

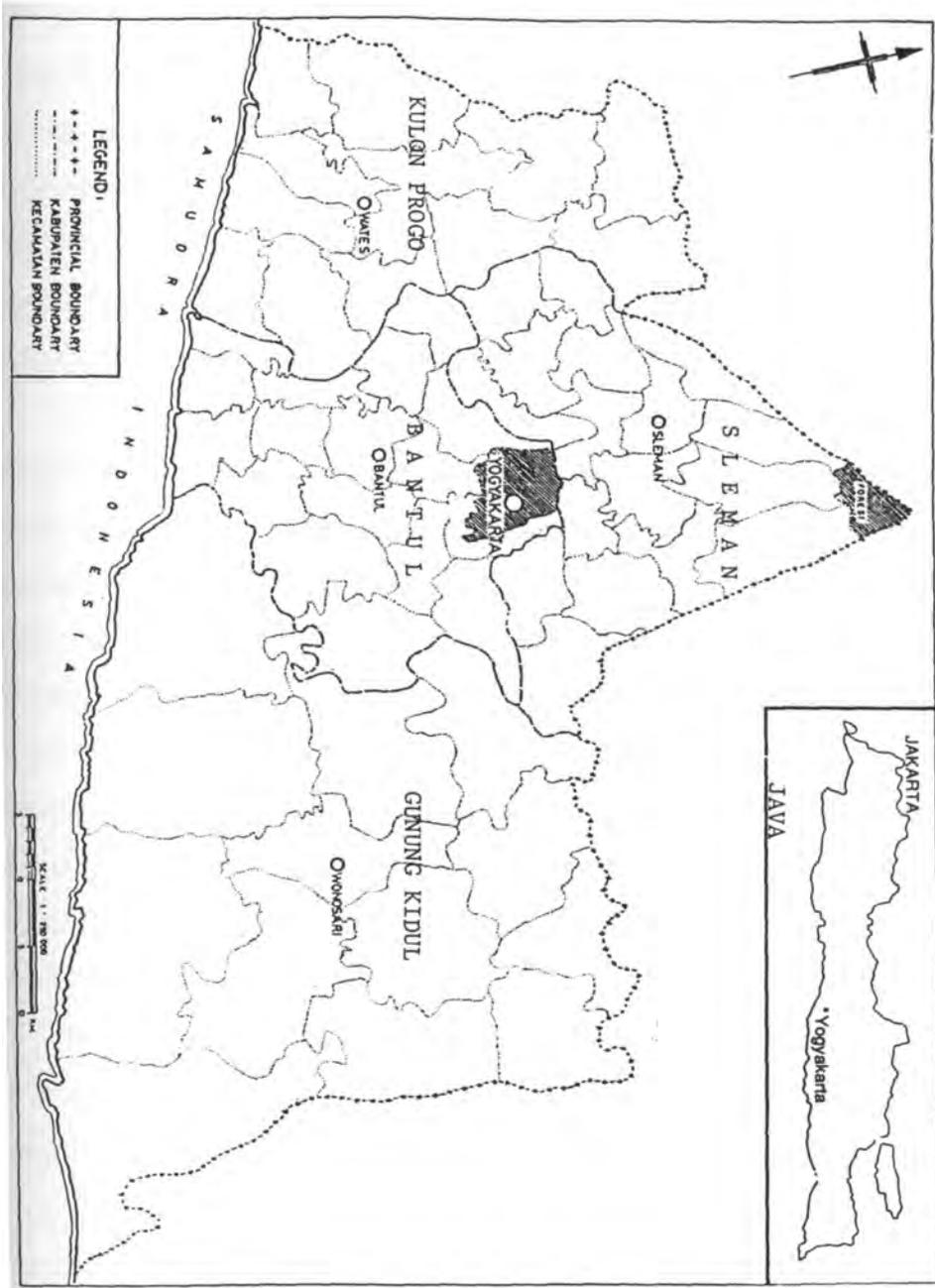
Chapter 2: Recent Socio-Economic Developments in Kolojonggo

The Special Region of Yogyakarta (*Daerah Istimewa Yogyakarta*) lies in the southern central part of Java, one of the most densely populated islands in the world. Its special treatment, as the term '*istimewa*' (special) implies, stems from the Indonesian government's recognition of its historical importance as the heir of the Javanese kingdom, Mataram, and as the centre of the war of independence against the Dutch.

The Islamic kingdom, Mataram, which had replaced Hindu Majapahit in the 16th century, was partitioned into two self-governing Principalities in the mid-18th century when the Dutch established themselves as the dominant foreign power and involved themselves in power struggles amongst rival princes in Mataram. After the partition, Yogyakarta and Surakarta, located northeast of Yogyakarta, became the respective capitals of the two Principalities. From that time till 1942, both regions remained enclaves governed by indigenous rulers under the supervision of the Dutch residents whereas other parts of Java were subsumed under direct Dutch rule. The competition between the two Principalities for the status of legitimate heir of Mataram favoured Yogyakarta. Unlike the ruler in Surakarta who did not show his strong support to the provisional Indonesian government in the war against the Dutch, the Sultan in Yogyakarta was an enthusiastic supporter of it. The triumph of the provisional Indonesian government then signalled the defeat of Surakarta in its competition with Yogyakarta. The Yogyakarta Sultanate was given the privilege of becoming a special region, whereas Surakarta was amalgamated as part of the Province of Central Java.

Yogyakarta consists largely of two physiographically different areas; barren mountainous regions and fertile lowlands. The mountainous regions, constituting more than half of the total territory of Yogyakarta, incorporate the areas of Mt. Merapi in the north, the mountain range of Seribu in the east and the hilly areas in the west, creating a natural boundary for Yogyakarta surrounded by Central Java. The remaining regions are the lowlands, which are situated largely in the centre of Yogyakarta. Young volcanic soil (regosol) covering most of the lowlands and two rivers of the Progo and the Opak running across it from north to south make these regions one of the most fertile and densely populated areas in Java.

Figure II-1: The Special Region of Yogyakarta



There are four districts (*kabupaten*) and one municipality (*kotamadya*) in Yogyakarta. Each district consists of sub-districts (*kecamatan*), each *kecamatan* of villages (*kelurahan*), and each *kelurahan* of hamlets (*dusun*). The present district and sub-district boundaries were established in 1945 after slight modifications were made to the pre-existing ones (Soedarisman:1984:85-90). The boundaries of the *kelurahan* were also drawn in 1945 but only after massive amalgamations. A few of the lowest administrative units in the colonial period (*desa*) were combined and restructured into a new *kelurahan* while *dusun* were instated as the new lowest administrative unit (ibid.:201-2). This amalgamation makes the size of *kelurahan* in Yogyakarta much larger than their counterparts in other parts of Java. It is not unusual to find *kelurahan* in Yogyakarta which have more than 10,000 residents.

