

CONCLUSION

Deagrarization, Dynamism, and Stratification in Comal's Long-Term Economic Development 1812–2012, an Exodus from 'Agricultural Involution'

Kosuke Mizuno

Comal used to be a heartland of the Dutch East Indies economy, playing an important role in the production of sugar for international export. But it lost this position following the Japanese occupation. The Soeharto regime promoted the TRI (*Tebu Rakyat Intensifikasi*) program, which obliged farmers to rent out their land to the sugar factories; farmers were also forced to participate in sugarcane production for domestic use this time as laborers in the rotation system with wet rice production—although sugarcane productivity in the farmlands and factories were far lower than they had been during the colonial era. Many resources in this area, both in terms of land and labor had been forcibly mobilized for the sugarcane production both during the colonial administration and the Soeharto regime.

After the Letter of Intent with the International Monetary Fund was signed in 1998, the TRI program was scrapped. Now, no leading industry is found in

the Comal area; sugar production does not figure prominently in the regional economy, and the many micro/small- and medium-scale businesses that have been flourishing in the nonagricultural sector are nearly all for the domestic market. Comal supplied migrant workers, especially construction workers; regional production has developed to satisfy the increase in domestic/regional consumption supported by the low but stable increase in population, along with the development of the national economy, which grew at an average of 7% from 1990–1996, and around 5% during 2003–2012 (6% in 2012). Agriculture has kept both rice production and horticulture as well as aquaculture, although no significant growth in these sectors was found in 1990–2012.

But alongside the region's gradual economic growth, tremendous changes had taken place over two decades, from 1990–2012. Our study, based on a 1,000-household survey in 2012 compared with a 500-household survey in 1990 and the results of a 2,899-household survey in 1903–1905 in the Comal area, shows many sets of unique findings.

Among the most remarkable changes was that as much as 79.6% of the households surveyed did not own agricultural land. The number in 1903–1905 was 31.6%, and in 1990 was 56.7%. These data show that many new landless households had been created.

One factor that could account for this change was population growth. However, the population growth rate was not so high, 0.35%, and the annual population growth rate during 1988–2012 was lower than the rate during 1904–1988, 0.57%. The next factor that could be assumed was the change in household size. In 1990, the average number of household members was 5.17 persons; in 2012 the number decreased to 3.72. This change was brought about by the decrease in the number of children and outmigration. If the number of household members decreased and the number of households increased while the area of agricultural land stayed fairly constant, the result would be a decrease in the average size of landholding, and an increase in the number of households that did not own land. The average size of landholdings (except for landless households) dropped from 0.41 hectare in 1990 to 0.33 hectare in 2012; on the other hand, in 1903–1905, the average size was 1.06 hectare.

If we include the landless households, the average size of agricultural land in 2012 was only 0.06 hectare; on the other hand, the size in 1990 was 0.18 and 0.72 in 1903–1905.

Deagrarianization is found in the occupation side, and this set is the second finding. First, we examine the household head occupation. The number of household heads that could keep a living without agricultural land increased. Households whose heads' occupation was agriculture decreased from 56.4% in 1990 to 32.5% in 2012. The ratio of households engaged full time in agriculture has declined significantly in all villages, it has fallen from 42.8% in 1990 to 24.8% in 2012. Meanwhile, households whose heads' occupation did not include agriculture/agricultural laborer increased to 49.5% in 2012, from 23.6% in 1990.

The percentage of households engaged in agriculture as principal occupation and in a nonagricultural side job has also decreased markedly from 13.6% in 1990 to 7.6% in 2012. The ratio of those engaged in nonagricultural occupations as principal livelihood and also in agriculture as a side job has more drastically declined from 16.0% in 1990 to only 4.2% in 2012.

These data suggest that deagrarianization has accelerated in the last 22 years in the study area.

These changes relate to those in the people's educational level. Household heads whose education went beyond high school increased from 4% in 1990 to 12.8% in 2012. On the other hand, household heads with no education decreased from 27.4% in 1990 to 14.9% in 2012. These changes were discussed in several chapters of this book, particularly Chapters 3, 6, and 7 (by Kano in Chapters 3 and 6, and by Merel van Andel and Gerben Nootboom in Chapter 7).

