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Plantation and Peasant Economy in Java, Indonesia: A Comparative Perspective on Western and Indigenous Enterprise in Jember and Mangkunegaran during the Colonial Period

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Abstract

This study compares the development of plantation production systems and their impacts on the peasant economy in two different regions of Java Island, Mangkunegaran principality and Javanese frontier region of Jember. These regions demonstrated an interesting case to examine because of the existing differences among them, not only in the context of the plantation production systems operated, but also in the context of comparative perspective on western and indigenous plantation enterprises. Drawing upon primary and secondary historical sources, the article seeks to elaborate the development of plantations in Mangkunegaran and Jember regions in meeting the requirements of land and labour, and to examine their impacts on the food crops production. It is argued that the impact of the plantation production systems on the peasant economy was not homogenous across the regions. Their impact either good or bad would depend on the context in which they operated, the type of commodity developed, and the nature of capitalisms set in place.

Much academic attention has been paid to the plantation sector in Indonesia both during the colonial and the independence periods. This is due to the fact that plantation sector was and is still one of the major contributors to the Indonesian economy. The importance of plantation economy began to increase remarkably with the establishment of the state-managed plantations under the so-called Cultivation System (1830-1870). A shift in the colonial policy towards liberalism in around 1870 marked the declining role of the state in plantation business and the new

era of private plantations. The plantation sector has often been seen as the foundation of the colonial economy. But from the national point of view, it represented the colonial exploitation.

A series of debates on how the plantations impacted on the indigenous economy has long taken place. One view has emphasized the adverse impact of plantations on the welfare of the indigenous people. Van Soest (1869-1871), for example, argued that instead of bringing prosperity, the plantations brought to the indigenous population to

misery. Java changed from an enchanting island into an island featuring miserable stories (Elson, 1988). The plantations brought prosperity, but at the expenses of the indigenous people (O'Malley, 1988). Van Hoeyvell (1849-1851) saw them as creating a paradox. On the one side, the plantations produced an average wealth of around 40 million guilders [USD 23.4 million] annually for the colonial government. But on the other side, the indigenous people were not even able to meet their daily needs (Elson, 1988).

A number of studies continued to voice strong criticisms on the colonial plantations. Hüsken (1996) maintained that sugarcane plantation was exploitative, as indicated by low land rent and wage payment, longer working time and heavier workload. Observations by Kartodirdjo and Suryo (1991) and Mubyarto (1992) shared the same view. Other studies by Suhartono (1991) and Wahyudi (2000) have argued that the development of western plantations caused rice shortages, poverty, and rising crimes. With the establishment of plantations, East Sumatra was changed into the biggest rice importer in colonial Indonesia (Wie, 1977; Hayati, 2000).

Despite the continuing criticisms, a revisionist view on the impact of colonial plantations has grown, especially since the 1980s. It challenged the view arguing the adverse impact of the colonial plantations. Fasseur (1975) and Elson (1988) have

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suggested that the impact of the colonial plantations was not uniform. A study by Djuliaty (2000) has revealed that the impact of the Cultivation System in Kedu residency was much lighter than in other regions with sugarcane- and coffee-forced cultivations. A study by Padmo (1999) on tobacco plantations suggested the mutual relationship built between the plantations and the farmers. Meanwhile, Van Schaik (1996) has argued that in Pekalongan, the western plantations had a mixed impact. On the one hand, it increased farmers' vulnerability stemming from the restricted access to irrigation water, while on the other the plantations provided employment to the landless peasants.

Despite the growing number of local studies, little attention has been paid to the fact that colonial plantations were not only run by the western enterprises, but by the indigenous enterprises as well. This article seeks to compare plantations run by the western enterprises in Jember and the indigenous enterprises in Mangkunegaran. Jember was one of the leading centers of western plantations in the Netherlands East

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Indies. Meanwhile, Mangkunegaran was known as one of the major areas of the plantations run by indigenous capitalists. The objectives of this article are to elaborate the ways in which the plantations operated in the two regions, to examine the impact of the plantations on the production of food crops, and to discuss the existing contrasts or similarities between the two historical experiences.