The right to appoint officials in the *kabupaten* and *kecamatan* offices has been left in the hands of the central and regional governments, while the way to appoint *kelurahan* officials and the head of the *dusun* (*kepala dusun* or *kadus*) has oscillated between election by the residents and selection by a committee formed at the district level. Today, *kelurahan* officials except for its head (*lurah*), and the *kadus* are chosen by a committee formed at the district level from a few applicants who are pre-selected by a committee at the *kelurahan* level. The *lurah* is elected by direct votes from the residents.

Of the four districts in Yogyakarta, Sleman and Bantul share a few common geographical and population characteristics which differentiate them from Kulon Progo and Gunung Kidul. Both of them surround the city, providing areas which have accommodated the expansion of the city, and have a higher ratio of irrigated land (*sawah*) and higher population density than the other two districts.

Table II.1: Area and Population in Yogyakarta in 1990

| | Area (km ²) | Sawah (km ²) | Population | Population density (per km ²) |
|--------------|-------------------------|--------------------------|------------|---|
| Municipality | 32.50 | 3.43 | 412,059 | 12679 |
| Sleman | 574.82 | 259.98 | 780,334 | 1358 |
| Bantul | 506.85 | 174.03 | 696,905 | 1375 |
| Kulon Progo | 586.24 | 108.13 | 372,309 | 635 |
| Gunung Kidul | 1,485.36 | 79.96 | 651,004 | 438 |
| Yogyakarta | 3,185.80 | 625.53 | 2,912,611 | 914 |

Source: Area and *Sawah*: *Daerah Istimewa Yogyakarta Dalam Angka 1990*; Population: 1990 National Census.

The most important economic activity in Yogyakarta has been agriculture. It has employed the majority of the population, especially in rural areas, and has provided the largest part of the regional income. During the colonial time, the most intensively cultivated crop was sugarcane. In many parts of its lowland regions, the percentage of land in sugar cultivation was more than 33 percent in 1920, one of the highest ratio in Java (Geertz, 1963:73). Since foreign plantations were expelled after independence, sugarcane has never recovered its dominant

position. Instead, rice, the staple food of the Javanese, has been the most popular crop planted in the lowland regions while other crops such as maize, cassava, peanuts and soybeans are cultivated either as the secondary crops in the irrigated areas or as the major crops in the mountainous ones.

For the last two decades, the primary position of agriculture in the Yogyanese economy has been gradually threatened. The Gross Regional Domestic Product, one of the indicators of the economic trend in Yogyakarta, shows that the share of agriculture in GRDP has been in decline. In 1969, it was 38.9 percent (Hill and Mubyarto, 1978:30) while it dropped to 30.5 percent in 1988 (KSY, various issues). The number of people working in the agricultural sector has also decreased from 56.3 percent in 1971 to 45.5 percent in 1990 (BPS, various issues). These changes show increasing importance of non-agricultural sectors as ways of obtaining livelihood for the people in Yogyakarta.

2.1. Kolojonggo: A Hamlet in Yogyakarta

The main road connecting the city of Yogyakarta to other major cities in the western part of Java is always crowded with speeding buses, petrol tanks, trucks, cars, motorbikes and other non-motorised vehicles such as animal-drawn carts, *becak* pedalled by manpower and bicycles. Every morning, this two-lane road is filled with rows of motorbikes and bicycles which carry villagers from rural areas to the city. The same panorama is unfolded in the late afternoon, but in the opposite lane. The expansion of the city has greatly changed the scenery alongside the road. The first *sawah* is visible only after riding about 4 kilometres further westwards from the edge of the city. Up to this point, the road is walled by one or two storey buildings accommodating shops and small restaurants. Further westwards from this point, first a large block of *sawah* halved by a narrow path and then a residential area surrounded by tall palm trees appear in turn. This scenery reminds one of the impact of the Dutch colonial policy, which divided *sawah* into two, one for sugar plantation and the other for paddy cultivation, on Yogyanese rural landscape.

Kolojonggo, the hamlet (*dusun*) considered in this thesis, is situated around 300 metres north from this road. It is located about 9 kilometres westwards from the city center and around 7 kilometres from the western edge of the city. It takes around fifteen to twenty minutes to arrive at the city from Kolojonggo by motorised vehicles, around thirty to forty minutes by bicycle, and less than two hours on foot. As this geographical proximity implies, the lives of villagers in Kolojonggo have been closely related to the city. All the policies to control the rural population, designed by court functionaries when the Yogyanese Sultanate had its independent power, by the Dutch colonial government when it overruled the Sultanate, by the Japanese from 1942 to 1945, by the Old Order government before 1965 and by the New Order Government since then, have had an immediate impact on villagers in Kolojonggo, shaping their modes of life.

Administratively, Kolojonggo belongs to *kelurahan* Sumber, *kecamatan* Gamol, and district Sleman.¹ Kolojonggo lies about 150 metres above sea level and its soil is composed mainly of young volcanic soil. The water supply is stable throughout the year and no shortage of water has been experienced since the construction of Mataram channel during the Japanese occupation period. This gives favourable conditions for the development of wet-rice cultivation. In the 1950s and 1960s, double cropping was a common practice, which has become triple cropping per year or five crops in two years after the introduction of new rice varieties in the 1970s. The fertile land in Kolojonggo has been a factor in supporting a large population. In 1993, the population density in Kolojonggo reached approximately 1800 persons per km², well above the average population density in Yogyakarta.

For the last two decades, population growth in Kolojonggo has been almost stagnant. In 1971, its population was 522 while in 1993, 544. The low population growth can be attributed to, among others, migration and the success of the family planning program. The impact of the family planning program can be appreciated by comparing the age group below 10 with that between 10 to 19 in 1993. As table II-2 shows, there were 73 children below 10, while the number of teenagers was 115. The comparison of the age group below 10 in 1971 with that in 1993 also shows a sign of declining birth rate. The number of children belonging to this group has dropped from 159 in 1971 to 73 in 1993.²

Table II.2: Population in Kolojonggo in 1971 and 1993^a

| Age | 1971 | | | 1993 | | |
|-------|------|--------|-------|------|--------|-------|
| | Male | Female | Total | Male | Female | Total |
| 0- 9 | 75 | 84 | 159 | 37 | 36 | 73 |
| 10-19 | 58 | 52 | 110 | 48 | 67 | 115 |
| 20-29 | 27 | 37 | 64 | 45 | 47 | 92 |
| 30-39 | 31 | 36 | 67 | 36 | 32 | 68 |
| 40-49 | 22 | 28 | 50 | 36 | 33 | 69 |
| 50-59 | 16 | 23 | 39 | 33 | 34 | 67 |
| 60 + | 14 | 19 | 33 | 23 | 37 | 60 |
| Total | 243 | 279 | 522 | 258 | 286 | 544 |

^a According to the official statistics made by the *kelurahan* office, the population of *kelurahan* Sumber in 1990 was 11590, of which 5749 were male and 5841 were female.