Deagrarianization is found in the occupation of household members. The number of household members engaged in nonagricultural occupations increased significantly. The proportion of workers engaged in agriculture drastically declined from 61.8% in 1990 to 32.6% in 2012. The ratio of workers in the manufacturing industry increased from 6.0% in 1990 to 9.3% in 2012; however, the ratio of factory workers never increased, at 4.3% in 1990

and 3.3% in 2012. Many workers in the manufacturing sector are engaged in micro/small businesses (not in factories). The ratio of workers in construction, trade, and private-sector services grew remarkably over 22 years. In the case of construction, the proportion of workers went up from 5.9% to 14.5%; in trade the proportion rose from 11.3% to 15.3%. Meanwhile, in 2012, 8.1% of all workers were engaged in “private-sector services.” The increase in tertiary sector occupations in the research site is parallel to the national trend in which employment in the tertiary sector also rose.

This trend is more apparent when the occupational data are calculated based on the formal-informal division. Kano calculated the proportion of informal sector income to total income, which showed that 72.2% of the income in six villages as a whole as an income resource were from the informal sector. The latter as an income resource was more vital in remote villages that were located farther from the trunk road. Income from primary industries was more than 25% in Pesantren, which has some dynamism in the aquaculture industry, and income from secondary industries is more than 20% in Cibiyuk and Karang Tengah, which are close to the trunk road. However, in every village, income from the tertiary sector is higher than both the income from primary and secondary industries. It indicates the predominance of trade and service as income-generating activities in these villages. This trend is also mirrored in the national data. These findings were shown and discussed by Kano (Chapters 3 and 6) and Merel van Andel and Gerben Nootboom (Chapter 7).

Third set of findings in this volume consists of the ecological impact of economic and social development. These were deforestation, erosion, and flooding and irrigation troubles. Artur van Schaik (Chapter 2) has shown that deforestation started in the study area at the end of the 18th century. Forests there were cut continuously from the beginning of the 19th century to satisfy the various timber uses. Deforestation became serious around 1830 when agricultural production extended into the forest area at the onset of indigo and coffee plantations. Government coffee plantations exacerbated deforestation. The steep slopes and a hoed garden in combination with cleaning and weeding left the land extremely sensitive to erosion. Company-managed coffee

plantations enjoyed long-term leases and carried on clearing the forests, seriously eroding the hilly areas of the old Comal District.

Twentieth-century research on soil erosion has arrived at a mean value of 6–12 tons/hectare/year on volcanic soils and about 20–60 tons/hectare/year on limestone soils. This has led to a quickly prograding shoreline, the formation of mud banks along the coast, the silting up of harbors, and the formation of a river delta. The coastline in western Brebes has moved seaward 54 meters every year. In Comal, landmarks placed on the beach around 1920 were found 3 kilometers inland in 1980, which also amounts to 50 meters per year. Another indication of land degradation is evidenced by more floods (*banjir*) during the wet season.

When the sugar factory in Comal was established in the 1830s, it used the existing traditional Javanese irrigation system for its cane fields. Already in the 1830s competition over the Genteng River resulted in a conflict between the factories in Comal and Sragi, and between officials of Tegal and Pekalongan who were keen on promoting sugar production in their respective regions. The acreage of cultivated land and the expansion and intensification of water use by estate crops combined with more irregular river discharges after deforestation resulted in competition for water between estates and peasants, and between peasant top-enders uphill and low-enders in the plains. Companies needed huge amounts of water for the factories' crushing wheels. Upstream these wheels caused a water shortage for dry monsoon crops. There it dropped several meters and could only be reused by fields north of the Dandels post road. Finally, the factories were forced by BB (*Binnenlands Bestuur*, Department of Home Affairs) to install steam engines. The introduction of modern irrigation technology after 1890 improved the capacity to direct irrigation water to a specific spot at a particular time. Peasants had little influence on the decisions about the distribution of water. The expensive new technology failed to provide sufficient water to peasant agriculture as well as to the cane plantations. The irrigation of peasant fields deteriorated because the cane plantations secured preferential rights to water, while the total quantity of water had not increased.

This resulted in poor harvests of dry monsoon crops and a lack of participation by the population in the maintenance of irrigation systems.

