



Universiteit
Leiden
The Netherlands

Deconstructing a biofuel hype : the stories of jatropha projects in South Sulawesi, Indonesia

Widjaja, H.

Citation

Widjaja, H. (2018, November 27). *Deconstructing a biofuel hype : the stories of jatropha projects in South Sulawesi, Indonesia*. Retrieved from <https://hdl.handle.net/1887/67288>

Version: Not Applicable (or Unknown)

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/67288>

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/67288> holds various files of this Leiden University dissertation.

Author: Widjaja, H.

Title: Deconstructing a biofuel hype : the stories of jatropha projects in South Sulawesi, Indonesia

Issue Date: 2018-11-27

6 The biofuel stories in Moncongloe

This chapter presents a comparison between *jatropha curcas* and cassava – two biofuel potential crops – in Moncongloe of Maros, South Sulawesi. *Jatropha* was massively cultivated in Moncongloe from 2007 to 2009 under the plasma scheme of PT Jatro Oil Plantation (JOP). Almost in the same period of time, farmers gradually shifted to cassava to supply the growing demand of cassava processing industries for bio-ethanol and other cassava based products. The comparison explores the reasons why farmers in Moncongloe were interested in *jatropha* and why they shifted to cassava. A common explanation of the shift itself is central in the disappointment of farmers on the low real yields, unfavorable farm gate prices and the absence of a market due to the broken promise of JOP. While my research confirms these common reasons, local key factors explaining the shift were also revealed.

My research focuses on the specific contexts of Moncongloe, I examined local socio, economic and tradition contexts that are central in farmers' decision making processes regarding the selection of crops. It aims to understand how local factors in Moncongloe have influenced and determined farmers' decision in crops selection.

For the purpose of my research, I conducted ethnographic observation in Moncongloe to examine the key local factors that influenced farmers' crops selection decisions. Interviews were administered with farmers and key figures notably the middlemen as well as with both *jatropha* and cassava companies. The effort to understand the specific contexts of Moncongloe was also accompanied with literature reviews on the history and current state of the area.

The research suggests the existence of four determinant factors in farmers' decision making: access to resources, actors in the supply chain, business model, and market. The analysis of access to resources was focused on the effects of the rapid peri-urbanization process in Moncongloe which signifies the on-going deagrarianization on farmers' access to land and the availability of labor. Meanwhile, for the analysis of actors in the supply chains, the focus was on the patron-client pattern in relation to the role of middlemen or brokers in the supply chain of *jatropha* and cassava. The research reveals the existence of two different types of middlemen: commercial and non-commercial intermediaries that have significant influences on farmers' participation in the cultivation of *jatropha* and cassava.

The analysis of the business model was conducted by comparing the plasma model in the jatropa case with the open market model in the cassava case. The analysis aims to examine the effectiveness of each model in securing the supply chain in the context of Moncongloe. The business model analysis is closely related to the first two analyses, where access to resources and intermediary actors play central roles as conditions for the success of the adopted business models. Lastly, the market analysis was conducted by examining the available market options for each crop. The analysis suggests that the existence of alternative and competitive markets determine farmers' calculation in bearing the risks of crop selection.

After this introduction, I will first present the profile of Moncongloe with specific focus on its agrarian transformation process that will be the central background in the discussion on jatropa and cassava investments. A patron-client analysis on the commercial and non-commercial intermediaries in Moncongloe will be presented before the conclusion of this paper.

6.1 Moncongloe: From Forest to Satellite City

I visited Moncongloe Bulu Village for the first time in July 2011 to collect field data on PT Jatro Oil Plantation (JOP) activities. My first interviews with the former company staff and the participating plasma farmers suggested that doing research in Moncongloe would not only provide rich information on the story of PT JOP's jatropa activities, but also an opportunity to observe the local conditions, which appears to explain the responses of Moncongloe farmers towards jatropa. The observation and analysis are essential in understanding the process of crops introduction and commercialization in Moncongloe, which is not only limited to jatropa but also other crops, notably cassava which is now a new important cash crop for Moncongloe farmers.

One important feature of Moncongloe which makes it interesting as a study site is that it presents a very dynamic deagrarianization process.¹⁵⁹ In present days, Moncongloe Bulu Village as part of the Moncongloe Sub-district of Maros District is transforming to become a satellite city of Makassar. By looking at its history, Moncongloe has experienced both agrarian and social changes for decades.

Moncongloe (Makassarese for the highland) is located 22 km on the east of Makassar at the border area of Makassar with Maros and Gowa. Moncongloe is a sub-district of

¹⁵⁹ Bryce (1993: 5) defines deagrarianization as a process of economic activity reorientation, occupational adjustment and spatial realignment of human settlement away from agrarian patterns. This process is manifested in a decreasing role of agriculture in rural people occupation and income sources, social reidentification as people start to regard themselves less as farmers and imagine futures outside of agriculture, increase movement between rural and urban areas, and the presence of spatial interpenetration since urban and rural become increasingly intermixed (Rigg 2001 as cited in Hall et.al. 2011: 119). For this chapter, the term deagrarianization is specifically used for the process of peri-urbanization or *desakota*, the process by which massive belts of mixed 'urban' and 'rural' land use have been created in the extended metropolitan regions in Southeast Asia.

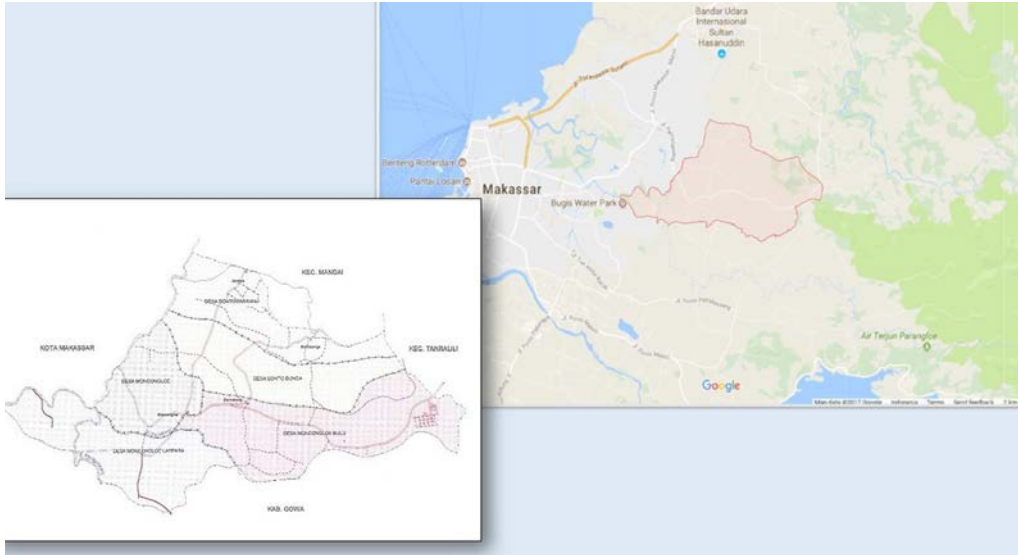


Figure 6.1. Moncongloe Map (Source: www.maps.google.co.id)

Maros District. Historically, Moncongloe was a district under the Kingdom of Tallo in the 16th century and governed by a nobility titled *gallarang*. The *gallarang* held power in Moncongloe until 14 years after the independence of Indonesia, where their authority was stipulated by the Government Regulation No. 34 Year 1952 juncto Government Regulation No. 2 Year 1952 on the establishment of *Makassar Afdeeling* which includes Maros as an *onderafdeeling* with 16 districts each governed by their local nobilities of *karaeng*, *arung* and *gallarang*. In 1959, the administrative status of Moncongloe was changed to village level under the sub-district of Mandai following the issuance of Law No. 29 Year 1959 on the establishment of regencies in South Sulawesi, including the Maros District. This law also ends the official authority of local nobilities and replaces them with the formal Indonesian administration. The status of Moncongloe was upgraded to sub-district level in 2000 and consists of five villages.¹⁶⁰

In 2011 Moncongloe Sub-district covers an area of 46.87 km² with a population of 17,257 inhabitants (BPS Maros, 2011). While it has a long history of presence, not much documentation is available on Moncongloe. In my research I conducted data collection, both primary and secondary data to understand the sequence of changes in the area. In doing that, I refer to my interviews and observation as well as to the available publications on Moncongloe.

6.1.1 Gaining Diversity, Losing Resources

Historically, Moncongloe is the birthplace of a well known Islamic cleric, Asy-Syaikh al-haj Yusuf Abu al-Mahasin Hidayatullah Taj Al-Khalwati al-Makasari or Syekh Yusuf in 1626. His

¹⁶⁰ The official website of Maros District: <http://maroskab.go.id/statis-4-sejarah-maros.html> (accessed on 15 March 2012).

mother was the daughter of the Gallarang of Moncongloe. In the modern literature on Islam in South Sulawesi, Moncongloe is described as a place in South Sulawesi where the Islamic rebellion, Darul Islam was once had its presence. Moncongloe was a base of the Darul Islam rebellion since 1950 and lasted until 1967, which was two years longer after the death of the leader Qahar Muzakkar in 1965. During the period of the Darul Islam in Moncongloe, the local head of rebellion enforced the implementation of Islamic Syariá which affected the local system, where traditional religion, *Patuntung* was banned and the believers were forced to convert to Islam, furthermore the *gallarang* system was denied in order to create an egalitarian social system.