Source: 1971: Census data; 1993: Records kept in the *kadus*¹ (hamlet head's) house and interview data

The second factor contributing to a stagnant growth in population is out-migration, which has taken place in two ways. First, ten households recorded in the 1971 census emigrated from Kolojonggo as a group. Four of them moved

¹ The names of the hamlet, *kelurahan* and *kecamatan* used in the text are pseudonyms.

² A similar trend is also visible in the population of Yogyakarta. The number of children aged between 0 and 9 in Yogyakarta declined from 693,135 in 1971 to 490,755 in 1990, while people belonging to the age group of 0-9 and that of 10-19 were respectively 490,755 and 626,915 in 1990 (1971 and 1990 Census data).

to Sumatra following the government transmigration program, while six of them went to other parts of Yogyakarta. Migrations have also occurred individually, caused mainly by marriages and job-seeking. Table II-3 shows the places where the villagers who were registered in the 1971 census lived in 1993:

Table II.3: Places Where the Villagers Registered in the 1971 Census Lived in 1993

| | Age in 1971 | | | | | | | Total | (%) |
|------------------------------|-------------|------------|-----------|-----------|-----------|-----------|-----------|------------|------|
| | 0-9 | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60 + | | |
| In Kolojonggo | 73 | 37 | 37 | 50 | 33 | 18 | 4 | 252 | 48.3 |
| In the same <i>kelurahan</i> | 8 | 13 | 8 | 4 | | | | 33 | 6.3 |
| In the same region | 29 | 22 | 11 | 5 | 1 | 1 | | 69 | 13.2 |
| In Java | 29 | 27 | 2 | 1 | | | | 59 | 11.3 |
| Outside Java | 12 | 7 | 2 | 1 | | | | 22 | 4.2 |
| Deceased | 3 | 1 | | 5 | 16 | 18 | 29 | 72 | 13.8 |
| Unknown | 5 | 3 | 4 | 1 | | 2 | | 15 | 2.9 |
| Total | 159 | 110 | 64 | 67 | 50 | 39 | 33 | 522 | |

Source: As for Table II-2.

Of the seven age groups in table II-3, that between 10 and 19 reflects the trends in villagers' mobility most clearly, since people belonging to this group were on the verge of changing their residence by marriage, job-seeking or transmigration in 1971. Of the 110 teenagers belonging to this group, 50 still lived in *kelurahan* Sumber, 22 in other parts of Yogyakarta, and 34 outside Yogyakarta in 1993. Lack of data on the population mobility before 1971 makes it difficult to judge whether the mobility of this group since 1971 has been higher than that of their parents' generation before the 1970s or not. However, considering that most siblings of the villagers older than 50 lived in the vicinity of Kolojonggo in 1993, work opportunities in big cities in Java have increased rapidly over the last two decades, and the transportation revolution in the 1970s, called '*revolusi colt*', shortened the distance between different parts of Java (Hugo, 1985:62-65), it is probable that the mobility of this group since 1971 has been much higher than before. The high mobility since the 1970s is also visible in the age group below 10 in 1971, whose search for permanent settlements is not yet complete. Slightly less than a half of them had already left *kelurahan* Sumber and lived in other parts of Yogyakarta or outside of it in 1993.

Having considered a few characteristics in population development, I will focus on the socio-economic developments in Kolojonggo since the 1970s. Developments in the agricultural sector after the introduction of the green revolution, diversification of the occupational structure and changes in the structure of land tenure will be the focus of this discussion.³

³ For the economic history in Kolojonggo before 1965, see Appendix A.

2.2. Introduction of the Green Revolution

In the process of securing political power after 1965, the New Order government had to face the same issue that had troubled its predecessor: an escalating rice price and a shortage of rice. From the end of May 1967 to mid-January 1968, the rice price rose four times while the import of rice was interrupted by limited supply in the world market (Timmer,1981:37). This economic situation precipitated the government's intervention in the agricultural sector, without which political stability would have been threatened. The most important strategy adopted by the government was to initiate the rice intensification program on a large scale. From the late 1960s, the rice intensification program has continued until now, changing its names and major focuses from time to time.⁴ With unprecedented investments in agriculture, the program has succeeded in achieving rapid increase in rice production, allowing Indonesia to secure self-sufficiency in rice in 1985 (Pearson et al.,1991:16). The rice intensification program has impacted on every domain of rural life. Cropping intensification and higher yields have freed villagers from periodic hunger and made rice cultivation more profitable while new technologies have transformed the traditional ways of cultivating rice and of mobilising labour. These changes in agriculture have triggered chain reactions in non-agricultural domains.

The motto of *panca usaha* (five efforts) popularised by the government summarises the goal of the initial phase of the rice intensification program: to use high yielding rice varieties (*bibit unggul*); to apply chemical fertilisers; to use insecticides; to improve irrigation systems; and to improve methods of ploughing and planting. Although more than two decades have passed from that time, *panca usaha* is still a golden rule for peasants, but with slight modifications. Insecticides are now recommended to be used only in limited circumstances while previous emphasis on using fertilisers has been replaced by that on the right combinations and timings of application.

High yielding rice varieties, called PB-5 and PB-8⁵, were released in 1967 with the initiation of the *Bimas Baru* program. These new varieties had several characteristics which distinguished them from local varieties and which promised higher yields than the latter. They overcame a 'nitrogen to yield threshold', could be grown in many latitudes regardless of season, could support numerous heavy panicles of grain without lodging and could be harvested in a relatively short period of time (Fox,1991a:65). The acceptance of high yielding varieties by peasants was rapid. 31 percent of the rice planted for the 1971/1972 wet

⁴ For *Bimas Gotong-royong* in 1968/69, see Franke (1973:29-47) and Utrecht (1973:157-160); for *Bimas Gaja Baru* in the 1970s, see Palmer (1977:36-47) and Timmer (1981:38-40); and for *Insus* starting from 1979, see Mubyarto (1982:49-50).

⁵ For the breeding history of these new seeds, see Fox (1991a:65-66).

season in Indonesia consisted of new seeds and the figure reached 67 percent for the 1979/1980 wet season (ibid.:66-67).

To the peasants in Kolojonggo, where water supply is constant all year round, the most advantageous feature of high yielding varieties was their shorter growth duration. Compared with the traditional varieties, which required 150 days or more to be harvested, PB-5 or PB-8 could be harvested in 130-140 days. The growth duration was shortened further in the later released varieties which mature in 105-110 days (Khush,1985:456). The shorter growth duration opened an era of triple cropping in one year or of five crops in two years, which made rice cultivation even more profitable.