On the other hand, the phenomenon of afforestation appeared in Java Island around the 1980s (in other areas reforestation began sometime in the '90s,) usually on private land. The government has promoted the forestation program since the 1950s (especially around the 1990s), but this phenomenon of reforestation is more voluntary (initiated by the local people) than government sponsored. In the area where the issue of poverty was apparent in the 1970s, for example, deagrarianization and outmigration have become the norm, resulting in great improvements in housing conditions, household incomes, education, and transportation. In agriculture, another important transformation has been taking place with enormous social, economic, and ecological consequences—the afforestation of the uplands. According to Graaf et al., there are three categories of landowners relating to dry agriculture: (a) absentee landowners, (b) village officials with regular and stable incomes and relatively large tracts of land (more than 2–5 hectares), and (c) large landowners who live in the village and are mainly occupied with agriculture (more than 0.5 hectare) and who now grow trees and have shifted to other sources of income; and smallholders and sharecroppers. The first group who plant trees in dry agricultural land recognizes the labor-saving benefits of tree planting and the possibility of growing trees while working elsewhere. The second group also speaks of savings and investment, but tends to cut trees more quickly, sometimes within five or six years, to maximize and hasten turnover: “We like these trees as they can be saved till money is needed” or “Even young trees already have a price now.” Some farmers mentioned quite different reasons for replanting trees—for example, following the destruction of agricultural fields by monkeys or a monkey invasion. But the villages that have not been invaded by monkeys have experienced the phenomenon of reforestation. As a result of afforestation, elderly farmers are excluded from former practices of food production and sharecropping: “Now there is no food and no work in the village anymore, we’ve had to go out.” And as several smallholders shared with the authors, “Trees are good if you have abundant land or other sources of income, but it takes too long to wait for the money if you are poor. I preferred

the quick return of the *ladang*; every few months we had cassava, maize, or groundnut to eat or to sell. It is better to have food in the house than to hunt for cash.”

Mizuno’s study in the Comal flatlands, where trees are also planted in home gardens, relatively wealthier people plant trees, but the percentage of households that plant trees is smaller than in hilly areas. Tree planting is one of the savings and investment options for local people. The tree planting is conducted on private land, and this condition is quite different from the state forest often looted by local people around the 2000s.

The fourth set of findings is related to agriculture. Agriculture in the area in 1990 had top-down characteristics: People selected rice seeds according to instructions from the BPPL (*Balai Penyuluhan Pertanian Lapangan*). In 2012, people chose the seeds on their own, what with the many options available to farmers, some of whom chose to plant the local variety. With the abolition of the centuries-old TRI program or *Cultuurstelsel*, farmers could now make use of the agricultural land more freely. Some had even started making bricks using the clay in ricefields. Others have tried planting red onions (*bawang merah*) in the ricefields using substantial capital.

People’s initiatives developed the farmers’ group activities in jasmine cultivation. Kawasaki found out that the jasmine farmers’ groups play an important role in supporting farmers in relation to production, distribution, and financing. It has been successful because (1) the group leader works as a trader, (2) short-term payment is made available, (3) as well as opportunities for women, and (4) the groups provide an initial investment to members (Chapter 11).

Truly fundamental changes in agricultural production and social relations in agricultural production have taken place from 1990 to 2012 (Mizuno et al., Chapter 12). During this period, ricefields planted decreased because of changes mentioned above, even as rice production also decreased. However, land productivity of wet rice production increased, for example, at Karang Tengah Village from 1,846 kg milled rice/ha/year in 1990 to 2,367 kg/ha/year in 2012. Use of fertilizer and pesticide (this time including herbicide)

was intensified, and some mechanization proceeded especially for threshing (*merontok*). Pedal-driven machines (*tlésér* or *mérét* in local Javanese) prevailed in the region, replacing the traditional method in which the tip of the rice stem is slammed on the surface of a teak plank in the shape of a triangular prism (*gepyok* in Javanese). However, a more fundamental change is the decrease in the use of hired labor. At Karang Tengah this went from 1,279 hours/hectare for the rainy season, 977 hours/hectare for the dry season in 1990 to 383 hours/hectare for the rainy season, 245 hours/hectare for the dry season in 2012. On the other hand, the use of family labor increased, so the phenomenon of peasantization appeared. This drastic change is accompanied with the increase in real wage for wet rice production. This is evident in the amount of rice that the wages of hired labor could buy. For the work of transplanting (women), transporting seedling (male), and hoeing (male), real wage increased 4.16%, 5.83%, and 4.96%, respectively during 1990–2012; on the other hand, during 1903–1990 the real wage increased 0.91%, 0.15%, and 1.00%, respectively. From these data, the trend of real wage rate increase is clear. The amount of hired labor decreased drastically; on the other hand, real wage rate increased steadily during the time, so the portion of labor cost for farmer's production cost did not change.