The existence of Darul Islam in Moncongloe was ended through the occupation of national army. This area was turned into a home base of Kodam (military area command) XIV Hasanuddin which consisted of several military housing complexes for the Military Police Corps (CPM), the army cooperative center (*Pusat Koperasi Angkatan Darat-Puskopad*), the army medical unit (*Kesehatan Daerah Militer-Kesdam*) and the military escort unit (*Kompi Pengawal-Kiwal*). As a military homebase, Moncongloe experienced a massive agrarian change. Moncongloe which used to be a forested area and homogenous in terms of population – a closed society, especially during the period of Darul Islam - suddenly experienced a rapid exploitation of natural resources and hosting a new and diverse population.

As written in the book of Taufik, *Kamp Pengasingan Moncongloe* (the Dentention Camp of Moncongloe), the establishment of the military homebase in Moncongloe was closely linked with the existence of the ex-communists rehabilitation camp (*kamp instalasi rehabilitasi*) which was established in the same period. There were 911 communist prisoners, 859 men and 59 women, who were detained in the rehabilitation camp from 1969 to 1978, and being used to support the construction of the military housing complexes and their infrastructures. Taufik (2010) described that only few of the prisoners had any farming experience, as they were mostly white collar professionals but in just one year they transformed 460 hectares of forest into productive farmland where they grew cassava and maize. Three years later, when Moncongloe was officially classified as a rehabilitation camp, prisoners were forced to hand over three quarters of the land they had cultivated to the military officers in charge of the camp. They were also forced to form corvee labor teams to work on the officers' land, to harvest bamboo and timber, which they processed to make posts and plywood and other building materials, and to collect rocks for construction.

What happened in that period has shaped Moncongloe that we see today. Moncongloe is no longer a forested area, especially because the heavy exploitation of timber and bamboo which was sold to the Paper Mill of Gowa by military officials.¹⁶¹ This environmental change is considered as the cause of regular drought and landslides in Moncongloe nowadays. The existence of the military housing complexes and the

¹⁶¹ In Taufik (2009), it was written that bamboo was an important source of income for military officials in Moncongloe. They used the prisoners to clear bamboo forests and sold the bamboo to the paper mill for Rp. 50 to Rp. 100 per tree.

rehabilitation camp in Moncongloe has also changed the land tenure structure, where forests were cleared to provide space for arable land and housing complex of the military personnel. Every military personnel received five hectares of land, while the prisoners were given one hectares per person– which in the reality only one fourth hectares that was fully owned by them and later on sold to either military officials or to the locals to earn some cash after being released from the camp in 1978.

It was during this period that the construction works of road infrastructures in Moncongloe, connecting villages (and military complexes) in this area and also Moncongloe with the main provincial road in Daya, Makassar were realized. The workers were mainly the communist prisoners. The other significant change was the change of population composition, from homogenous moslem and Bugis-Makassar population to a mixed and diverse population. The existence of military complexes and their populations had caused the diversification of ethnicities and religions in Moncongloe. Non-moslems, mostly the Christian Torajans, found their ways to migrate in Moncongloe as part of the military complexes populations. They constructed a church – *Kamsing Church*, which was built by the prisoners and they also introduced pig rearing in Moncongloe, which was not there when Moncongloe was an entirely moslem area.

The military homebase has contributed to massive changes in Moncongloe everyday life. The diversity as well as the infrastructure and the agricultural development as ‘positive progresses’ can be credited to them. However, their roles in environmental destruction and marginalization of the locals’ access to resources, especially lands have contributed in perpetuating the poverty of the locals. In my field work, I found the existence of a gap between the descendants of the soldiers and the locals in terms of land possession. The descendants, who are the second and the third generations and mostly are farmers, and still own a relatively big parcel of farming land – two hectares on average. While in comparison, the locals only own a small parcel of land – below one hectare, and many own so little that they have to become sharecroppers or laborers for the other farmers.

The poverty situation in Moncongloe has shown little improvement over time. By referring to the description given by Amir (2010), during the period of Darul Islam rebellion Moncongloe people lived in extreme poverty. They did not have enough rice supply for their staple and had to consume poisonous wild tubers. People wore clothing made from recycled jute bags because they had no access to markets due to the civil war. In the peace period, with the changes in their landscape, poverty tended to be perpetuated. In addition to the inequalities in resource ownership, Moncongloe faces unfavorable environmental conditions for their agriculture. Moncongloe has no access to technical irrigation and has to depend on the annual rainfall. Due to this condition, there are no technical irrigated rice fields in Moncongloe and farmers can only grow rice once a year during the wet season.

Main agricultural products of Moncongloe are dry land crops, such as maize, peanuts and cassava, and vegetables such as lemongrass, and Siamese ginger (*lengkuas*), also fruits, such as mango and jackfruit. While these products are popular and easily absorbed by the market, but not all products are given good prices at farm level. Some, such as mango and

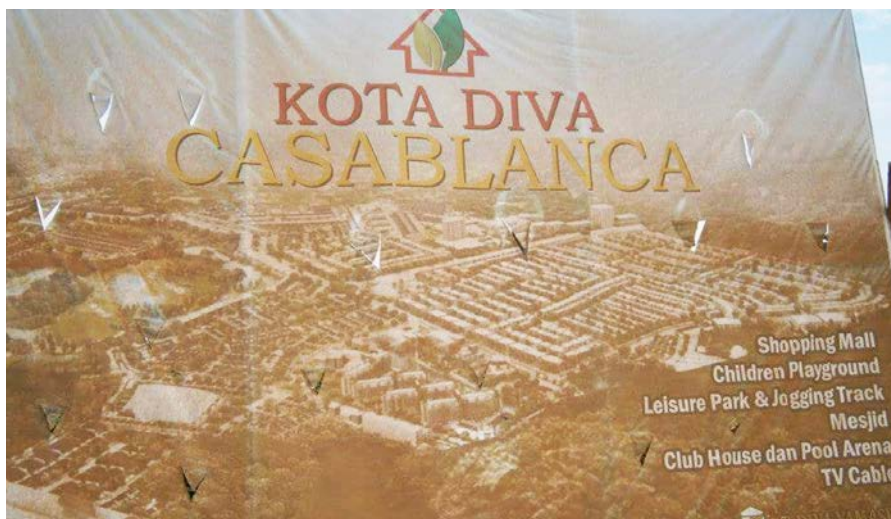


Figure 6.2 A billboard on the satellite city to be developed in Moncongloe (Photo: Henky Widjaja, 2012)

jackfruit, were sold for Rp. 2000 per kg for manggo and Rp. 5000 per fruit for jackfruit to the village collectors, while the market prices in Makassar were Rp. 10,000 per kg and Rp. 30,000 per fruit (2011 price rate). In my observation, this condition occurred because not all products have regular buyers. Products, such as Siamese ginger has a quite good price. It was sold for Rp. 2000 per kg and it is transported everyday to Makassar markets by the village collectors after being harvested by farmers. However, products, such as mango and jackfruit remain on the trees waiting for the collectors from outside the area to offer prices. Often, they are left on the trees and failed to bring income to the farmers.

6.1.2 Kampung Perampok to Satellite City

It is noted that Moncongloe once had a negative reputation as *kampung perampok* or the village of thugs. There are many bad stories about Moncongloe that caused this reputation. Some stories refer to the previous existence of the Darul Islam rebellion in Moncongloe. In these stories, Moncongloe is identified as *daerah gerombolan* (land of robbers – the rebels were always associated with robbery acts as a fact of their history). On the other hand, many other stories link the existence of military in the area with criminal acts – mostly as the backing of criminals. For this reputation, until early 2000s Moncongloe was not a place to go to, especially after sunset.

The negative reputation of Moncongloe began to disappear or was forgotten when the area became part of the new metropolitan development plan of Mamminasata (an abbreviation of Makassar, Maros, Sungguminasa (Gowa) and Takalar).¹⁶² It was since

¹⁶² The Mamminasata Metropolitan plan is regulated by Presidential Decree No. 55 Year 2011 on The Spatial Planning of Mamminasata Metropolitan Area, and Gubernatorial Decree of South Sulawesi No. 16 Year 2007 on the Establishment of Mamminasata Metropolitan Development Coordination Board.

early 2000s, when the rumor on the Mamminasata plan started to spread and several locations including Moncongloe attracted the attention of land investors. The inclusion of Moncongloe in the land market became more intensive when infrastructure development projects started to take place in this area. The construction of the middle ring road connecting Makassar, Maros and Gowa that will bypass Moncongloe has become the main attraction for land investors and developers to invest in Moncongloe. In September 2011, Moncongloe is officially declared as a part of future satellite city of Makassar which will cover an area of 3,445 ha for approximately 300,000 inhabitants (see Table 7.1 on the areas distribution for Mamminasata Satellite City plan). This plan was stipulated in a MoU between South Sulawesi Province, Maros and Gowa Districts, and the Real Estate Indonesia of South Sulawesi on Mamminasata Satellite City Development. Two sub-districts of Maros (2,510 hectare): Mandai and Moncongloe and two sub-districts of Gowa (935 hectare): Patalassang and Parangloe are designed as the locations of this new satellite city.

Land prices in this area have increased significantly, where the 2011 price for 150 meter square (10 x15, a standard size of land parcel or *tanah kapling*) was Rp. 30 million (USD 3000) – a price which was used to be paid for a hectares of nonirrigated rice field in Moncongloe years before. The increased land price has created a new income boom for the farmers. Suddenly, amidst their poverty, their land asset became so valuable. Poor in income but rich in asset is a new reality for Moncongloe farmers.