The use of chemical fertilisers for rice cultivation was already reported in the Old Order. However, the high price and inconvenience in purchasing fertilisers hindered their extensive use (Soemarjo,1959:32-33; Utrecht,1973:159). Therefore, one of the aims of the rice intensification program was to secure peasants' easy access to chemical fertilisers at an affordable price. The government extended distribution networks of fertilisers, subsidised their prices, and extended credit for purchase (Mears,1981:123-132). With these efforts, chemical fertilisers were introduced into farming with the rapidity that new seeds were. Only a few years after the implementation of the government program, around 70 percent of the peasants in a Yogyane village were using chemical fertilisers, ranging from 67 to 245 kg. per hectare (Penny and Singarimbun,1973:32-33). The amount of fertiliser application increased quickly, so that the average amount rocketed from 163 kg. per hectare in 1972 to 300 kg. in 1981 (Fox,1991a:77-78). The same trend has continued with the average amount of fertiliser application reaching 426 kg. per hectare in Yogyakarta in 1990 (KSY,1990).

The outcome of the adoption of high yielding varieties and chemical fertilisers has been a remarkable increase in yields per hectare. In Yogyakarta, the average rice production, which had been below 35 quintals (1 quintal = 100 kg.) of unhusked rice per hectare before 1962 (KSY,1957 & 1963), increased to 45 quintals per hectare in 1975 and to 58 quintals in 1989 (KSY,various issues). As the cropping ratio has changed from double to triple in some parts of rural Yogyakarta, the yields that Yogyane peasants can obtain from the same size of *sawah* have been more than doubled since the implementation of the rice intensification program. This increase in yields has subsequently decreased the size of *sawah* required to secure a staple rice supply for a household. If it is assumed that a household consisting of five members consumes about 1.5 kg. of rice per day⁶, less than 1000m² of *sawah* is now required to satisfy its annual rice consumption in an area where triple cropping is possible. Table II-4 calculates

⁶ This is a figure obtained from 25 sampled households in Kolojonggo. Penny and Singarimbun report a figure which is slightly higher than that presented in the text, namely, one-third of a kilo per day or 120 kilos per year per person (1973:20).

the returns that a peasant could obtain from 1000m² of *sawah* in 1993 with the premise that yields per hectare were 60 quintals of *gabah basah* (unhusked paddy containing approximately 25 percent of moisture).⁷

Table II.4: Inputs and Outputs for Rice Cultivation Per Cropping (per 1000m²)

| Cost | Unit | Amount | Note |
|----------------------------|-----------|--------------|---|
| | | (kg.) | |
| Inputs | | | |
| Seeds | GB | 15.6 | 4.9 kg. of seeds purchased in the market; 1 kg. of seeds = Rp 800; 1 kg. of <i>gabah basah</i> = Rp 250 |
| Ploughing | GB | 35.9 | Rp 8990.5 per 1000 m ² |
| Planting | GB | 21.7 | Rp 5428 per 1000 m ² |
| Fertilisers | GB | 59.5 | 45.14 kg. per 1000 m ² ; Rp 330 per 1 kg. of fertiliser; family labour for fertilising |
| Weeding | - | - | Family labour |
| Harvesting | GB | 75.0 | 1/7 of the total production |
| Total Costs | GB | 207.7 | |
| Yields | GB | 600.0 | |
| Returns | GB | 392.3 | |
| Loss in Drying | - | 58.8 | Loss in drying = 15 percent ^a |
| Returns after Drying | GK | 333.5 | |
| Loss in Milling | GK | 116.7 | Conversion Ratio of 0.65 from GK to B ^b |
| Cost of Milling | B | 13.9 | Rp 25 for 1 kg. of GK; 1 kg. of <i>Beras</i> = Rp 600 |
| Net Returns in Rice | B | 202.9 | |

Source: 101 households in three hamlets in *kelurahan* Sumber

Note: GB = *Gabah Basah*; GK = *Gabah Kering* (unhusked dry rice); B = *Beras* (Milled Rice).

^a The loss in the process of drying is dependent on the season and geographical characteristics of *sawah*. Although these make it impossible to calculate the exact amount of loss during drying, it is estimated to be 15 percent in the text for convenience' sake. This is based on the consideration that new rice varieties contain 25 percent of moisture when harvested and many farmers dry paddy for their own storage to less than 14 percent of moisture (Mears, 1981:48 & 146).

^b 0.65 is a conversion ratio used by the Indonesian Central Bureau of Statistics (BPS) for calculating the amount of *beras* derived from *gabah kering* (Fox, 1991a:80).

Table II-4 shows that 1000m² of *sawah* can yield 202.9 kg. of milled rice per cropping. If a household owning 1000m² of *sawah* cultivates rice three times a year, it can acquire about 50 kg. of rice per month or more than 1.5 kg. per day. This implies that the size of *sawah* required to secure annual food consumption is just half of what villagers in double cropping areas needed for the same purpose in the 1950s.⁸ One effect of the increase in yields has been eradication of rice

⁷ According to the government statistics, yields per hectare in Yogyakarta have been about 50-60 quintals of unhusked dry rice (*gabah kering*) since the 1980s. In this respect, the yields of 60 quintals of *gabah basah* used in the text are 10-15 percent less than the official statistics. As most villagers commented that the average yields per 1000 m² reached 6 quintals of *gabah basah* and the average yields per 1000 m² in the 52 cases of the harvest measured by a rice trader were 5.9 quintals of *gabah basah*, 6 quintals of *gabah basah* is used in the text for convenience' sake.

⁸ In the 1950s, the average yields (unhusked dry rice) per hectare in Yogyakarta were 25.05 quintals (KSY, 1957 & 1963). From this, it can be assumed that 0.2 hectare of *sawah* could produce about 500 kg. of unhusked dry rice per cropping. When a household cultivated 0.2 hectare of *sawah* with its own family labour, the production cost could be dropped to 60-70 kg. of unhusked rice, leaving 430-440 kg as net yields. If unhusked rice was converted to husked one at the rate of 1:0.65 and pounding was carried out by family labour, the household could secure about 280 kg. of rice. As double cropping was

scarcity in rural areas. Villagers in Kolojonggo who were born after the mid-1960s unanimously commented that they have not experienced any shortage of rice from their childhood on.

2.3. Development of the Rural Labour Market in Kolojonggo

It has been suggested that the introduction of labour saving mechanisms and rationalisation of labour use after the 1970s reduced work opportunities in the agricultural sector. The examples chosen to show this trend are the replacement of the *ani-ani* (finger knife) by the sickle, of hand threshing and pounding by the diesel-powered threshers and hullers, of hand weeding by rotary or toothed weeders, the introduction of tractors, and adoption of the *tebasan* system for the harvest (Collier,1981:161-5; Hüsken and White,1989:254; White,1989:76). Of these practices, the most substantial impact on the rural labour market in Yogyakarta has been from the introduction of the rice hullers and sickles. The diesel-powered threshers have not been adopted widely, rotary or toothed weeders had already been used in the 1950s (Soemarjo,1959), tractors have operated side by side with animals instead of replacing them, and *tebasan*, which existed even before the 1970s (Syafri,1978:7), has not limited the number of harvesters.⁹ This implies that labour saving mechanisms adopted after the 1970s affected largely the labour market of women whose major agricultural work involved harvesting and hulling.