For sugarcane production, the cultivated area decreased once after the abolition of TRI around 1999 and 2000, but later the area increased especially in dry fields. Sugarcane productivity did not change clearly so the level is quite lower than in colonial times, but the level has remained constant since the Soeharto era. Today, no organizer (*mandor*) from the factory controls the agricultural laborer (many of them were original landowners), but independent farmers cultivate sugarcane, and sell the output themselves to the farmers' group (*kelompok tani*), for example. Agung Wicaksono (Chapter 5) clearly showed the reason why the area of sugarcane planting increased in wet ricefields. Farmers plant the sugarcane in the second plot besides planting paddy at the first plot. The income from sugarcane farming somehow supplements the household economy. Sugarcane planting used to be highly labor intensive with high land productivity, but this has become a labor-saving business, like planting bamboo (although there are some exaggerations), as a niche business

for farmers. Agung explains this change as one stemming from the easing of population pressure because of outmigration, population growth decrease, and the development of nonagricultural businesses especially the tertiary sector.

The increase in the real wage of agricultural laborers is a product of these social and economic changes in Comal society. Real wage rate increase makes the traditional agricultural arrangement unprofitable from the farmers' point of view, such as the highly hired labor-dependent agricultural cultivation practices for paddy cultivation or sugarcane production of the traditional Reynoso System, a production method that deployed intensive labor and irrigation or complicated sharecropping production. This real wage rate increase may benefit the agricultural laborer, but this depends on the situation. If the negative effect of the decrease in hired-labor opportunity for the agricultural laborer is bigger than the positive effect of the increase in their wage rate, income for agricultural laborers might decrease.

Stratification in Comal society is the fifth finding in this volume. On landholdings, Kano in Chapters 3 and 6, and Merel van Anandel and Gerben Nootboom in Chapter 7 showed an extreme shrinking in landholdings from 1,000 household survey results: Except for landless households, this has dropped from 0.41 hectare in 1990 to 0.33 hectare in 2012; in 1903–1905 the average size was 1.06 hectares. However, the households that kept arable land of 1 hectare or more was 1.1% among the surveyed households and owned 37.9% of land owned by 1,000 households (although around 80% of households did not own lands). The percentage of households that kept 1 hectare or more arable land in 1990 was 3.6% in 1990 and 11.8% in 1903–1905; on the other hand, the share of land owned by those people was 35.9% in 1990, and 47% in 1903–1905. The Gini index of landholdings for households excluding landless increased from 0.301 in 1903–1905, to 0.519 in 1990, then to 0.568 in 2012. Moreover, the Gini index of landholdings for households including landless increased from 0.544 in 1903–1905, to 0.783 in 1990, then to 0.922 in 2012.

These data show that although as a whole landholdings are shrinking, a group of large landholdings (in the context of Javanese society) continues to exist, and land distribution measured by the Gini index has always been

deteriorating. The data also show the trend of highly unequal landholdings among the people.

Kano in Chapter 6 could not find any significant correlation between the existence of agricultural income and the level of total household income. In addition, the percentage of number households without agricultural income is the highest (62.1%) in the richest group of six villages as a whole in 2012. In 1990, the author found a clear correlation between the wealth of households and their landholding size in Cibiyuk, Wonogiri, and Karang Brai where the residents' major economic activity was still agriculture. Such correlation has evidently disappeared in the 22 years thereafter. The rural economy in Comal has conclusively shifted from agricultural production to trade and service activities, according to Kano. Income disparity among sample households has not diminished, but its principal cause has shifted from the gap in the possession of agrarian resources to the gap in access to the income-earning opportunities in nonagricultural activities.

In relation to rural stratification in which disparity of income and landholdings persists, how does the control of village leadership by particular *trah* families inform the discussion of landlordism in Comal? From the sociological and political perspectives, this study shows the persistence of the *trah*—the rural elite genealogy—even after *reformasi*, or the post-Soeharto political reform. In the first election of the village head after *reformasi*, persons with no relations to the traditional power-holding clan were elected, but in the elections held in 2007–2011, persons who belonged to the old ruling family were elected (Dyah, 2014). Kozano has shown that the headman who was able to boost the village economy was elected during the Orde Baru period, and in the period of economic boom after 2005. It was likely that the village leaders best suited for this demand was one who hailed from traditional *trah*, and had acceptable savings, ample agricultural knowledge, and good commercial connections outside the village. This phenomenon was also observed at the time of the Japanese Army's surrender in 1945. Following the upheaval, new faces were elected, but the return to stability restored the old ruling families as the source of village heads (Chapter 9).