This new development in Moncongloe is parallel with the analysis given by Persoon and Simarmata (2014) that the marginality of an area is never permanent. They point out that the changing of perspectives or new market opportunities may lead to a redefinition of marginal areas. They argue that the marginality of lands can be undone by a variety



Figure 6.3 A sign board stating that the land was not for sale in Moncongloe indicating the emerging of land conflicts in the area (Photo: Henky Widjaja, 2012)

of reasons. Interest in new land for cultivation of crops is at present a major cause of marginal lands conversion into productive lands. Furthermore, the development of new infrastructure (roads, railways, dams, and so forth), the opening of frontier areas for exploitation activities (especially mining), and the changing of political decisions on the status of certain areas (transforming isolated areas for transmigration locations and special economic zones) can lead to the integration of these isolated areas into the mainstream socio-economy activities because of increased accessibility and demographic changes.

It is noted that selling lands in Moncongloe is not only lucrative for the poor farmers, but also for those who are relatively wealthy. Army families, for example, also started to sell their lands through land brokers. My key informant, Daeng Ma'ja, who was a head of the neighborhood association unit (*Rukun Warga*) in Moncongloe Bulu Village and who used to be a community facilitator for PT JOP in Moncongloe said that he became a mediator for army families to sell their lands, and he also helped the interested buyers to persuade the families to sell their lands.

Most lands on the side of the village main road had been sold. Farmers sold their lands for wedding, children education, buying motorcycle, and so forth. My other informant, Daeng Naba, a village agro-products collector, sold 0.5 ha of his land for Rp. 250 million (USD 25,000). He used some of the money to help his cousin who wanted to join the army. He paid bribe money as of Rp. 30 million. Some farmers had sold their farming land and only have kept the land on which they have their houses. These farmers are now working as sharecroppers for the other farmers, sometimes even on their former lands currently owned by outsiders.

Land selling in Moncongloe becomes very easy because most lands have been certified. According to Daeng Ma'ja, since the government launched the National Land Certification Project (*Proyek Nasional Agraria / PRONA*), most land owners in Moncongloe used the opportunity to register their land ownership at the affordable costs. In 2010, another land certification program was provided, Public Service for Land Certification (*Layanan Rakyat Untuk Sertifikasi Tanah / LARASITA*). This program provides an innovative solution for land registration by establishing mobile services in rural areas.¹⁶³ According to BPS Maros (2011), there were 343 land ownership certificates issued in Moncongloe in 2010. Moncongloe was the first rank and followed by Mandai Sub-district (335) for the issuance of land ownership certificates - both areas are part of the future Mamminasata satellite city.

6.1.3 Last Phase of Agriculture

The transformation from rural to urban in Moncongloe signifies another phase of agrarian change in this area. First, it tells us very obviously that agriculture is no longer the future

¹⁶³ Moncongloe is one of the covered areas (<http://kab-maros.bpn.go.id/Propinsi/Sulawesi-Selatan/Kabupaten-Maros/Berita/Kegiatan-Larasita-Kantor-Pertanahan-Kab--Maros-di-.aspx> - accessed on 15 March 2012). For the description on Larasita, please see: <http://portaldaerah.bpn.go.id/Propinsi/Jawa-Tengah/Kabupaten-Banjarnegara/Artikel/LARASITA--KANTAH-KABUPATEN-BANJARNEGARA.aspx> - accessed on 15 March 2012.

Table 6.1 - Areas distribution for Mamminasata Satellite City Plan

| No. | Main functions | Total (ha) | Maros | Moncongloe (Maros) | Mandai (Maros) | Gowa | Pattalassang (Gowa) | Parangloe (Gowa) |
|-----|----------------------------|--------------|--------------|--------------------|----------------|------------|---------------------|------------------|
| 1 | Transportation, commercial | 979 | 154.6 | 154.6 | 0 | 824.3 | 824.3 | 0 |
| 2 | Trade & services | 667 | 650.3 | 650.3 | 0 | 16.7 | 16.7 | 0 |
| 3 | Green areas & sport center | 730 | 606.5 | 606.5 | 0 | 123.2 | 65.3 | 57.9 |
| 4 | Housing | 585 | 584.6 | 568.1 | 16.5 | 0 | 0 | 0 |
| 5 | Recreation | 825 | 817.1 | 680 | 137.1 | 8.2 | 0 | 8.2 |
| | Total | 3,786 | 2,813 | 2,660 | 154 | 972 | 906 | 66 |

Source: JICA-Mamminasata

in Moncongloe. Part of it is caused by the on-going transfer of land ownership and also the future change of land use. Another part is caused by the reality that being included in the urban expansion process has influenced the regeneration of farming in Moncongloe.

As an area located very close to the city that will soon be part of it, the temptation for the young generation to opt for non-farming employments is very strong. This is perpetuated by the reality of poor agriculture conditions in Moncongloe which by itself discourages the young generation to continue to focus on agriculture when opportunities to shift do exist. Many of the youngster find jobs in Makassar as daily laborers, such as at the Makassar Industrial Estates (*Kawasan Industri Makassar / KIMA*) or as construction workers. The increase in land prices in Moncongloe also provides an opportunity to the farmers to get money for their children education or to access formal employment, preferably as civil servant, police and military – by bribing using money from land selling. All of these can be understood as the strategies of the farmers to deal with their post-agriculture future related to the on-going transformation in their area.

Regarding the selling of land in Moncongloe, it is interesting to note that until the time of my fieldwork the land selling transactions have not caused a wave of migration into the area. This is because the new land owners bought the lands for both investment and speculation motives without intention to use the land immediately. In my interview with Daeng Ma'ja on this matter, he jokingly told me that as a head of RW, he now has some of the richest people of Makassar as his residents. In saying this, he refers to the upper class Indonesian Chinese of Makassar who are the most dominant buyers of lands in Moncongloe. However, he said that it seems none of them were going to live in Moncongloe in the near future.

The fact that land plots have been sold but not yet being used has provided opportunities for the previous land owners or other farmers to continue using the lands for agricultural purposes. The use of such idle lands can be given by the new land owners to the locals under certain commonly practiced arrangements. First, the sharecropping method where the locals are given access to use lands and will pay some amount of rent or simply share the produce at the agreed percentage. Second, the locals do not pay rent but they will

be responsible to pay the annual land tax and to guard the land. However, there are also conditions applied for the given permission, especially the restriction to use the lands for construction and the restriction to grow perennial plants.

The given permissions to use the land that has been sold amidst the peri-urbanization process somehow serve as a transition phase for the agricultural activities in Moncongloe before finally meet their ending. And in this phase, while access to land can be 'retained', freedom to decide on types of crops is no longer fully in the hand of farmers.

6.2 Farmers Experiences with *Jatropha Curcas* under PT JOP Plasma Scheme

Jatropha Curcas or *jara'* in Makassar language is not a new plant for the Moncongloe population. It has been used for generations as traditional medicines and torch fuel. In addition, some locals also plant *jatropha* in their front yard for its traditional function as spiritual fence to guard the house from evil spirits. While it has been traditionally used for many applications, *jatropha* was never commercially traded nor planted in a large-scale manner in Moncongloe until PT Jatro Oil Plantation (JOP) introduced the plant as a new potential cash crop and recruited local farmers as their plasma or outgrowers.

6.2.1 Why did Farmers in Moncongloe Cultivate *Jatropha*

In my research, I found three key reasons why farmers wanted to grow *jatropha*. First, farmers became motivated to grow *jatropha* because they were driven by overwhelming promises on the prospect of *jatropha*. *Jatropha* had been introduced as a promising commodity with a very clear market and steady or increasing prices following the rise of fossil fuel price. Farmers were persuaded with a dream to make South Sulawesi as 'the next Middle East', a rich biofuel producing province. They heard rumors that in other regencies some farmers succeeded to earn income from *jatropha* for the hajj pilgrimage trip to Mekkah. This situation was further exaggerated by the overwhelming information on the market price of *jatropha* seeds. Price information was varied and mostly over rated. This price bubble was not only because of the information manipulation by brokers, but also because of the sporadic seeds buying for research and demonstration purposes that bought seeds at premium prices up to Rp. 100,000 per kg. Many farmers were finally interested to grow *jatropha* with the expectation to be able to sell their harvest for premium prices.

The second reason was the decline of their incomes from their previous crops. I was informed by Ilham Gani, a former district plasma and nursery manager in Sidrap, Pinrang and Maros, about the shifting of many maize farmers in his areas to *jatropha* because of the overwhelming productivity and profit calculation of *jatropha* over maize. *Jatropha* was claimed for being able to produce seeds up to three kilogram per tree. The claimed figure was way higher than the productivity rate of maize, which requires around ten plats to produce one kilogram of grains. According to Ilham, even though the selling price

of jatropha seeds was only Rp. 500 to Rp. 1,100 per kg in comparison with Rp. 900 to Rp. 1,500 per kg for maize, jatropha was still more profitable and attractive for its high productivity claim. However, Ilham noted that the productivity claim was not proven to be correct since farmers never achieved the promised yields. Jatropha also required a lot of maintenance such as periodic pruning and weeding which is costly. Furthermore, both the harvest and post-harvest process were not easy.¹⁶⁴

The jatropha hype in South Sulawesi were took place at the same time as the fall of some key commodities, especially cacao due to the severe cacao pod borer and vascular-streak dieback diseases and the late tree regeneration problem.¹⁶⁵ Some jatropha investments, including PT JOP, used the downfall of cacao to introduce jatropha as a new cash crop potential to the cacao farmers. Jatropha was introduced with a claim on its comparative advantage, especially on its potential to yield from the first six months in comparison with cacao that requires two years for its first yield if the decision to replant cacao is selected. Dr. Nasruddin, the leader of PT JOP agronomy advisers, who is also a senior cacao consultant in South Sulawesi told me that he used his cacao network to promote jatropha for PT JOP. This included the promotion of jatropha prospects through his weekly radio show on rural issues and agribusiness at Radio Republik Indonesia in South Sulawesi. According to him,¹⁶⁶ many cacao farmers shifted to jatropha for their disappointment with their cacao problems. However, later on, the unproven potentials of jatropha and the existence of Gernas Program for cacao had encouraged many cacao farmers to replant their cacao garden.¹⁶⁷

The third reason for farmers to be interested in jatropha was because they considered the jatropha planting technology as very simple. Jatropha or 'jara' in local Makassar language is not a new crop for people in South Sulawesi. It has been grown since a long time ago with many traditional uses. The familiarity of farmers with this plant makes them to think that they can continue their traditional cultivation practice for jatropha under the introduced mass commercial cultivation scheme. For example, many farmers refused to clear their lands for jatropha. For them, growing various crops in one plot is a strategy of economic survival since every type of crop is a potential income source for them and thus growing only jatropha exclusively under a monocropping system will endanger their economy. In addition, farmers were also reluctant to apply the modern cultivation technique for jatropha because they considered the technique as expensive and to some extent it was a waste of money in comparison with their traditional practice in growing jatropha as a wild crop without special treatment. An example of this technology dispute is the farmers' opposition to propagate jatropha using seeds which will require them to use the expensive polybag, while they can easily propagate by using stem cuttings, as what they usually practice, without any necessity to use a polybag.