In dealing with the rural labour market of men, what should be considered is cropping intensification. As no substantial difference exists in the pre-harvest labour input before and after the use of high yielding rice varieties (Montgomery,1974:204; Collier,1979:10-11), it is obvious that change in cropping intensification from double to triple has increased the annual labour input into a certain size of *sawah*. This means that more work opportunities have been created for men in the rural agricultural market since the green revolution.

Papanek suggests that the effect of cropping intensification in creating more work opportunities may have been offset by an increase in the rural population (1985:28-29). Although persuasive, this explanation does not consider one

possible, this amount of rice could be harvested once every six months. This indicates that, when there was no severe crop failure, 2000 m² of *sawah* could give its holders about 1.5 kg. of rice per day. This amount of rice was large enough to meet daily rice consumption of a family of five members, which ranged, according to Pandam, 100 to 200 grams per person (1958:42). For more about the production cost and rice consumption in the 1950s, see Appendix A.

⁹ *Tebasan* refers to a system where peasants sell their rice before the harvest to a middleman (*penebas*) who will do the harvest by himself or herself. As Hayami and Hafid point out, the introduction of *tebasan* does not change directly labour requirements for the harvest. The more important factor to determine labour requirements for the harvest is whether the introduction of *tebasan* is accompanied by a change in payment from output shares to cash wages or not. When cash wages are not applied, the *penebas* has no strong incentive to decrease the number of workers since a share that he or she can secure will not change much irrespective of the number of harvesters (Hayami and Hafid, 1979,104-5), although the problem of controlling harvesters may prompt him or her to keep their number lower.

important factor, namely, the changing orientation of teenagers who constitute the major providers of new labour. Traditionally villagers began to be involved in agricultural work in their early teens. According to White, in the early 1970s, Yogyane teenagers between the ages of 10 to 13 started agricultural work such as ploughing, planting and harvesting both in their parents' *sawah* and as wage labourers. By their late teens, the proportion of time allocated to productive labour was almost similar to that of adult villagers (1977:275-282). Beginning sometime in the late 1970s or in the 1980s, teenagers' early involvement in the rural labour market gradually slowed to the extent that in 1993-94, it seldom happened that teenagers worked either in their parents' *sawah* or as daily agricultural labourers.¹⁰ One of the factors accelerating this trend is the expansion of secondary education as table II-5 indicates:

Table II.5: Last School Attended by Villagers Aged between 15 and 34

| | Year of Birth | | | |
|--------------------|---------------|---------------|----------------|---------------|
| | 1960-64 I | 1965-69 II | 1970-74 III | 1975-79 IV |
| None | 0 | 0 | 0 | 0 |
| Primary School | 24 | 18 | 3 | 0 |
| Junior High School | 4 | 7 | 12 | 5(15) |
| Senior High School | 5 | 17 | 25 | 7(22) |
| Tertiary education | 3 | 5 | 6 | 3 |

Source: Records kept in the *kadus*' house and interview data.

Note: Numbers in parenthesis are the teenagers who were enrolled in junior or senior high school in 1993.

One of the notable features in table II-5 is the contrast in the length of the schooling period between Group I and the other Groups. While two thirds in Group I stopped their study at the primary school level, more than half of those in Group II proceeded to secondary school. The period of schooling becomes longer for the younger cohort, so that all in group IV continued their study at least to junior high school and the majority of them proceeded to senior high school.

Although education and withdrawal from agricultural work does not have any evident causal relation¹¹, no teenagers in Kolojonggo work as wage labourers

¹⁰ During three months afternoon observation of around 10 hectares of *sawah*, I witnessed only a few cases where teenagers worked in the *sawah* of their parents. Of these, there was one case where teenagers worked as daily labourers. However, this case was an exceptional one triggered by an extraordinary situation. A man who cultivated about 2500 m² of *sawah* lost his chance to weed at the right time and the whole *sawah* was covered with weeds. For a couple of weeks, he tried to find labourers to help him weed, but in vain. At last, he asked his grandson to bring his friends, promising to pay almost twice what was usually paid to daily labourers. His grandson succeeded in bringing five friends. After working three afternoons, however, all of them disappeared from the *sawah* without finishing weeding the whole plot.

¹¹ Asked why they did not work in *sawah*, most teenagers answered that they were lazy or that they felt shame if they worked in the agricultural sector. This attitude was different from that of a few villagers in their late thirties and forties who were quite proud to say they had earned the money to continue their study to secondary and tertiary schools by working in their parents' *sawah* or in some cases, by share-cropping others' *sawah*. Their attitude points out that before the mid-1970s, teenagers

in the agricultural sector while they attend school, and their status as students is accepted, both by teenagers and their parents, as an uncontested excuse for not working in *sawah*. This implies that, unlike what Papanek suggests, rural population growth, especially after the 1960s, has not played a significant role in offsetting the favourable impact of cropping intensification on the rural labour market for men, at least in Kolojonggo. On the contrary, teenagers' late involvement in productive labour has worked to widen work opportunities in the agricultural sector.

In sum, cropping intensification after the green revolution and the gradual withdrawal of teenagers from the agricultural labour market have been two of the factors helping to ease the pressure on the existing labour market of men in Kolojonggo.¹² In addition to these factors, expanding work opportunities in non-agricultural sectors from the mid-1970s have also played a role in hindering the shrinkage of the agricultural labour market. In order to understand this development, a summary of the primary occupations of all male villagers above the age of 15 in Kolojonggo is presented in table II-6.

were not reluctant to work in *sawah* and saw no incompatibility between one's status as a student and as an agricultural labourer. It is not certain why this change has happened.

¹² The positive impact of crop intensification on the rise of employment in rice cultivation is also noticed by Hinkson (1975:333) and Schweizer (1987:66).