If we consider the salary land (*bengkok*) available to village heads, and the persistence of large landholdings (in the context of Javanese society), we may assume the continuity of landlordism, although this factor is not a major determinant of income distribution today.

The trend of stratification (greater inequality) has always been stronger than the trend toward an egalitarian society. Pujo Semedi discussed the coastline and prospects for expansion and opportunities for landless people (Chapter 1). The loss of the topsoil to erosion in the hill range has been shown by van Schaik as a gain for the estuary in the Comal River. Although new lands in the Comal estuary were open to all and technically presented an opportunity for landless farmers to improve their lives, the politic-economic setting of the 19th century prevented such farmers from laying their hands on these lands, large tracts of which had been appropriated by private plantation companies in the colonial regime. And although the postcolonial administration put the interests of smallholders before those of big companies—in effect providing farmers access to lands—this policy had failed to provide a way out of landlessness for the lowest stratum in the Comal farming community. Indeed, getting out of landlessness not only requires access to lands, but also the economic ability to retain the land and keep it productive. New lands in the estuary may have been opened up by landless farmers, but they were ultimately incapable of keeping these productive and thereby retain ownership. They had reported their new lands to the village administration to secure official acknowledgement, but shortly lost their titles by selling the lands to more financially capable people—either rich relatives or wealthy neighbors. Making lands available must be accompanied by mechanisms to empower farmers and ensure land productivity. Otherwise, there will be no curbing landlessness in any community.

In the nonagricultural sector, we find many new people's initiatives and social dynamics promoted by the wave of decentralization and democratization. Chapter 6 (Kano) presents detailed data on the number of people. With the abolition of the centuries-old TRI program, farmers could now make use of the agricultural land freely. Some had even started making bricks using the

clay in ricefields (13 brick [*batu bata*] makers were found in 1,000 respondent-households). The bakery business was, in 2012, quite new and exciting. The cake called “*bronis*” became hugely popular among the villagers at Pesantren. There were no such enterprises there in 1990. Villagers who learned how to bake in Cirebon and Jakarta developed the business in various places, including the village. Home industries around cakes and baking sold their products in towns near the village; some even sold these in a large town such as Pekalongan (Zulfarida, 2014). Among 1,000 respondent-households, 6 salesmen were found, their sales covering Central Java, West Java, and Lampung. A garment producer at Karang Tengah acquired the skill to make sports shirts using knitting machines. He used to work at the knitting company in Jakarta, where he also ran a small business. His factory in the village had 10 used knitting machines, *Juki*, and employed 10 persons. He got orders to manufacture sports shirts with official logos of organizations (such as schools, and neighborhood, youth, and women’s groups, and so on). A maker cum trader of *celana kolor* (drawstring breeches) in Cibiyuk Village went farther a field to sell his goods. Some villagers sold their products to peddlers as far away as Papua (Isnaini, 2014). Besides many workers engaged in manufacturing, among 1,000 respondent-households, 17 salesmen of *celana kolor* were found. Their sales area was extensive, covering North Sumatra, Riau, South Sumatra, Lampung South Sulawesi, East Kalimantan, Bali, Jakarta, and other districts in Central Java. This *celana kolor* business was also not found in 1990.

There are many businesses in the nonagricultural sector that have developed in this period. The number of construction workers increased. There were 31 independent construction workers from 1,000 sample households, 4 persons were foreman (*mandor*). Besides these independent workers, there were 229 hired construction workers. Some 24 workers per 100 households worked in this sector in 2012, and the number increased from 18 workers per 100 households in 1990. The area became the source of construction labor supply.

Trade is an important business. Among 1,000 respondent households, there were 226 independent traders (75 men and 151 women) who belong

to 220 households; among them 20 men had fixed facilities such as shops (*toko*), stands (*kios*), booth (*warung*), or small restaurant (*rumah makan*), and 84 women had fixed facilities. The others were traders without fixed facilities, such as vendors (*bakul*), peddlers (*pedagang asongan*), itinerant merchants (*pedagang keliling*), middlemen (*pedagang perantara*), and sellers offering credit (*tukang kredit*) and so on. The number of traders per 100 households somewhat decreased from 33.4 persons in 1990 to 27.5 persons in 2012; however, the businesses were also quite important in 2012.