The problem of land

The western plantations in Jember

In the early years, the western plantations in Jember were developed on dry lands. They did not make a use of the land lease system, but did plantation through a kind of mutual cooperation involving the private planters and the local farmers. The planters provided them with tobacco seeds and other requirements. The farmers grew the seeds on their own lands and sold the products to the western planters (Broersma, 1912; Tennekes, 1963). Tobacco was then grown on lands leased from the farmers for three reasons. First, the new system opened wider opportunities for the planters to supervise the whole technical aspects of tobacco cultivation. Second, the need of lands for planting could be secured. Third, the emergence of new planters created an increasingly tight competition in providing tobacco seeds to the farmers (Broersma, 1912).

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The leasing of lands from the indigenous people was based on the Land Rent Ordinance of 1871. Land lease contract normally run for a five-year term. When the contract term ended, there were possibilities to renew contract agreement (Tennekes, 1963). The lands, however, were not devoted to the cultivation of tobacco along the year. Only around four months, from July to October, the lands were basically brought under tobacco. The crop was normally grown during the dry season and the leaves of tobacco were harvested in the beginning of rainy season. Outside the tobacco season, the lands were used for growing food crops (Broersma, 1912). Since the 1880s the cultivation of tobacco also began to take place on wet fields. The main reason for the shift was the search for an alternative method due to the declining productivity of dry fields used for growing tobacco (Vermeer, 1909; Broersma, 1912). A number of trials showed that the cultivation of tobacco on wet fields gave satisfying results. Until the end of the 19th century, however, the area of wet fields dedicated to the cultivation of tobacco remained smaller than of dry fields. In 1893, for example, NV Landbouw Maatschappij Oud-Djember (LMO) had 568 hectares of wet fields and 4,260 hectares of dry fields leased from the farmers (Vermeer, 1909).

The adoption of land lease system, however, did not completely remove the difficulties in obtaining lands. There was a growing competition for leasing lands from the local farmers between the old planters and new planters. This had a bad effect called in colonial sources as “demoralization”. To gain more profits, a

number of farmers leased their lands to more than one planter when the land was still under leasing contract. This created what was called as a double leasing (*dubbelhuur*) (Kessler, 1933). The contract was often without any written document. To solve the problem, land lease contract had to be registered (Broersma, 1912).

A more important way of obtaining plantation lands was by requesting lease rights to the colonial government. The promulgation of the 1870 Agrarian Law gave the western enterprises a necessary access to obtain vast lands on a long term land lease basis up to 75 years (*erfpacht*) (Furnivall, 1939). In 1879 the government granted the LMOD an *erfpacht* land of 355 hectares in Sukorejo. This was followed by the granting of *erfpacht* lands located in Mumbulsari, Rambipuji, Kaliwining, Mayang, and Mrawan. In 1893, the LMOD already had a total of 9,017 hectares of lands on *erfpacht* rights basis (Vermeer, 1909; Broersma, 1912). The *erfpacht* lands were also granted to other planters, including De Erven Baud, Franssen van de Putte-Lorentz, Van Rheede van Oudshoorn, Lebert-Schiffwhich (Anon, 1909).

A more important way of obtaining plantation lands was by requesting lease rights to the colonial government. The promulgation of the 1870 Agrarian Law gave the western enterprises a necessary access to obtain vast lands on a long term land lease basis up to 75 years.

The indigenous plantations in Mangkunegaran

In the Mangkunegaran principality, the ruler was the owner of lands. The lands were granted to the officials as their salary, called as *apanage* lands. The operation of the native plantations of the Mangkunegaran principality depended on the *apanage* lands. Two plantation commodities grown in the region were coffee and sugarcane. Coffee cultivation was found in the western slope of Mount Lawu, stretching from Jumapala, Karang Pandan to Wanagiri. Meanwhile, the sugarcane was cultivated on the lowlands of Malang Jiwan and Karang Anyar. Among the two crops, sugarcane had higher significance in economic and social terms.

There were two sugar factories in Mangkunegaran, Colomadu and Tasikmadu. Both factories were owned by the Mangkunegaran ruler. The Colomadu (Mountain of Honey) sugar factory was established by Mangkunegoro IV in 1862 with the help of a German expert, R. Kampf (Pringgodigdo, 1950). The construction costed f 400.000 [USD 236,000]. Part of the capital was borrowed from his Chinese friend, Be Biau Tjwan, a mayor of Semarang (Raad NGF, 1894). The first manager of Colomadu sugar factory was R Kampf, who was subsequently replaced by his son, G Smith in 1870 (Wasino, 2005). The second sugar factory, Tasikmadu (Ocean of Honey) started its construction in 1871 and was completed in 1874. This was regarded as the most luxurious sugar factory in the Surakarta and Yogyakarta principalities (Mansveld, 1946).