Table II.6: Primary Occupations of All Male Villagers Aged above 15 in Kolojonggo

| | Year of Birth | | | | | Total |
|--|---------------|-----------|-----------|-----------|-----------|------------|
| | - 1939 | 1940-49 | 1950-59 | 1960-69 | 1970-79 | |
| A Agriculture | | | | | | |
| Owner Cultivation | 10 | 5 | 5 | 1 | | |
| Owner Cultivation + Tenant | 2 | | | | | 2 |
| <i>Sawah</i> Owner | 5 | | | | | 5 |
| Tenant | 3 | 4 | | | | 7 |
| Labourer | 4 | 2 | 1 | 1 | | 8 |
| Tenant + Labourer | 3 | 2 | 2 | | | 7 |
| Owner Cultivation + Labourer | 1 | 1 | | | | 2 |
| Sub Total | 28 | 14 | 8 | 2 | | 52 |
| B Non-Agricultural works mainly in village | | | | | | |
| Rice Trader | | | 1 | | | 1 |
| Livestock and Fish | | 2 | 3 | | | 5 |
| Non-agricultural Labourer | | 2 | 2 | 2 | | 6 |
| Self-employed/Entrepreneur | 2 | 3 | 2 | 2 | | 9 |
| Sub Total | 2 | 7 | 8 | 4 | | 21 |
| C Non-Agricultural works mainly outside village | | | | | | |
| Trader | | 2 | 2 | 4 | 1 | 9 |
| Self-employed/Entrepreneur | | 2 | | 1 | | 3 |
| Construction Labourer | 3 | 2 | 9 | 14 | 1 | 29 |
| Factory Labourer | | | 2 | 9 | 3 | 14 |
| Driver/Conductor | 1 | | 4 | 2 | 1 | 8 |
| White Collar Worker | | 5 | 7 | 3 | | 15 |
| Blue Collar Office Worker | 1 | 2 | | 2 | | 5 |
| Sub Total | 5 | 13 | 24 | 35 | 6 | 83 |
| D Students and Unemployed | | | | | | |
| Student | | | | 3 | 32 | 35 |
| Unemployed | 2 | 2 | 1 | 1 | 6 | 12 |
| Sub Total | 2 | 2 | 1 | 4 | 38 | 47 |
| Total | 37 | 44 | 40 | 45 | 44 | 203 |

Source: As for Table II-5.

Note:

A. Tenant: those who sharecrop or rent others' *sawah*; *Sawah* owner: those who own *sawah* but give it to others on a sharecrop basis, receiving one-half of the yields.

B. Livestock and Fish: duck and pig breeders and an owner of a freshwater fish nursery; Non-agricultural Labourer: workers making bricks and *emping* (chips made of *Gnetum gnemon*); Self-employed/Entrepreneur: bicycle repairers, a bamboo furniture maker, a metal worker, a masseur, owners of places making bricks and *emping*, and a vendor of iced drinks.

C. Trader: shop owners (fruit) and middlemen dealing with *emping*, freshwater fish and chicken; Self-employed/Entrepreneur: a gatherer of red ants' houses in mountainous areas, a street vendor and a barber; Factory Labourer: one technician employed in a motorbike repair shop was included in this category; White Collar Worker: civil servants, teachers, a nurse and policemen; Blue Collar Worker: a night watchman, security guards and clerks.

Table II-6 shows that non-agricultural work provides the primary source of livelihood for two-thirds of male villagers in Kolojonggo. Of 203 male villagers aged over 15, those who work primarily in the agricultural sector number 52

while those who work in non-agricultural sectors number 104 excluding students and unemployed villagers. When considering age, table II-6 indicates the changing pattern of employment: the younger villagers are, the less they are employed in the agricultural sector. The majority of villagers born before 1940 are employed in the agricultural sector while the ratio of those working outside this sector gets higher as villagers are younger. In the case of those born after 1960, only two chose agriculture as their primary occupation. The second notable feature in table II-6 is that villagers' occupations are distributed in diverse sub-sectors of the economy. This occupational diversity is not a new phenomenon. Even before the 1970s, villagers' efforts to maximise their income led them to take employment opportunities wherever possible. White gives us a finding that slightly less than 50 percent of villagers in the early 1970s had their primary occupation in non-agricultural sectors (White,1976:139). What makes the period after the 1970s distinctive is that the majority of those working in non-agricultural sectors work outside the village, mostly in the city. Of the 104 villagers who are employed primarily in non-agricultural sectors, 83 work outside the village.¹³ The third interesting point is the importance of the construction sector as a source of employment. Twenty-nine villagers work in the construction sector as masons, carpenters or assistants.¹⁴

The expansion of the labour market for construction labour, especially after the second half of the 1970s, was triggered by increasing government subsidies for rural development and the expansion of the city.¹⁵ Development funds were allocated to build infrastructure such as roads, schools and government buildings (Mubyarto,1982:46-7), while the expansion of Yogyakarta city involved constructing new buildings and houses. These two developments brought favourable conditions for the expansion of the construction sector. The booming construction sector then accelerated demands for construction labour to the extent that from the late 1970s on, villagers from rural areas have been readily employed as assistants of artisans irrespective of their previous work experiences. Apart from this easy access, relatively higher wages in construction labour than

¹³ In the case of construction labour, work opportunities are also available within the village. However, as all construction labourers are not reluctant to work outside the village and the majority of construction sites are placed outside it, all of them are classified as working outside.

¹⁴ Widening job opportunities in the construction sector after the 1970s do not seem to have been a peculiar phenomenon in Kolojonggo but to have been widespread in other parts of rural Java. According to statistics, the most rapid annual growth in non-agricultural employment in the 1970s occurred in the construction sector, followed by the transport and service sector. The construction sector accounted for 21 percent of all non-agricultural employment growth in rural areas. This pace was not halted in the later period, so that employment in the construction sector grew at 3.7 percent per annum and accounted for 27 percent of all non-agricultural employment growth in the first half of the 1980s (Manning,1988: 52-54).

¹⁵ In 1963-73, Yogyakarta was the only province to record a decline in the area of *sawah* under cultivation by a yearly average of 1.4 per cent, or over 6,500 hectares (Hill and Mubyarto,1978,42-43). In 1980-1990, the *sawah* area in Yogyakarta decreased by 3881 hectares (BPS, various issues).

in agriculture have been an incentive for rural villagers to work as construction labourers.¹⁶

Sometime in the 1980s an interesting development took place which helped to expand work opportunities in the construction sector. Traditionally the labour needed to build a private house in the hamlet was provided by close neighbours (*gotong-royong*). The mobilisation of *gotong-royong* was based on reciprocity, so that the duty of the host was to reciprocate his neighbours' labour in the future and no cash payment was involved.¹⁷ In 1993-94, *gotong-royong* was still used but only for the purpose of improving a house and on the condition that it lasted for one or two days. According to villagers, the increasing number of those working outside the village made it impossible to initiate a *gotong-royong* during weekdays and this forced the replacement of *gotong-royong* with wage labour to construct a house. The result of the use of wage labour for constructing a house is that the chances for working as construction labourers have increased even in rural areas.