¹⁶⁴ Interview, 21 July 2011.

¹⁶⁵ South Sulawesi cacao sector experienced a serious downfall in early 2000s. A cacao revitalization program called National Movement on Cacao Rehabilitation (*Gerakan Nasional Rehabilitasi Tanaman Kakao or Gernas*) by government is implemented since 2008 to assist cacao farmers to revive their cacao gardens.

¹⁶⁶ Interview, 4 October 2011.

¹⁶⁷ Despite the existence of the Gernas Kakao Program, majority of cacao farmers in Luwu area and in West Sulawesi were reported to convert their cacao gardens to oilpalm gardens as a new green gold potential.

Their misunderstanding was further exaggerated by false information provided by company field staff and agronomy advisers on the actual cultivation technology. Jatropha was misleadingly described as a low cost but high yield crop, which to some extent confirmed or was similar with the common knowledge of farmers about this crop.¹⁶⁸ However, when farmers started planting jatropha, they started to realize that jatropha is basically similar with the other commercial crops which require inputs, such as fertilizers and pesticides and also labor for the crop maintenance and harvest. In addition to this, farmers were also experiencing disease and pest attacks which were beyond their anticipation. And at the end, they finally learned that their actual yields were far below the stated claim which led to greater disappointment towards jatropha.¹⁶⁹ Ironically, the limited knowledge on the good agricultural practices for jatropha was also a problem for company field staff and agronomy advisers. This problem was then becoming a disaster for farmers because they were used as a research testing laboratory. I was informed by farmers in Moncongloe that they were once instructed to prune their jatropha trees at the peak of the wet season by the agronomy advisers. By some farmers this instruction was opposed because they know rain water will damage the pruned branches and ultimately will kill the trees. However, the advisers insisted with their instruction which finally resulted in the death of many trees.

The bias and unanticipated actual experiences in jatropha production were not only causing problems for farmers. In my further research findings, I learned that the problems of low productivity and the inability to do an effective harvest had caused another unanticipated problem of seeds depreciation for seeds collectors. The low yields and inability to do effective harvest required collectors to store the harvested seeds for some periods of time until the amount was economically sufficient to be transported and sold to JOP. According to Haji Syamsu who was a plasma organizer in Maros District and also a seed collector for JOP, he had to wait for approximately three months to collect 5 bags of 100 kg seeds from farmers. During the waiting time, the collected seeds became drier and ultimately experienced weight depreciation of approximately ten percent.¹⁷⁰ The weight depreciation was not anticipated and recognized by the company especially in paying him for the delivered seeds. Therefore, to avoid financial loss, Haji Syamsu always paid farmers below the price determined by JOP (Interview, 31 July 2011).¹⁷¹

6.2.2 Cheating and Broken Contract

Moncongloe was the first location of PT Jatro Oil Plantation (PT JOP) commercial jatropha activities before they further expanded their coverage to the other sub-districts in Maros,

¹⁶⁸ In the traditional cultivation practice, jatropha was grown as wild plant without any maintenance in their yards or garden. Farmers claimed that even without maintenance, their jatropha trees always produced many fruits.

¹⁶⁹ Since many farmers immediately stopped their jatropha cultivation at the very early ages of one or two years when they encountered problems of marketing and disappointing prices - in addition to the reality that they never really harvest their yields, it makes the accurate data on actual productivity per hectares per year was never recorded.

¹⁷⁰ According to Haji Syamsu, the weight depreciation also causes the decrease of oil content potential of the seeds.

¹⁷¹ For his lower price, Haji Syamsu had to harvest and process the fruits by himself since farmers refused to collect the seeds for him at the offered price.



Figure 6.4 Villagers preparing polybags at PT JOP nursery in Moncongloe in 2008
(Source: PT JOP photos collection)

and later on to 14 additional districts in South Sulawesi. For the company, Moncongloe had a strategic position, not only for its status as the pioneer in their jatropha investment but also for its short distance to the Sultan Hasanuddin Airport and Makassar City which enable them to use Moncongloe as their favorite showcase site to their prospective investors.

By PT JOP, jatropha was promoted as a high yielding oil producing plant with high market demand and steadily increasing price following the rise of global and national fossil fuel price. It was claimed to have a potential productivity of 3 kg seeds per tree annually (approximately above 6 tons per hectares at planting ratio of 2500 trees per hectare) with an offered contract price of Rp. 1,000 per kilogram. For farmers in Moncongloe, this was a very lucrative income opportunity since many of them did not have regular income sources. Most farmers were relying on seasonal incomes from their crops, and they supplement their income from one crop with incomes from other crops and many of them also work as laborers and sharecroppers.

The offered opportunity by PT JOP became more interesting at that time since the company also established a nursery – which was their first nursery in South Sulawesi to produce seedlings not only for Moncongloe but also for other districts at that time – that created many employment opportunities for the local population. Many locals were recruited to work at the nursery for various positions, either as plasma organizers and

**SURAT PERNYATAAN
ISTRI/SUAMI PETANI PLASMA**

Yang bertanda tangan dibawah ini :

N a m a : Tuan/Ny.
No. K T P :
A l a m a t :

adalah ISTRI/SUAMI dari Petani Plasma:

N a m a : Tuan/Ny.
No. K T P :
A l a m a t :

pada Perkebunan Plasma yang dikelola oleh PT. Jatro Oil Plantation yang terletak di Kabupaten _____

Dengan ini menyatakan bahwa saya menyetujui SUAMI/ISTRI saya untuk menjadi petani plasma pada Perkebunan Plasma yang dikelola oleh PT. Jatro Oil Plantation yang terletak di Kabupaten _____, dan akan mengakui serta turut bertanggung-jawab atas adanya kewajiban-kewajiban SUAMI/ISTRI saya yang timbul sebagai Petani Plasma baik berupa Pembiayaan Bank dan/atau Pinjaman Talangan dari PT. Jatro Oil Plantation sebagaimana tertuang dalam perjanjian pinjam meminjam dan/atau jumlah lain sesuai catatan pembukuan bank, PT Jatro Oil Plantation, atau pihak lain yang ditunjuk oleh PT Jatro Oil Plantation dalam mengelola pembangunan dan pengembangan Kebun Petani Plasma.

Demikian Surat Pernyataan ini dibuat dengan sebenarnya.

 Yang Membuat Pernyataan

Figure 6.5 A supplementary sheet of the JOP outgrower contract template stipulating the agreement of the outgrower (both husband and wife) to participate in the scheme and to perform their obligation to pay back the received loans from the company (Photo: Henky Widjaja, 2011)

foremen (mostly local elites who were promised permanent status at PT JOP) or as casual laborers. In addition, some labor intensive activities such as seedling preparation in polybags were given to women and children, who were paid Rp. 50 per bag. Furthermore, the existence of a nursery also provided spillover effects to the locals who took the initiative to open kiosks and food outlets to serve the laborers. The positive experiences with the nursery made farmers believe the positive future of jatropha as a promising crop and also to expect further benefits from PT JOP by joining the plasma scheme.

Joining the plasma scheme, indeed was attractive for various facilities and 'easy to entry' conditions. In the plasma scheme of PT JOP, farmers were provided with a loan (*dana talangan*) which unfortunately was mistakenly translated in the daily language as 'incentives' - literally understood as 'free token'. There were two types of 'incentive' provided by PT JOP: 'cash incentives' (Rp. 200 for tree planting and Rp. 300 per tree for the first year maintenance) and 'in-kind incentives' (fertilizers, herbicides and basic farming tools). These incentives were in tandem with the distribution of 2500 seedlings per hectares plus technical assistance from the company. All these incentives have a value of approximately Rp. 3 million per hectare. As the main requirement for farmers to join the plasma scheme, they were asked to submit copies (not the original document) of their land certificates which were used as a basis to calculate the total seedlings and the amount of 'incentives' to be paid to them.¹⁷² The participation in the scheme was formalized in a contract for a period of 25 years.

The contract stipulated that farmers were obliged to plant *jatropha* in the agreed area – while the total area referred to the total amount of land mentioned in the submitted land certificate copies. Farmers were obliged to sell their *jatropha* harvest only to PT JOP at the predetermined contract prices. The payments of *dana talangan* would be deducted on the *jatropha* price paid by PT JOP. During the period of contract, farmers were not allowed to sell or transfer the ownership of their land without the permission of JOP and prior settlement of their loans.

