terkait dengan etik dalam penelitian ini. Jika ada pendapat atau pertanyaan yang ingin disampaikan selain kepada peneliti mengenai pelaksanaan penelitian, Bapak/Ibu dapat menghubungi Dr. Brian Finch, Direktur Research Ethics, email humanethics@massey.ac.nz

Appendix 23 Consent form



Massey University

Department of Agribusiness
Institute of Agriculture & Environment
Massey University
PO Box 11 222
Palmerston North 4442
New Zealand

Improving small scale rice farmers' capacity to capture more value from the rice value chain through collective action

Meningkatkan kapasitas petani padi skala kecil untuk memperoleh nilai tambah dari sistem rantai pasok beras melalui aksi kolektif

PARTICIPANT CONSENT FORM FORM PERSETUJUAN PESERTA

I have read the information sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

Saya telah membaca lembaran informasi dan telah mendapatkan informasi lengkap yang sudah dijelaskan. Pertanyaan yang saya berikan telah dijawab dengan memuaskan dan saya mengerti bahwa saya dapat mengajukan pertanyaan kapan saja.

I agree/do not agree to the interview being sound recorded.

Saya setuju/tidak setuju terhadap proses rekam suara selama wawancara.

I agree to participate in this study under the conditions set out in the information sheet.

Saya setuju untuk berpartisipasi dalam penelitian ini sesuai dengan kondisi yang disampaikan dalam lembaran informasi.

Signature
(Tanda tangan) _____ Date
(Tanggal) _____

Full name-printed
(Nama lengkap) _____