The withdrawal of people working in non-agricultural sectors from agricultural wage labour has also been a factor in hindering the shrinkage of the agricultural labour market since the 1970s. Their withdrawal may be explained by the negative cultural value attached to agricultural wage labour. When work chances in non-agricultural sectors were not as many as in the period after the 1970s, one's access to agricultural wage labour was dependent on the favour of the landowners and this allowed the extension of unequal economic relations into non-economic domains. Wage labourers did unpaid work for their employer on a regular basis and when the employer hosted certain celebrations, not only the labourers but their family members had to assist in the preparation process. In this respect, employers and labourers were not bound by pure economic relations but by patron-client relations where the former could exert authoritative power over the latter. It seems that this previously embedded inequality has been a factor hindering the involvement of labourers in the agricultural labour market, although the basis of the relations has become increasingly economic. Villagers' easy access to construction work can also explain the withdrawal of non-agricultural labourers from agricultural wage labour. When one is laid off work, he can be easily employed in the construction sector until he finds a new job. As a result, the construction sector now plays the role of provider of

¹⁶ In 1993, the daily wage in the construction sector reached Rp 2500 for the novices, Rp 4000 for masons, and Rp 5000 for carpenters, whereas remuneration in agricultural work (hoeing) was Rp 1500-2000. The higher wage in the construction sector seems to have continued from the early 1970s on. In the early 1970s, the daily wage of agricultural labour (hoeing) reached Rp 60-90 in the Bantul district and Rp 60-80 in the Kulon Progo district while that of construction work, Rp 100-125 and Rp 80-100 respectively (Maurer, 1991:108-109; White, 1977:184 & 188). In 1981, the daily wage of unskilled work in public construction projects was as high as Rp 1,000 (Mubyarto, 1982:55), equivalent to about 4 kg. of rice, which must certainly have been higher than that in the agricultural sector.

¹⁷ Carpenters were exceptional, so that they were given cash payment even before the 1970s.

temporary job opportunities for the unemployed, a role previously played by the agricultural sector.

In sum, no rapid decrease in agricultural wage labour, expanding work opportunities in non-agricultural sectors, the longer periods of education and the formation of a boundary between agricultural and non-agricultural wage labour have helped to lessen pressure on the rural labour market. Many of those employed previously in the agricultural sector have sought new employment in non-agricultural sectors while most villagers who are newly incorporated in the labour market now start their career in non-agricultural sectors. One impact of this change is that a shortage of agricultural labour has started to be felt by the peasants in Kolojonggo, although they can see many unemployed youngsters or temporary unemployed villagers.¹⁸ As a result, if someone has the intention to work as an agricultural wage labourer, he is instantly given a job by those who are desperately in need of labour. The decreasing pressure on the rural labour market is reflected in the amount of daily wage that agricultural labourers can secure. While agricultural labourers in Yogyakarta had received about 1 kg. of rice for a day's ploughing in the early 1970s (Penny and Singarimbun, 1973:26; White, 1991:109; Maurer, 1991:109), they received about 3 kg. of rice in 1993 for the same amount of labour.¹⁹

Compared with the rural labour market of men, that of women has followed a somewhat different developmental course. The introduction of labour saving mechanisms, namely, the sickle and diesel powered huller, replaced, although not totally, the *ani-ani* and hand pounding, and brought about a significant decrease in work opportunities. While 200 or more man-days were needed to harvest 1 hectare of *sawah* with the *ani-ani*, 75 man-days were enough to carry out the same work after the introduction of the sickle (Collier, 1981:162). In some parts of Java where the *tebasan* system limited the number of harvesters and the *penebas* (rice trader) employed the same person over time (Collier et al., 1974:20-3), or where the *penebas* employed men rather than women (Hüsken, 1979:146), the majority of those who had once been permitted to participate in the harvest were deprived of any chance to do so. The diesel powered huller was another novelty having a similar effect on the women's rural labour market. All work opportunities in pounding disappeared and women villagers who usually received 10 percent of the amount they pounded lost this important source of income (Stoler, 1985:59). These changes make it possible for Collier to comment that 'the imperatives of efficiency and profitability are

¹⁸ Labour shortage in the rural area is also reported by several scholars. See Collier et al. (1982,97), Manning (1987:72), and Naylor (1991:74-77).

¹⁹ Lack of reliable statistical data concerning trends in agricultural wages makes it difficult to know at which point in the last two decades this increase in daily wages began, but the trend was clearly evident in the mid-1980s. According to Maurer, a day's ploughing in Bantul district was worth 4 to 5 kg. of rice in 1984 (1984:118) and was equivalent to slightly more than 4 kg. in 1987 (1991:109).

beginning to exact their toll in the erosion of traditions where elasticities in the production function allowed for high rates of labour absorption within the rice producing sector' (Collier,1981:171).

In Kolojonggo, the position of female labourers has not been as bad as that of their counterparts in other parts of Java, although much worse than before the 1970s. The primary reason for this is that the *ani-ani* has not been replaced by the sickle. It is not certain why the sickle has not been accepted by villagers²⁰ but the effect of the continuing use of the *ani-ani* is quite clear. A sudden shrinkage of the agricultural labour market was hindered and the benefit of cropping intensification, that is, absolute increase in opportunities to participate in the harvest, could be shared by a much wider circle of female labourers.

The shift in the mode of mobilising harvest labour has also helped to ease pressure on the rural labour market for women. Before the 1970s, the mobilisation of labour for the harvest in Kolojonggo was based on a semi-open system. All of those who wanted to participate in the harvest could do so, if they received permission from the owner. This system allowed participation of women living outside Kolojonggo in harvesting *sawah* in Kolojonggo. In the 1950s, it was reported in a hamlet located around 5 kilometres northeast of Kolojonggo that one third of harvesters came from the hamlet to which the *sawah* owner belonged, one third from neighbouring hamlets and other *kecamatan*, and the rest from different districts (Soedjito,1957:132). This composition shows that there was room for manipulation in the harvest, should a change occur in the existing structure of labour market. When the rice huller replaced hand pounding and more female villagers wanted to participate in the harvest, the pattern of mobilising harvest labour was modified. The semi-open system was gradually replaced by a semi-closed system, namely, one in which the owner did not prohibit villagers living in the same or neighbouring hamlets from participating in the harvest but did not allow those from a different *kelurahan* to do so. With this shift, the work opportunities in harvesting once taken by outsiders were

²⁰ When asked about the use of the *ani-ani*, most villagers commented on the duty to neighbours at first. As the use of the sickle reduces harvest labour greatly and decreases the chances of poor village women earning income, it is better, according to them, not to replace the *ani-ani* with the sickle. They also mentioned the production loss entailed by the use of the sickle. As more grains drop off when harvested by the sickle than by the *ani-ani*, the *ani-ani* can secure more rice for *sawah* owners. The same opinion is retained by the *penebas*, who are more sensitive to the introduction of new technology. Four *penebas* who were interviewed answered that they have never tried to use the sickle due to potential production losses. What is interesting in this explanation is that most villagers including *penebas* have had no experience of using the sickle and, accordingly, no chance to compare these two harvest tools. In this respect, what has a more serious impact on the use of the *ani-ani* is not that the *ani-ani* actually guarantees more paddy than the sickle but that villagers believe the sickle brings lesser yields than the *ani-ani*. This belief is based on villagers' assumption that the bodily movements of harvesters are much larger and rougher when they use the sickle than when they use the *ani-ani*, so that harvesting with the sickle will cause higher ratio of grain loss. Irrespective of whether this assumption is right or wrong, this belief seems to have been one of the most important factors in the continuing use of the *ani-ani* in Kolojonggo and its vicinity.

given to those living in the same or neighbouring hamlets. The change in the mode of mobilising harvest labour entailed a change in the method of fixing harvest wages. When harvesters from distant places were allowed, the dividend allocated to them (*bawon* or *maro*) was up to 1:17, that for harvesters from the same village was between 1:6 to 1:8 and that for harvesters who had close relations with the owner, less than 1:6. After the prohibition on outside harvesters, the share allocated to ordinary harvesters from the same and neighbouring hamlets dropped up to 1:13. With this modification in *bawon*, the share that the owners could secure did not decrease much; they probably could get more than before.