The planting of sugarcane was undertaken on wet lands, which were interchangeably used for growing rice. The planting of the two crops was run in a rotation system (*glebagan*). The area of lands incorporated in the *glebagan* system tended to increase. In 1920, its proportion reached 25.22% of the wet lands. The two sugar factories shared more or less equally the *glebagan* lands for sugarcane planting. By calculating *glebagan* lands data as a proportion of the entirely wet lands of Mangkunegaran (Landbouw Atlas, 1926; Bagchus, 1929; Pringgodigdo 1950), it could be estimated that the area of wet lands devoted for sugarcane planting reached 11.93% of the total agricultural lands in Mangkunegaran. The sugar industry of Mangkunegaran not only grew their sugarcane on wet lands in Mangkunegaran, but also expanded to the territory of Kasunanan.

The area of sugarcane planting grew significantly. In 1893 the Tasikmadu

factory had an area of 373 hectares of sugarcane and it increased to 693 hectares in 1911. By 1916, the planting of sugarcane reached its peak of 1,040 hectares. Meanwhile, the area of sugarcane planting owned by the Colomadu sugar industry reached 1,264 hectares. The possibility of Colomadu to expand the sugarcane planting was limited because its location near urban area and Kasunanan territory. For the Tasikmadu sugar factory, there was a vast area of lands for cane planting expansion, especially with the construction of reservoirs and aqueducts in Tirtomarto completed in 1924 (Wasino, 2005)

Apart from that development, the sugarcane plantation had to face a new reality. The 1918 Agrarian Reorganization put the *apanage* system to an end, and land ownership was given to farmers (Padmo, 1998). The goal was to strengthen the position of farmers. As a result, the sugar industry found it more difficult to obtain lands for cane planting. Many farmers were reluctant to lease their lands because it was more profitable to use their lands for food crops production. With the reorganization, the sugar industry no longer had the power to force the farmers to grow sugarcane. Many farmers getting involved in the *glebagan* system were often late in submitting their lands for sugarcane planting because they grew dry season rice crops.

To secure the willingness of farmers to provide their lands for sugarcane planting, the factories depended largely on the support of village heads. The factories also needed their support to overcome the problem arising from competition between

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the farmers and the sugar industry for irrigation water, a phenomenon that rarely happened before. The tension between the two parties was responsible for the emergence of social unrest in the form of cane burnings and the 1924 formation of fire guard squads to reduce the number of cane fires (Pringgodigdo, 1950).

The problem of plantation workers in Jember

Plantation workers in Jember

During the early years, the need for plantation workers was met in a quite simple arrangement. The farmers whose lands were used for plantation also served as the workers. In this case, they were treated not as workers but as entrepreneurs on their own lands (Broersma, 1912). As the colonial plantations began to grow, such a system could not keep up the growing need for plantation workers. Therefore, the plantations started to recruit workers from the surrounding villages. Unlike in other areas of Java where the role of village heads was very important, the process of worker's recruitment in Jember was without involving the role of village heads (Anon, 1863). The plantations recruited both male and female workers. They were employed in a variety of in different jobs from land preparation, plant care and harvesting, and the conveying of products. Other jobs included tobacco drying, selecting, and packaging (Broersma, 1912).

As the plantations continued to expand, the plantations could no longer depend on the local workers and had to seek plantation workers from elsewhere. The island of

Madura became the best place to recruit workers. The poor economic conditions resulting from the dry and infertile soils became a major push-factor for the Madurese to search jobs outside (Nawiyanto, 2009). The Madurese workers were also seen as suitable for the jobs because the cultivation of tobacco in the region of Jember was initially developed on dry fields. The Madurese people had been forged and familiar with such an ecotype (Kuntowijoyo, 1983).

From around the 1880s the planters in Jember began to recruit more Javanese workers. The effort was made in line with the expansion of tobacco to wet fields and the rising need of plantation workers to open up *erfpacht* lands (Vermeer, 1909).

To secure the willingness of farmers to provide their lands for sugarcane planting, the factories depended largely on the support of village heads. The factories also needed their support to overcome the problem arising from competition between the farmers and the sugar industry for irrigation water, a phenomenon that rarely happened before. The tension between the two parties was responsible for the emergence of social unrest in the form of cane burnings and the 1924 formation of fire guard squads to reduce the number of cane fires.