The recruitment of plasma farmers was conducted by the plasma units established in every district, where JOP was represented by their plasma staff and assisted by local elites who were recruited as plasma organizers and facilitators. In Moncongloe, 271 farmers in 12 groups covering 209 hectares were recruited as the plasma farmers. Most of the farmers who joined the plasma scheme were not fully aware of the conditions and regulation mentioned above. In my research, I found that none of the plasma farmers were given their copies of contract. After they signed the contract letters, all copies were kept at the plasma office leaving them clueless about the content. In general, the experience of plasma farmers in Moncongloe illustrates the common stories of JOP plasma farmers in the other places.

Farmers were not aware, at the beginning, that they received 'incentives' were actually loans from the company since those incentives were distributed once they submitted their land certificate copies without signing the contract letters. According to Haji Syamsu, a former plasma organizer in Moncongloe, most farmers signed their contracts after they received their cash planting incentives and had planted the given seedlings. The signing took place months after they received the money or planted the seedlings. This happened because the plasma unit (not only in Moncongloe but also in the other JOP districts) was in hurry to distribute seedlings produced by the nursery in order to achieve the given target in recruiting plasma. The submitted land certificate copies were not verified properly,

¹⁷² 2,500 seedlings per hectares was used as the basic assumption in calculating the total incentives.

especially in clarifying the exact total areas to be planted with jatropha.¹⁷³ The plasma staff used the total land stated in the certificates as the basis in calculating the total number of distributed seedlings and incentives and simply ignored that the numbers were not representing the actual areas committed to jatropha.

The using of the land total to calculate incentives had provoked farmers to submit as many land certificate copies as possible in order to earn bigger incentives. Many of the submitted land certificate copies were apparently only land tax copies (*pajak bumi dan bangunan*), and the lands were not actually owned by the plasma farmers. They were only sharecroppers on these lands and legally they had no right to use the lands for any legal commitment with other parties without the consent of legal land owners. Some parts of these lands were lands that had been sold to land investors who were not yet using them and therefore entrusted the previous owners to use the lands for farming. PT JOP accepted the land tax copies as long as they were accompanied by the reference letters from the village heads confirming that the applicants were the sharecroppers of the lands. Since the arrangement between landowners and sharecroppers prohibits the cultivation of perennial plants, such as jatropha, and farmers had no legal rights to use the lands for contract application, they finally could not plant jatropha on that land although they had received the incentives.

However, even for those who used their own land certificate copies, many were apparently only interested in the incentives and did not have intention to grow the plant. I was informed by the former plasma staff that many farmers abandoned the distributed seedlings in hidden places or just simply planted them without any maintenance and care. In my interview with farmers, they claimed that the lack of labor was their main obstacle to plant and maintain the seedlings. The lack of labor happened because most farmers run their farm only with labor supply of their family members.

Before jatropha, there was no significant labor intensive crop in Moncongloe. Most of the crops planted in this area are short lived seasonal crops and tree crops with low maintenance, while usually only the adults do the farming activities. Jatropha, on the other hand, requires labor more than the other crops. Despite they were given initial cash as incentive to plant the seedlings, which they can use to hire labor if necessary, most of them apparently did not use the paid incentives for that purpose since hiring external labor would reduce their income from the incentive – daily labor wage was Rp. 30,000 – 40,000 which equals to incentives for 150-200 seedlings. In addition to this labor factor, it is very obvious that they were over supplied with seedlings due to the imbalance ratio between the distributed seedlings with their actual available lands for jatropha cultivation. As a result, only a small percentage of the distributed seedlings were really planted.

Farmers were angry with the company staff and the local organizers when they realized

¹⁷³ Land total in the submitted land certificate by an applicant may consist of land for house, paddy/corn field, productive home garden, and unproductive lands on the hill where some perennial crops are planted. There was no clear agreement on where jatropha will be planted by the applicant. In the realization, jatropha was mostly planted scattered on these lands.

that the 'incentives' were actually loans and the signed contract would bind them and their lands for the period of 25 years. They blamed these field operators for not telling the truth to them and they refused to obey the contract. Their main objection was about the use of their lands as 'collateral' for the loan. Farmers, whom I interviewed told me that the company had no reason to use their lands as collaterals since they were not informed about the condition. They only knew that their land certificates would be used to determine total seedlings and incentives paid to them, and the incentives were supposed to be the payment of their labor for planting the seedlings. Further, they said that their lands were far more valuable than the given incentives. The skyrocketing land prices in Moncongloe were obviously more valuable than the whole plasma package which was only around Rp. 3 million per hectare.

Despite their objections, none of the farmers was reported to have returned the received incentives. This was also the case for those who used absentee landlords' land tax copies and cannot use the lands for *jatropha* cultivation. While legally they had violated their contracts, none of the farmers expressed their concern on the legal risk of their acts. Those whom I interviewed said that PT JOP had a weak legal basis to enforce the contract since the company only had the certificate copies instead of the original ones. They even further blamed PT JOP for not fulfilling its promise to buy the harvest yields from farmers. PT JOP suddenly stopped their field activities in 2009, at the time when farmers in all districts started to harvest their yields. Farmers told me that in their understanding they were contracted to produce *jatropha* for PT JOP, but since PT JOP did not purchase their yields it meant that the contract was automatically ended.

The fact that many farmers breached the contract by discontinuing their *jatropha* production or even never planted the given seedlings, however, did not give authority to JOP to force them to repay their debt. This was because, after the second year JOP was not able to continue their operations, including to fulfill their obligation to buy the seed yields from farmers as regulated in the contract. This situation, then, provided a strong reason for farmers to neglect their obligation to PT JOP, leaving the company without collateral assets to compensate its losses. In my interview with Haji Syamsu, he told me that the only thing that binds the relationship between farmers and JOP was the purchase of seeds by the company. As long as the company still performs its obligation of buying seeds from farmers they have the right to ask farmers to plant *jatropha* as constituted in the plasma contract. However, since it was the company cannot meet its obligation, then farmers, including the unfaithful ones, were free from the contract (Interview, 31 July 2011).

About the unfaithful acts of many farmers who by intention breached the contract, I was informed by Ilham Gani that for farmers in general such an act was not new. Ilham said, 'It was not new for farmers to deal with this kind of issue. Most farmers in South Sulawesi have already had experiences with credit programs, especially the "Kredit Usaha Tani" (Agribusiness Credit Program) by Bank Rakyat Indonesia in 1998. The Kredit Usaha Tani also required farmers to submit their land document copies, but the bank was not able to confiscate the lands when farmers failed to return their debt. Such awareness is very common among farmers and they are ready to defend their lands against any

legal action'.¹⁷⁴ His information suggests that many farmers, based on their previous experiences with various credit programs, had developed a negative mentality in seeing credit money as a free token without any obligation to be returned, and such mentality has been shown in this case study.

In my research, I found that only few farmers that really planted the distributed seedlings on a massive scale on their lands. I was informed by the former plasma staff that only one fourth of the submitted land total was really planted with jatropha, although the company senior management claimed a higher figure of forty percent. However, most of them used their unproductive lands, especially lands on the hilly areas that are stony, dry, and traditionally used to grow trees, maize, and cassava or just simply left fallow. This type of land is not favorable for land investors since they mostly are located far from the village road. Very few gardens were located on the flat area. One location that still exist until my 2012 fieldwork belonged to the community organizer, Haji Syamsu. Haji Syamsu is not an original resident of Moncongloe. He is a land broker who owns several parcels of land in Moncongloe. As a community organizer he used his lands to set up a model garden to attract plasma farmers. According to him, his jatropha garden was also used by JOP as a showcase location for their potential investors. At the time of my fieldwork, his garden was already in a poor condition. The jatropha trees were left unmaintained and some parts of the plot had been used to grow cassava. While for gardens on the hilly areas, all of them had been cleared by farmers who were frustrated with the uncertainty of the plant prospect. Some were just cleared in 2011 after being abandoned since 2009. The interviewed farmers were complaining about their income losses for replacing their previous crops with jatropha, and also for the opportunity costs that they encountered for wasting their time and land use potential (see Box 6.1 Marten's Opportunity Cost Story).

The sudden withdrawal of JOP from their field activities had caused disappointment among their plasma farmers, especially since it happened when most of the planted jatropha trees had started to yield.¹⁷⁵ The absence of JOP to purchase the yields made it difficult for the farmers to find alternative buyers who could offer the same purchasing price. Farmers told me that they were approached by some buyers who offered them prices below Rp. 1,000 per kg seeds. The offered prices were considered too low, especially after they realized that the costs of harvesting and post-harvesting were high. Some farmers were asking for Rp. 1,500 per kg seeds as the lowest economical price for their jatropha. I was told that some farmers finally sold their jatropha for Rp. 500 per kg seeds minus harvesting. Buyers were asked to harvest and process the seeds by themselves. One of the buyers was Haji Syamsu who purchased the seeds and later on sold them to JOP.¹⁷⁶

¹⁷⁴ Interview, 21 July 2011.

¹⁷⁵ There was no accurate data on the actual production at that time, because farmers did not record the actual productivity since they never really harvested the yields due to of the absence of purchasing by JOP.

¹⁷⁶ Despite the field activities were stopped in 2009, JOP continued to operate until February 2011. Seeds collection through middlemen, such as Haji Syamsu was part of their final activities. There was no clear information on the objective of seeds collection, but they were possibly traded as seeds to the other jatropha investors.