Private-sector service also played an important role in the economy in the area. From 1,000 respondent households there were 134 persons (74 men and 60 women). There was a wide range of private-sector service workers, operators in car, car/motor bicycle repairer (*bengkel*), mechanics in car shops (15 male workers), housemaid/housemen and babysitters (21 persons), laundry workers (10 women), kitchen cooks (*buruh masak*) (4 women), independent tailors (9), bridal makeup artists (*perias pengantin*), and beauticians (*pekerja salon* or *pengusaha salon*, 3 women and a man). There were persons engaged in entertainment and ceremonies-related businesses (12 men and 3 women), such as event organizer,” or “master of ceremonies (MC),” rental and/or operation of the sound system for festivals or ceremonies, those who rent out units of Play Stations, and assistants for ceremonial banquets (*pembantu hajatan*). There were electronics-related businesses (5 men), such as TV parabola antenna installation workers (*pemasangan antenna*), radio repairs (*reparasi radio*), and maintenance of electrical appliances (*servis elektronik*). There were also faith/traditional healers/spirit mediums (*dukun*) and midwives (*dukun bayi*)—a man and 4 women, 2 of whom were the richest and second richest among the 1,000 respondent-households. There was a category of handymen (*buruh serabutan*), porters (*kuli angkut barang*), stevedores (*buruh bongkar muat*), and junkmen (*pengepul barang bekas*) (10 men). There were also several workers in the private-sector services such as masseurs and masseuses (*tukang pijit*), well cleaners (*penyedot sumur*), parking lot attendants (*tukang parker*), watchmen (*penjaga*), etc. There were 8 persons who worked in the private-sector service in 1990, so the 13.4 persons per 100 households in 2012 represent a significant increase of workers in this sector during the last 2 decades.

The authors found dynamic changes in the society and vulnerability as well. Endo (Chapter 10) pointed out, first, that the proportion of expenditure on cereals, a staple food, in the total household food expenditure was high in the following households: those with vulnerable livelihoods dependent on unstable income sources, those under high demographic stress such as large household size, and those with many children of school age and younger. Second, the proportion of expenditure on instant foods and drinks was relatively high in households where a person in charge of food preparation was employed in the formal sector, as well as in households with stable livelihoods. Third, a strong relationship between the educational level of household heads or their spouses and the consumption patterns of cereals and luxury items was seen. Furthermore, most households, with the exception of farming households, purchased almost all of their food after giving up activities in the agricultural sector. This suggests that the household livelihood faces a growing risk to human capital due to a deterioration in food consumption with changes in the economic situation, including a rise in the price of food items. Moreover, the spread of afforestation has resulted in the decrease or disappearance of sharecropping, which translates to less agricultural labor opportunities for the landless that further reinforces stratification and inequality (Chapter 4) and exacerbates their vulnerability especially in the absence of supportive social policy. This may partly explain the widely observed stunting among children in Indonesia.

These social changes vastly differ from those found in the conventional East Asian model of export-oriented industrialization. In the latter, young female labors are absorbed by labor-intensive export industries such as the production of apparel, shoes, electronic appliances, and so on (Deyo, 1989). This exodus has had some impact on improving income distribution (World Bank, 1993).

On the other hand, Indonesia's natural resource-rich economy has relied on the export of primary commodities since the 2000s. The development of crude palm oil export and the coal industry and export have boosted consumption and supported a 5% economic growth since around 2004. The development of

the nonagricultural sector, especially construction, and the trade and service sector (or the nontradable goods sector), accords with the current model of Indonesian economic development. These domestic industries tend to employ more males than females—a bias pointed out by van Anandel and Nooteboom in Chapter 7.

The trend toward stratification (or inequality), the diminishing use of hired labor in *sawah* cultivation, the wage-rate increase or labor productivity increase (with the growing use of labor-saving technology), the constant increase in outmigration and decrease in population growth, and the persistence of landlordism are all contrary to “agricultural involution” (Geertz, 1963). “Agricultural involution” posits that limitless labor absorption by *sawah*, constant population increase, no real increase of income as expressed by the number of staple foods per capita, and the complicated practice of sharecropping characterized “shared poverty.”

Comal also came out of serious deforestation in 19th century into afforestation/forestation since the 1980s. To be sure, labor-saving technology has enabled afforestation in most places. However, its negative impact on elderly landless farmers is also found in the upland areas as mentioned above. The Indonesian model for economic growth is not accompanied by the large-scale exodus of labor such as that found in countries with conventional export-oriented industrialization like Japan, South Korea, Taiwan, Thailand, and so on. A positive consequence of this is the absence of depopulation in rural areas, as is commonly found in those countries.

Editors:

Kosuke Mizuno · Pujo Semedi · Gerben Nooteboom

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