The Javanese workers were considered suitable for the planting of tobacco on wet fields because they were used to work on such an ecotype (Geertz, 1977; Kuntowijoyo, 1983). The Javanese workers were recruited from Bojonegoro, Tuban, Ponorogo, Kediri, Surakarta, and Yogyakarta. The Javanese workers were generally regarded by the planters as more diligent and obedient than the Madurese ones (Tennekes, 1963).

As the need for workers continued to grow, the competition for labor recruitment became increasingly tight (Mackie, 1985). There were incidents of the fleings of recruited workers which raised a suspicion that the cases were caused by other labor agents working for their masters (Nawiyanto, 2006). To meet the rising need of plantation workers, in 1910 the Association of Besuki planters took an initiative to establish Besuki Immigration Bureau (BIB). The main objective was to assist the planters to meet the requirement of workers for their plantations. With the establishment of BIB, it was expected that the fierce competition between the planters in obtaining workers could be reduced (Broersma, 1912).

The establishment of the BIB marked a new development of the worker recruitment system. Before the BIB was established, the workers were recruited informally through Madurese or Javanese brokers. They were employed as daily and free laborers in the plantations. After the establishment of BIB, the plantations employed contracted workers. In 1911 the BIB recruited 1,113 contracted workers, 197 children and 51 family-

members from the densely populated parts of Central Java. It was costing 14,807 guilders [USD 8,659]. On an average it was costing around 12 guilders [USD 7] for each worker. In the following year, the BIB received a request for recruiting 4,000 workers from the island of Madura (Broersma, 1912).

The efforts were considered less successful. From the first recruitment, only 40% of the workers continued to stay (Broersma, 1912). Several reasons were responsible for the difficulties in maintaining contracted workers to stay longer. First, the shift of recruitment model from informal to institutional channel eliminated personal relations between the workers and the brokers. Second, the lack of personal relations made the workers feel uncomfortable. To overcome the difficulties, the chairman of *Neder landsch-Indisch Landbouw Syndicaat* sent a delegation to the colonial government in 1912. The delegation proposed a new regulation which gave them the power to control workers as implemented in East Sumatra. But the government rejected the demand and only promised to provide a support in the form of facilities, especially colonization and improvement in health conditions (Broersma, 1912).

The rejection of the government was inseparable from the criticisms directed to the use of *penal sanction* in the East Sumatra plantations. This regulation often led to the maltreatments and violence against workers, which had a damaging impact which threatened the export activities from the East Sumatera plantations (Wie, 1977). The difficulty in getting legal support for implementing heavy penalties encouraged

the planters of Jember to look for other alternatives. The planters wanted the government to ban totally workers export from the region to other places. They also proposed the lower costs of workers transport by state railways (Broersma, 1912).

There was apparently a growing awareness among the planters that the workers also needed better health services, not only wages. The BIB suggested the Association of Besuki planters to build a hospital for the sake of plantation laborers. This suggestion was responded by the establishment of plantation hospital in Krikilan, Banyuwangi (Arifin, 1989). In 1931 two polyclinics were reported to have been established in Tanggul and Ambulu, Jember (ANRI, 1928-1931). The establishment of health facilities gave benefits not only to the workers but also to the planters. Better health conditions made the workers more productive in performing their jobs and this was something that the planters always expected.

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Plantation workers in Mangkunegaran

Unlike the region of Jember where the population was sparse, the supply of workers in the Mangkunegaran principality was sufficient. Under the *glebagan* system, the tenant farmers (*patuh*) whose lands were devoted to the sugarcane production also served as workers (Padmo, 1998). It was compulsory for them to perform the jobs when their lands were brought into sugarcane cultivation. The use of indentured workers supported the operation of the sugarcane plantations in Mangkunegaran. This arrangement was adopted until the early decades of the 20th century before the development of free labor in the plantations (Wasino, 2005).

An important development in the use of plantation labor began with the implementation of the 1918 Land Reorganization in the Principality. This policy shifted the tenant farmers into land owners and liberated them from performing compulsory services. The need of labor could no longer be met by employing tenant famers as part of the compulsory services as previously. The planters had to rely on the free labor market for the recruitment of workers. But, under this system the planters found it difficult to obtain workers from the adjacent villages during the times of planting, harvesting, and transporting sugarcane. To overcome the problem, the management of Mangkunegaran sugar factories tried to recruit workers from elsewhere such as Klaten, Boyolali, Sukoharjo, and Sragen (Wasino, 2005).