6.1 - Marten's Opportunity Cost Story

Marten is a Christian Torajan who has lived in Moncongloe since 1968. He inherited the land from his father who was a military police. His farm land is located on the hill far from his house where he grows cassava, maize, vegetables, banana, mango and jatropha. In the same location, he also raises pigs and has a small stable for the pigs. Marten was one of the few strong believers of the jatropha prospect in Moncongloe. He was the second biggest jatropha grower. He claimed that he planted five hectares of his land with jatropha. Marten said that he was interested because he was informed that the seeds were used as fuel alternative and that they had a prospective market. When he decided to participate, he replaced his cassava with jatropha. At the beginning of the cultivation, he even hired labors to help him to plant and maintain the plants. He said that he followed the recommended planting practices, including the 2x2 m planting space, fertilizer application (in addition to the provided fertilizers, he also added manure), and frequent weeding using the provided herbicide.

At that time, he was expecting that the yield and income from jatropha would be sustainable. He said that even though the price was Rp. 500 per kg as long as it was sustainable at least his income would be certain. He claimed that his concern was to earn income for his children. If the land can be productive, his children will have a productive activity to do daily. Moreover, he said that the harvest was not difficult and suitable for children. His confidence and expectation were very big because both the company staff and community organizer said to him that he would not regret to plant jatropha. However, when the plants started to produce he could not sell the yields. No one from JOP came to his place to collect and buy the seeds.

Disappointed with his experience, Marten cut down his jatropha trees in 2010 after waiting for a year. He replanted the area with cassava and banana. At the time of interview (July 2011), he told me about his plan to plant beechwood trees (white teak / jati putih). He showed me 10 kg of beechwood seeds that he bought for Rp. 25,000 per kilo. He said that a friend of him planted beechwood trees five years ago. A buyer had offered his friend Rp. 175 million for one hectares of mature beechwood trees (approximately 1,000 trees per hectare). The price was still on negotiation because his friend was asking Rp. 200 million. Marten said that if only he also planted beechwood instead of jatropha five years ago, he would be very rich now.

Marten said that he was traumatized with his jatropha experience. Thinking about the opportunity cost would only make him stressed. The plant really has no use for him. Even the wood cannot be used for firewood because of the succulent characteristics of the plant (wet and easy to rot). He said that jara' (jatropha) makes him jarra (traumatized). Marten said that his experience with jatropha was similar with the experience of clove farmers who replaced their clove trees with vanilla because they were dreaming to gain a fortune. Both ended with big losses.

Disappointed with the sudden withdrawal of JOP and the absence of alternative buyers made farmers to cut down their jatropha trees. Most of them were taken place immediately but some farmers decided to keep their trees, as part of their speculation for the possible future revival. However, since the trees were left unmaintained many were killed by parasite plants or diseases. Finally the fields were all totally cleared to provide spaces for cassava, a traditional crop with a new prospect.

6.3 Cassava in Moncongloe

During my first visit to Moncongloe in 2011, while looking for active jatropha gardens (or the remaining), all I could see along the roadside were the lines of small plots planted with cassava. The place where I had my first interview with the former plasma farmers of JOP was a traditional stage house ('rumah panggung') where a group of women were peeling and chopping fresh cassava in front of the house, while a bulk of fresh cassava chips was sun dried next to them. Cassava started to become a topic in our interviews when I asked farmers about the post jatropha activities in the Moncongloe.

Farmers told me that they immediately shifted to cassava when they realized that jatropha had no clear future. Cassava was selected to replace jatropha because of its existing high market demand and increasing prices. Cassava has been traditionally cultivated by most farmers in Moncongloe for its drought tolerance and low maintenance characteristics as their subsistence and commercial crop. In the past, cassava was sold to the nearest local fresh markets and to the local tapioca flour industries through the village collectors at very low prices making it not a significant income source for farmers. At present time, the farm gate prices of cassava have increased, from Rp. 100 – 200 per kg to Rp. 300 – 400 per kg for fresh cassava. The increased price is fostered by the existence of a high demand from the growing number of cassava processing industries in South Sulawesi.

Since 2007, South Sulawesi has become an investment destination of big scale cassava processors, both domestic and foreign – mostly South Korean investors.¹⁷⁷ By the investors, the processing of cassava is intended to produce cassava flour, cassava chips and bio-ethanol (See Box 6.2 Bio-ethanol On Hold). The final products of the industries are meant for the export market, where they are further processed as materials or ingredients of highly valuable products.

The increasing number of cassava processing industries has improved the economy of cassava in South Sulawesi, especially because they are competing with each other to obtain their raw materials from farmers. Big scale companies, such as EN3 adopt three types of supply strategies: own plantation, contract farming and open market. Establishing one's own plantation is conducted through land leasing,¹⁷⁸ land purchasing and joint cooperation As an

¹⁷⁷ In 2010, there was 25,010 hectares of cassava planted area in South Sulawesi with productivity of 601,437 tons (BPS Sulawesi Selatan 2011).

¹⁷⁸ The leasing price was approximately Rp. 1 million per hectares for 5 years duration (EN3 price data).

example, at the time of the research EN3 was in the process of negotiation with PTPN XIV, a cassava specialist state-owned plantation company in Enrekang District to make use of their available land to grow the improved cassava variety – Adira 4 for EN3 supply. Establishing a plantation is attractive and more preferable if the area is large (*hamparan*) making it more efficient for the mechanical operation (land preparation, planting to harvesting) in comparison with working with smallholders whose lands are scattered.

The option for contract farming is also popular, but it requires significant capital since a company has to provide contract farmers with initial working capital, ranging from cash, fertilizers to seeds as well as technical assistance. According to the experience of EN3 in managing contract farmers, the system is risky because of the relatively high moral hazard of farmers in the contract implementation. The company representative told me that there were still many contract farmers who prefer to sell their harvest to other buyers for higher prices even though they are under contract. The most dominant system that is adopted by all processing companies is the open market supply system in which companies source their cassava from farmers with the help of village collectors. The main challenge for companies in the open market system is to ensure the optimizing of production by farmers.

6.2 - Bio-ethanol On Hold

PT EN3 Green Energy (EN3 is an abbreviation of Environment, Energy and Engineering) is a foreign direct investment company from South Korea and also a subsidiary of EN3 Co, Ltd. It was established in 2007 in South Sulawesi. EN3 has two Integrated Post Harvest Processing Units (IPPU) – in Gowa and Takalar for the production of bio-ethanol, cassava flour and cassava chips. At present, EN3 is the largest cassava processing company in South Sulawesi.

While EN3 has a license for bio-ethanol production (issued by the Ministry of Mining and Energy in 2008) and a MoU with PT Pertamina for the selling of bio-ethanol to PT Elnusa Petrofin, until now it has not produced any bio-ethanol yet. According to Poppy Dwijayanti, company representative (interviewed in July 2012), the reason was because of the insufficient current supply of cassava for sustainable bio-ethanol production. She said that it would require a minimum 10,000 ton of cassava annually to run an efficient bio-ethanol factory. The current annual supply is around 5000 ton (2011 company data). The supply is relative low since the total supply to three main cassava factories in South Sulawesi (including EN3) in 2011 was around 10,000 tons. EN3 has to compete with many competitors, including local, national and international buyers. Poppy said that cassava industries in Java also obtain their raw materials from South Sulawesi. In addition, she suggested that there are other Korean investors awaiting for a permit to operate in South Sulawesi. Considering this current supply state, EN3 decided to focus on cassava flour and chips production only. These products are exported to Japan and South Korea as materials for food, textile, and chemical industries.



Figure 6.6 Villagers drying cassava chips in Moncongloe (Photo: Henky Widjaja, 2012)



Figure 6.7 A mini truck loaded with fresh cassava in Moncongloe (Photo: Henky Widjaja, 2012)

Cassava in general is still cultivated not as a priority crop. It is not cultivated on productive lands, rather it is a crop for unproductive and marginal lands with very limited inputs of fertilizers, chemicals and maintenance. Very common, cassava is intercropped with other crops, such as vegetables and tree crops. Cassava is not a priority crop because it takes longer period before can be harvested (six to eight months) in comparison with rice (four months), maize and legumes (three to four months). For many farmers, cassava is more considered as a reserve crop for food and income similar with their perennial crops.

Even in many of highly potential areas, cassava still receives limited attention from the government and is not a target of government input subsidies. In my interview with a government fertilizer supplier (September 2012), it was suggested that cassava was not a priority crop for government input subsidies in comparison with rice and dry season crops (*palawija*, such as maize and soya bean) because it does not present significant problems, such as diseases and pests for attention (the common pest is the wild pigs) that necessary for government intervention, nor potential for better results if inputs are provided based on the cost benefit ratio since the economic value of cassava in general is still low.

In order to make cassava attractive for farmers and to increase their productivity, companies apply two key strategies: firstly, companies offer competitive prices and purchase agreements to collectors and farmers; and secondly, they introduce improved cassava varieties to farmers, both directly and through the mediation of research institutes (Indonesian Legumes and Tuber Crops Research Institute / BALITKABI), and district governments (agricultural services).

6.3.1 Resources and Business Model for Cassava in Moncongloe

Moncongloe has the biggest cassava area among the 14 sub-districts in Maros District. The total harvested area in 2010 was 904 hectares of 2,117 hectares in Maros District (BPS Maros 2011). Cassava in Moncongloe is planted in many places. Small plots with less than 100 trees can be found in the front and back yard of houses. Bigger plots are mostly located on the hills where cassava is planted on unproductive lands mixed with perennial trees. Farmers plant cassava not only on their lands, but also on public lands – such as along the river banks and on absentee landlords' lands with permission or on the basis of a sharecropping agreement.