The impacts of plantations on agricultural production

Jember

In assessing the impact of the western plantations in Jember, it was necessary to look at the rice production in the region. One widely held view had suggested that the development of western plantations had a detrimental effect on the food crops production. It was interesting to examine this view in the context of plantations in Jember and Mangkunegaran principality.

The lack of statistical data for the regency level impedes a full appreciation of the rising trend in rice production in Jember. But the statistical data for Besuki residency in which the Jember regency was part of it, might provide a broad indication of the trend. When the plantations developed, there was also a large expansion in the rice cultivation from 1880 to 1940. Two major expansions took place in the period of 1910-1920 and 1930-1940 when the production of rice grew respectively by 93,000 tonnes and 123,000 tonnes. Comparing two decades, Van der Elst (1986) also arrived at the similar picture. In the period of 1878-1887 the average rice production in Besuki residency was 164,029 tonnes per annum. It increased to 364,231 tonnes in the period of 1914-1923 or an increase by more than 200,000 tonnes. This was the second largest increase recorded in Java (Van der Elst, 1986). The Puger District of Jember was ranked the most productive rice area in Java with an average rice production of 3 tonnes per hectare in the period of 1916-1920 and 1922-1927 (Scheltema, 1986).

Not only did it experience a remarkable increase in rice production, the region of Jember was also able to produce rice surpluses for commercial purpose. The region was reported to have transported large quantities of rice to other areas, such as Probolinggo, Pasuruan, Surabaya and the island of Madura (ANRI, 1922). This clearly showed that the capacity of the region to produce rice surpluses was strengthened, rather than being curtailed. Parallel with the growing rice production capacity, the rice mills also grew in number. It was reported that there were 11 rice mills operating in the region of Jember (Krapels, 1930). These rice mills were mostly owned by the Chinese and Arabs (ANRI, 1922).

The case of Jember has presented a quite different picture of the impact of western plantations. It challenges the view that the capitalist plantations led to the overtaking of lands from farmers, did harm to the food crops agriculture, and therefore threatened the livelihoods of people depending on agriculture (Kartodirdjo and Suryo, 1991). In Jember, the development of western plantations was not followed by the deterioration of the food crops agriculture and the declining capacity to export rice. On the contrary, the role of the region as a rice surplus producing area remained unchanged; rather it was even being strengthened.

The fact that the production of food crops especially rice kept on growing during the expansion of western plantations was due to several reasons. First, it had something to do with the type of commodity planted under the plantation production system and

farm agriculture. Tobacco and rice could be planted on the same lands at different time. The cultivation of tobacco at its best takes around four months from July to October when the region experiences dry season. During the four months, rainfalls are rare and limited. Tobacco plants are sensitive to rainfalls. Too much rainfall would make poor tobacco harvest. Therefore, tobacco was normally grown during the dry season and harvested in the early rainy season. When the lands were not used for tobacco, the planters returned them to the farmers for growing rice (Broersma, 1912). Under such arrangement, the two plantations, tobacco and farm rice crop, could be produced all the year without disrupting each other.

Another supporting factor was that the improved irrigation system in the region not only offered benefits to the plantations but to the farm agriculture as well (ANRI, 1925; Van der Elst, 1986). It is noteworthy that during the expansion of plantation in Jember, the colonial authorities embarked upon a series of extensive irrigation projects. A major project was the Bedadung irrigation network carried out from 1908 to 1919, providing supplies of water for 26,000 hectares of irrigated fields (Verslag, 1920). In the 1920s and 1930s the Bedadung irrigation network was perfected with the construction of Bago dam and secondary canals such as Glundengan, Lojejer and Nogosari (Verslag, 1926). The West Bondoyudo irrigation network was undertaken between 1922 and 1925, supplying water for almost 5,000 hectares of irrigated fields (Verslag, 1927). The Mayang network,

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constructed from 1919 to 1925 provided irrigation for additional 11,400 hectares of irrigated fields in Jember (Verslag, 1925).

Mangkunegaran

The development of plantations in Mangkunegaran did not necessarily mean a disruption on food crop production. Unfortunately, there are no yearly data on rice production in the area. But, data for the Surakarta residency of which Mangkunegaran was also as part of it might indicate that as the plantations developed, the cultivation and production of rice also tended to increase. The cultivation of rice area grew to more than 22,000 hectares and the production of rice increased roughly by 22,000 tonnes (Wasino, 2005).