The small plots along the road side are mostly planted on the absentee landlords' lands. These are the land parcels belonging to land investors that are left idle. Some of the plots were fenced, but many were only bordered using the concrete foundation lines. They are currently operated by their former owners – the farmers whose houses are located next or behind these lands. Farmers use these lands for free, but some are required to pay the land tax. They are entrusted to guard the lands with the right to use the lands for their farming activities. Strict rule is applied in the land use, where they are only allowed to plant seasonal crops, such as vegetables, maize and cassava. Perennial crops are prohibited. On many parcels, there are fruit trees such as mango and jackfruit. However, they are old trees that were already there when the lands were sold. The operators were



Figure 6.8 Workers peeling cassava in Moncongloe (Photo: Henky Widjaja, 2012)

allowed to harvest and sell the fruits – with some are delivered to the owners, but they are not allowed to plant new trees as well as to cut down the existing trees because the trees are considered as assets by the new owners.

Farmers sell their cassava to village collectors who play an important role in rural commodities. They bring information on new opportunities – what the market wants and price updates - and also become the source of working capital and market guarantor for the introduced commodities. While cassava is not a new crop, farmers told me that they became serious in cultivating cassava after they received information and guarantees from village collectors, such as Daeng Naba (see Box 6.3 Cassava Economy of Village Collector). Some farmers prefer to sell their cassava before the harvest to save the costs of harvesting, which is a very common practice also for their other crops. Besides selling their cassava fresh to collectors, many farmers also process their cassava (peeled, chopped and dried with 3 : 1 ratio) to become dried cassava chips that can be sold for a higher price of Rp. 800- 1,200 per kilogram to the village collectors.

Farmers grow various varieties of cassava. While the dominant variety is the traditional edible cassava, farmers have also grown industrial varieties – improved hybrid varieties such as Adira and *Gajah*.¹⁷⁹ They received the information and seedlings from collectors

¹⁷⁹ A new improved cassava variety developed by a cassava researcher, Prof. Dr. Ristono, MS in East Kalimantan. This variety is edible but also suitable for industrial use for its high starch content. The claimed productivity is up to 100 tons per hectares in compare to 12 tons of traditional varieties (Source: <http://cybex.deptan.go.id/lokalita/budidaya-singkong-gajah> - accessed on 3 September 2012).

and government extension officers. For the *Gajah* variety, Moncongloe has become a model location for the development of this variety since October 2011. A South Korean company, PT Singkoang established a cooperation with the Maros Government to promote this variety.¹⁸⁰ Despite the fact that this variety is supposed to have a very high yield, some farmers that I interviewed said that they encountered problems with the increased input costs required for this variety. Different from the traditional varieties that 'require' only very basic input (urea or even no input at all), the *Gajah* variety is input intensive. Farmers told me that the variety was introduced together with a list of fertilizers and chemicals that have to be purchased. While they were interested and some have tried to plant this variety, they did not fully follow the standard instruction on input application since the costs are considered high. Aside from the requirement to apply inputs, such as fertilizers and chemicals, the cultivation of these improved hybrid varieties also created additional labor costs, especially for the harvesting due to the extra size of the cassava. The farmers did not receive any assistance from the company or the government to address this problem. Farmers were only promised that their yields will be purchased by the company. However, farmers told me their concern about the possibility that the farm gate prices will fall at the time when the supply of cassava is abundant which would make their input investment to be ineffective.

Village collectors, such as Daeng Naba, when interviewed were still very optimistic with the prospect of cassava because his buyers were competing to offer him with good prices. He said that farmers were now enjoying the best prices ever for their cassava. However, he also noticed that the cultivation of cassava varieties such as *Adira* and *Gajah* was more suitable for the large industrial scale cultivation. The traditional cassava cultivation practices and farmers' perspective on cassava as non-priority crop were the biggest challenge for these varieties (Interview May 2012).

6.3 - Cassava Economy of Village Collector

According to Daeng Naba, he delivers approximately seven tons of cassava everyday to any of the three Korean cassava processing plants in Gowa that have become his regular buyers. The selling price is Rp. 500-700 per kg of unprocessed fresh cassava and Rp. 1500-2000 per kg of dried cassava chips. Every day, he checks the price in the three buyers by phone before he delivers his cassava. He supplies his cassava from his own garden and also from farmers. Usually farmers sell cassava to him before the harvest time for Rp. 5 million per ha. Cassava is planted for 8 months before being harvested. With the pre-harvest selling price of Rp. 5 million, a farmer only receives a maximum Rp. 600 thousand per month. He hires laborers to do the harvest (four laborers per hectare, Rp. 75-100 per kg). Naba paid Rp. 500 thousand per truck of 7 tons capacity or Rp. 300 thousand per small truck to transport the harvested cassava. Naba also provides credit for seeds and agro-inputs to farmers under purchasing contract. About his Korean cassava buyers, he said that he had no fixed purchase contract with them. They also do not provide any credit or assistance to farmers (interview July 2011).

¹⁸⁰ See 'Singkong Maros Akan Dibeli Perusahaan Korea', available at <http://makassar.tribunnews.com/2011/10/27/singkong-maros-akan-dibeli-perusahaan-korea> (accessed on 12 May 2012).

The growing prospect and motivation to cultivate cassava, however raise questions on the future and sustainability of this crop (and also the rest of agriculture) in Moncongloe. This positive development is parallel with the unstoppable transformation of Moncongloe from a rural to urban area. By looking at the condition where many cassava plots are located on lands that have been purchased by outsiders for future non-farming purposes, and the land transfer itself is still continuing, one will ask for how long that access to lands will be available for cassava cultivation? However, from a realistic point of view, cassava should be seen as the most suitable cash crop for this situation. Cassava's character as a short lived crop has made it compatible with the condition of land use in Moncongloe.

6.4 Commercial and Non-Commercial Intermediaries in Moncongloe Biofuel Stories

In my field research, as part of my ethnographic observation, I conducted the actors analysis on the patron-client pattern in relation to the role of middlemen or brokers in the supply chain of jatropha and cassava. The focus on the intermediary actors is based on the observation that they are some kind of patrons who serve as gatekeepers between companies and their constituents. More commonly, they are known as *tokoh masyarakat*, or community leader. These are people with roots in the community, who possess intimate connections to local communities, networks and neighborhoods. Sometimes, *tokoh masyarakat* are leaders of village cooperatives, communal savings groups, farmers' groups, or other formal organizations at the village level (Aspinall 2014: 554). Their role is essential in determining the success of companies in accessing resources and ensuring farmers participation.

The importance of patronage in this intermediary role has been mentioned and discussed in many books and articles. Peluso and Ribot in their article on 'A Theory of Access' coin that access to resources via social relations of friendship, trust, reciprocity, patronage, dependence and obligation are critically central in access webs (Peluso and Ribot 2003: 172). An example of this can be seen in the contract farming practices, where informal ties - constructed relations of trust patronage, and traditional reciprocities - are used by companies to enforce contracts and ensure grower loyalty especially when legal and property rights are difficult to control (Baumann 2005: 15).

In analyzing the intermediary role of patrons, I distinguish the intermediary patrons into two types: commercial and non-commercial intermediaries. Commercial intermediaries are those with reliability and competence in commercial activities and linked to their constituents through related commercial activities, such as village level collectors/ middlemen and senior farmers. Non-commercial intermediaries, on the other hand, are those who have no previous experience in relevant commercial activities but they have social and political influence on their constituents. They are usually people who have worked either in *proyek* (development projects), in NGOs, or in election committees in the villages. These are the previous experiences that they can use as a base for building a network.

The strong influence and control of patrons over their people and resources have been the main reason for outsiders to link with them for their specific interests, especially in ensuring access to the targeted resources, including by companies to integrate them as part of the supply chain, either in their role as leaders or as intermediate traders. It is noted that the modern value chain has risks to undermine the existing traditional business models, such as the role of traditional middlemen in the value chain. While their role is recognized to be highly significant in bridging the producers and markets, the role of middlemen in many modern business models has been associated with inefficiencies (Olsson et al. 2013) and often regarded as negative layers between the farmers and the markets urging the necessity 'to cut out the middlemen' (Masters 2008: 73).

Despite the existence of many minor opinions on their roles and functions, the debates on the position of middlemen in the modern business models are not yet concluded. Different views still see the prospect for middlemen to exist in the modern business models. Olsson *et al.* (2013: 1131) suggest that many traditional middlemen have overcome the challenges by adapting their roles in ways that make it possible to claim that they appear as 'new intermediaries.' Some recent studies, such as by Kusumawati *et al.* (2013: 901) on the central position of *punggawa* (a traditional middlemen in fishery among the Bugis community) in the fishery value chain shows that the *punggawa* do not only control the vertical flows of commodity and finances but also effectively function in determining the conditions under which production and trade are taken place.

Other scholars in their supports to the traditional middlemen point out the traditional reciprocity ties between the middlemen and the farmers as the core reason not to undermine their roles and functions (Crona *et al.* 2010). Even though traditional middlemen, which are closely associated with the patron-client relationship in economic activities, is often labeled as a system of exploitation of the poor by the mighty rich, they also contribute in smoothing economic differences where the poor have access to working capital and to social security provided by their patrons at the event of uncertainties, such as crop failure (Pelras 2000). The solid bond builds on traditional *adat* (customary) and religious values as well as social and economic dependency of clients toward their patrons – which is exaggerated by the absence of state in providing better protection (Timmer 2010a and 2010b) - explains why even in a very bad individual condition, clients tend to be still loyal to their patrons.

The case of jatropha and cassava in Moncongloe, as I have presented in this chapter, shows how JOP adopted exclusively non-commercial patronage system, consisting mostly of local elites, in intermediating their relationship with plasma farmers. On the other hand, cassava companies used the intermediary services of the village collectors who supply them through the open market system and who are significantly influential in motivating farmers to cultivate cassava.