A patchy statistical data for the Mangkunegaran principality indicate that there was an increase in rice productivity. In the 1916-1920 period the productivity of rice was 0.99 tonnes per hectare and it increased to 1.53 tonnes per hectare in the 1922-1927 periods (Scheltema, 1986). The increase was remarkable and this was due

to the improvement in irrigation facilities. Five dams were built in the area between 1919 and 1920s, including Gembong, Trani, Jongkang, Lempung, and Jumok. The largest irrigation building was Tirtamarta lake, which took 7 years to build, 1920 to 1927 (Wasino, 2005). All these irrigation buildings facilitated the cultivation of rice. But, compared with the rice productivity in the residency level as a whole, the figure was lower. The reason for this was the fact that the lands of the Mangkunegaran Principality were generally less fertile than the lands of the Surakarta kingdom.

To get a clearer picture of the plantation impact on the population, it is necessary to look at the availability of rice for per capita consumption. Based on 1920 statistical data on rice production and population, the availability of rice for per capita consumption varied across district in the Mangkunegaran principality. The highest figure was in Karanganyar district and the lowest in Kota Mangkunegaran. On an average, the availability of rice for per capita consumption in the Mangkunegaran Principality reached 323 kg. This quantity was only little bit higher than the minimum requirement of 320 kg per capita per annum for a poor family (Mubyarto, 1982). It can be understood that the area was hardly able to produce significant quantities of rice for export market. The situation was different from the earlier period indicating the ability of the Mangkunegaran principality to transport rice to the neighboring markets in the Surakarta and Yogyakarta principalities (ANRI, 1873).

The development of plantations in Mangkunegaran also led to the growing competition in accessing irrigation water between plantations and farmers. Previously, the farmers had to follow the instruction of sugar administrators to grow non-rice crops requiring less irrigation water in order to provide the sugarcane plantations a wide access to use water. But after the 1918 land reorganization and the sugar industry lost its power to force the local farmers to grow non-rice crops, the occurrences of water stealing increased (Wasino, 2005). They needed irrigation water for their rice crops. For the local farmers, growing food crops especially rice was considered more profitable than leasing their lands for sugarcane cultivation, which could take between 12-20 months. This meant that by allowing sugarcane cultivation, the opportunities for the farmers to grow food crops were reduced. The land rent paid as compensation was often not enough to sustain their livelihoods. To support the cost of living, they could earn money by working as coolie in plantations.

Conclusion

This study has indicated that the capitalist plantations in Jember and the Mangkunegaran principality were developed in a quite different environment. The region of Jember had a relatively land abundance, but under labor constraint. In this kind of environment, the expansion of western plantations had to rely largely on labor import from outside and the need for lands was mainly met by obtaining lands from the Dutch colonial government under a

long-term land lease contract basis (*erfpacht*). In the Mangkunegaran principality, the plantations were under a land constraint, but relatively abundance in labor. Here the plantation crops were grown on the same plot of lands used for cultivating food crops in a rotation basis (*glebagan* system).

In the Mangkunegaran area, the competition between plantation and food crops production systems, in terms of land and irrigation water uses were more strongly felt than in the region of Jember. This was also inseparable from the different type of plantation commodity developed in the two regions. In the Mangkunegaran area, sugarcane was the major plantation crop, while in Jember, tobacco was the major commodity. The use of lands for sugarcane cultivation took much longer time than that of tobacco. The cultivation of tobacco took lands only around 4 months in a year and around 8 months the lands could be devoted for food crops production, while, sugarcane cultivation took 12-20 months. Sugarcane also demanded more water than tobacco. It meant that there were larger opportunities to grow rice for the farmers in Jember than in the Mangkunegaran area.

In the two regions, the development of capitalist plantations was not followed by the decline in rice production as often generally suggested. On the contrary, the production of rice in the two regions tended to increase in quantity. But, the availability of rice for per capita consumption was different among them because of the difference in rice productivity and the population size. The rice productivity of

Jember was much higher than that of Mangkunegaran principality. The population size of Mangkunegaran was also bigger than that of Jember. This reality explains why the region of Jember continued to produce large quantities of rice surpluses and was able to strengthen its role as rice-exporting region in Java, while in the Mangkunegaran principality such a role was practically absent.

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