The results of each strategy, however, were very different. The story of JOP as presented in this chapter shows the chaotic implementation of their plasma scheme for their full reliance on the mediation of village elites. In the story of the cassava company, EN3 also

experienced a disappointing result when they relied on the support of the elites (see Box 6.4 Cheating Elites in EN3 Experience). Although it did not happen in Moncongloe but it reflects the fragility of reliance on elites. On the other hand, the partnership with village collectors is proven to be more effective. Their relation is purely commercial, where village collectors are engaged using attractive prices and incentives for cassava that they delivered. Attractive prices and incentives, in turn motivate collectors to deliver positive information and to invest by providing loans to their farmers to improve their production, both in terms of quantity and quality as desired by the company.

6.4.1 Personal Quality in Patrons Stories

According to Pelras (2000), the patronage system in South Sulawesi has a very strong root in the social system that are characterized by reciprocity acts resembling positive *adat* and religious values (Pelras 2000). These characteristics are crucial for patrons to obtain and retain their followers, and any patron can lose their followers when they fail to meet these characteristics.

In interviews with farmers on their perceptions towards the patron figures in the cases of jatropha and cassava, I found that perception over personal quality is a crucial factor influencing farmers' loyalty and trust towards the patron figures. Farmers that I interviewed used to be PT JOP plasma farmers under the intermediation of Haji Syamsu and Daeng Ma'ja before they shifted to become Daeng Naba's cassava farmers.

When interviewed about their experiences as the plasma farmers of PT JOP, they told me that actually since the beginning they were little optimistic about the prospect of jatropha. Aside from the fact that commercial jatropha cultivation was new to them, they were not fully convinced because the introduction was very similar with the previous unsustainable projects in their locations. The similarities, especially in terms of the use of similar elites in promoting jatropha as in the previous projects were striking. One farmer said, 'We know who Daeng Ma'ja is. He always comes to us with his "projects" that never sustainable. So how can we expect jatropha will be success? We only learned from him that PT JOP will

6.4 - Cheating Elites in EN3 Experience

The EN3 representative, Poppy, told me about the negative experience of EN3 in trusting local figures in socializing and promoting their company. She said that in the first years of its operation, EN3 used assistances of local elites, such as sub-district heads (*camat*), village heads and other figures to introduce EN3 to the community. Many of them were provided with cash to recruit farmers. However, apparently, there were many cases where the money was not used for farmers recruitment but for other uses, including political campaigns since some were running for local member parliament positions. EN3 realized this when they found that the number of participants in those areas was remained low despite the fact that money had been spent for their recruitment.

pay incentives to those who participate just like in his other projects. And that was our main reason to participate.'

Another farmer commented about Haji Syamsu, 'He is an outsider. His presence in Moncongloe is because of his profession as a land broker. He came to us introducing jatropa but the business was not his own. So, why should we trust his promise on the jatropa prospect?' Other farmers told me explicitly that they think Haji Syamsu benefited a lot from intermediating PT JOP with farmers. One farmer said that he believed Haji Syamsu manipulated part of the incentives that were supposed to be paid to the farmers. Another one said that he was a cheater because he offered a lower price to farmers' yields compared to the agreed price with PT JOP.

On the other hand, when they were asked about Daeng Naba, a local trader, they provided different statements. One farmer said that he trusted Daeng Naba when he asked them to cultivate more cassava because he was open about the market price. Another farmer said that he trusted Daeng Naba because he was a good trader and he paid good prices. Another one said that Daeng Naba can be trusted because he lends his own money to farmers to plant cassava.

The above farmers' statements suggest that farmers have their own perceptions on each patron figure based on their experiences and knowledge on the figures that shaped their moral economy in terms of their responses and attitudes towards the figures and ultimately the projects in which they participated. In the case of jatropa, although actually farmers had already had a negative perception on figures such as Haji Syamsu and Daeng Ma'ja based on their personal experiences, they were still willing to participate in the jatropa project. Their participation was certainly not as a form of their loyalty or solidarity but to pursue benefits from the offered incentives with no moral obligation to the two figures because they believed that the two also gained from their roles. While for the case of cassava, farmers demonstrated loyalty and commitment for the positive personality they perceived on Daeng Naba and the existence of mutual benefits between them.

These two different results serve as an illustration of the analysis of Edward Aspinall on the two types of brokerage. Aspinall (2013: 569) points out that the definition of brokerage does not necessarily always involve the clientelism characteristics - contingency or reciprocity, hierarchy that emphasizes the unequal power relations between the patron and the client, and iteration, implying that the clientelistic exchange is never one-off but part of an on-going relationship. Some brokers might tend to be more tightly bound to their followers by way of personal, face-to-face, and especially, iterative relations. However, some brokers also tend to be opportunistic, less interested in long-term relationships and act in ways that do not seem very clientelistic and thus more unconstrained in pursuing their immediate interests. The first type of brokerage is clearly demonstrated in the traditional form of patron-client relationship of the village collectors and the farmers – where the village collectors still maintain the expected good personality and reciprocity towards the farmers. While the latter is illustrated in the relationship between the jatropa intermediaries and the farmers, which was built mostly on the

instant direct benefits pursued by both the patron and the followers. These two types of brokerage covered the same group of farmers as their clients who made decisions about the level of loyalty that they dedicated to each broker.

6.5 Conclusion

Throughout this chapter, I have presented a comparison between *jatropha curcas* and cassava – two biofuel potential crops – with the specific contexts of Moncongloe as the central background. The on-going process of peri-urbanization in Moncongloe has become an important limiting factor in farmers' decision making process in selecting crops to cultivate and also in committing to certain business models. The rapid land selling has affected the availability of land resource for farmers to cultivate. Although until now farmers are still allowed to use the plots of land that they have sold for farming activities, however, the freedom to determine types of crop is already very limited. Furthermore, the rise of land prices has made farmers to be very concerned about securing their land rights and very cautious in entering any legal commitment with other parties. These limitations, therefore, explain why neither *jatropha* – which is a perennial crop – nor the long-term plasma contract as adopted by JOP in their *jatropha* venture, was suitable for implementation in Moncongloe.

The presented case study on PT JOP investment in Moncongloe, besides confirming that problems of low price, market absence and unproven claims that were the central problems in *jatropha* failure, also shows two other substantial problems in the current commercial *jatropha* production. First, the case study proves that the selection of the outgrower model to be problematic in ensuring the sustainable raw materials supply. Lessons from the PT JOP case study suggest the difficulties in ensuring lands for *jatropha* cultivation in the plasma scheme. False data by both farmers and field staff occurred due to careless plasma recruitment that ignored the actual land use and access of farmers. Meanwhile, the risk of farmers' moral hazard – which unfortunately is very common nowadays due to their spoiling experiences with various previous programs – appears to be a main challenge in the outgrower model implementation.

However, the explanation of the PT JOP failure and also the success of massive cassava cultivation is not only limited to this 'rather technical' factor. The analysis on intermediary actors, as presented in this chapter, shows how the human factor as in the patron-client relationship of the intermediary actors was very significant towards the success as well as the failure in the case studies. The analysis shows that the perceptions of farmers towards the personal quality of intermediary actors determine their response and attitude towards the introduced opportunities.

The involvement of local elites as intermediaries in the operational of venture, such as PT JOP has proven to be negative for the company operational. As what has been shown in the case study, this strategy had created layers hampering the communication and transparency between PT JOP and its farmers, and also created dependency of the

company on their roles. To some extent, the involvement of local elites also explains the existence of farmers' negative mentality. Findings in the case study as well as the lessons from many failed development programs suggest that farmers' moral hazard is strongly perpetuated by the influence and manipulation of their elites.¹⁸¹

It is concluded from the analysis of the case of PT JOP that the selected patronage network failed to ensure access to land and the participation of outgrowers in this jatropha project. During the interviews some outgrowers told me that right from the beginning they had not been optimistic about jatropha. Aside from the fact that commercial jatropha cultivation was new to them, they were not fully convinced because its introduction was very similar to that of previous unsustainable projects in their locations, especially given the prominent role of the same elites. Another outgrower regarded his patron as an outsider who was only acting as an intermediary between PT JOP and the outgrowers for a commission and was not trustworthy. Against this background, their participation was certainly not due to loyalty towards the patrons, but rather, based on a desire to pursue benefits from the incentives offered. They perceived no moral obligation to the patrons, whom they believed also profited from their roles.

On the other hand, a different conclusion was drawn in the analysis of the interactions between the farmers and the village collectors in the case of cassava. The farmers see the village collectors not merely as intermediaries of the cassava company, but also as resembling the personal quality standard of the traditional patron-client system, where trust and a reciprocal relationship are the main foundation. It is very common for village collectors to not only buy products from farmers, but also become a source of credit, either for productive activities or merely for daily subsistence needs, thus creating a social bond. This bond allows them to act as the farmers' patrons, gaining loyalty and trust in return for the assistance they provide.

Lastly, in the comparison between jatropha and cassava presented in this chapter, I have also shown that the factor of alternative and competitive market contributes significantly to farmers' crop selection decision. The absence of an alternative market for jatropha in terms of alternative buyers for the seeds had caused none of the jatropha growers was interested to continue the cultivation after JOP suddenly stopped their operation. This is significantly different from cassava, where there are many market alternatives (local food markets and industrial markets) and buyer options that offer competitive prices to farmers.

¹⁸¹ See for example SMERU 2002 on KUT (*Kredit Usaha Tani* or Farmer Credit Program) corruption by farmers and NGOs.