It is not certain whether the increase in harvest work caused by cropping intensification and the change in the mode of recruiting harvest labourers could compensate the loss that the diesel-powered huller brought in or not. However, it is clear that these helped to hinder an abrupt shrinkage of the labour market of women at the first stage of the green revolution and gave female villagers a better chance to adjust to the new economic environment. In this process of adaptation, female villagers were less fortunate than their male counterparts since they did not have access to the construction sector. The only sector which they could easily move into was trade, which brought about a striking influx of ex-female agricultural labourers into local small-scale trade (Stoler, 1975:59).

The development of the agricultural labour market of women in the 1980s has also been influenced by factors which have affected that for men. As Javanese parents do not discriminate between male and female children in the matter of education, the schooling period of female teenagers has also become longer, impeding the flow of new agricultural labourers into the labour market. Widening work opportunities in the manufacturing and service sectors after the 1980s have also helped to ease the pressure on the labour market. The primary occupations of female villagers who are older than 15 are summarised in table II-7.

Table II.7: Primary Occupations of All Female Villagers Aged above 15 in Kolojonggo

| | Year of Birth | | | | | Total |
|--|---------------|-----------|-----------|-----------|-----------|------------|
| | - 1939 | 1940-49 | 1950-59 | 1960-69 | 1970-79 | |
| A Agriculture | | | | | | |
| Self Cultivation | | | 1 | | | 1 |
| Planter and Harvester | 1 | 2 | 3 | 2 | | 8 |
| Casual Harvester | 11 | 4 | 1 | 1 | | 17 |
| Professional Harvester | | 2 | 2 | 1 | | 5 |
| Sub Total | 12 | 8 | 7 | 4 | | 31 |
| B Trade | | | | | | |
| Trader - <i>warung</i> and shop | 2 | 2 | 6 | 2 | | 14 |
| Trader - <i>jamu</i> | 1 | 4 | 2 | 3 | | 10 |
| Trader - <i>mlinjo</i> and <i>emping</i> | 8 | 6 | 4 | 2 | | 20 |
| Trader - <i>pasar</i> (local market) | 3 | 2 | 2 | 2 | | 9 |
| Trader - others (brokers) | | 2 | 2 | 2 | | 6 |
| Sub Total | 14 | 16 | 16 | 11 | | 57 |
| C Non-Agricultural Work | | | | | | |
| <i>Tempe</i> Producer | 4 | | | | | 4 |
| Entrepreneur/Self-employed | 1 | 1 | 2 | 3 | | 7 |
| Animal Husbandry | | 2 | 1 | 2 | | 5 |
| Non-agricultural Labourer | 1 | 4 | 1 | 3 | | 9 |
| Factory Worker | | | 1 | 2 | 2 | 5 |
| Shopkeeper | | | | 3 | 4 | 7 |
| White Collar Worker | | 2 | 5 | 4 | 1 | 12 |
| Sub Total | 6 | 9 | 10 | 17 | 7 | 49 |
| D Students and Unemployed | | | | | | |
| Student | | | | 1 | 33 | 34 |
| Pensioner | 1 | | | | | 1 |
| Unemployed (non-harvester) | 13 | 2 | 5 | 7 | 10 | 37 |
| Unemployed (harvester) | 1 | | 3 | | | 4 |
| Sub Total | 15 | 2 | 8 | 8 | 43 | 76 |
| Total | 47 | 35 | 41 | 40 | 50 | 213 |

Note: A. Casual Harvester: those who harvest others' *sawah* on an irregular basis when they are asked to do so; Professional Harvester: those who work daily with the *penebas*.

B. *Warung*: owners of small shop in the hamlet selling a variety of daily necessities; Shop: owners of cosmetics, clothes and fruits shops in the local market or in the city; *Jamu*: *Jamu* is a traditional Javanese tonic made of medicinal herbs. It is made at home and sold either in the local market or by making door-to-door visits to each house in a certain rural area; *Mlinjo* and *Emping*: *mlinjo* refer to fruits of *Gnetum gnemon* and *emping*, snacks made from *mlinjo*; Broker: rice traders and traders who buy chicken, *tikar* (a plaited mat) and coconut sugar from rural areas and sell them to other middlemen.

C. Entrepreneur: seamstress, owners of places making bricks and *emping*, and a weaver; Animal Husbandry: pig breeders; Non-agricultural labourer: workers making *emping*; Factory Workers: workers in weaving factory located in Sumber; Shopkeeper: waitress in the restaurant and clerks in shops in the city; White Collar Worker: teachers, civil servants and administrators in the private sector.

D. Unemployed (non-harvester): those who do not have a specific job nor participate in harvest work; Unemployed (harvester): those who do not have a specific job but participate in the harvest of their own *sawah*.

Table II-7 shows that trading is the most important source of income for women of all ages. The most common items are *jamu* (traditional Javanese tonic made of medicinal herbs) and *emping*, while those classified as market traders handle a variety of merchandise including chicken and duck eggs, rice, vegetables, home-made snacks, *tempe* (fermented soybean cake), the skin of *mlinjo* and so on. This shows that there has been no remarkable change in the items of trade over time. Most still trade in what their predecessors did before the 1970s. In the mode of trading, however, a few changes have taken place. On the one hand, more villagers specialise in one merchandise rather than handling diverse items. Of five categories of traders in table II-7, *warung* owners and some market traders handle diverse merchandise while others sell only one item. On the other hand, the mobility of women traders is much greater than for their predecessors whose activities centred mainly on the local market. Many of them bypass the local market and deal directly with traders and customers in the city and some of them do their trading activities outside Yogyakarta.²¹ One of the impacts of their higher mobility is that their activity in agriculture is limited to the harvest of their own *sawah*. Of 57 women traders in table II-7, 7 attend the harvest of their own and others, 22 participate only in their own harvest, 17 do not attend the harvest, although their families have *sawah* to be harvested, and 11 traders whose families do not cultivate *sawah* do not participate in any kind of the harvest. This implies that harvest work and trading have become less and less compatible. Only 7 of 57 woman traders are ready to harvest for others while the rest are not. The participation rate in agricultural work in general and in agricultural wage labour in particular is almost zero in the case of those who are classified under the categories of entrepreneur, factory worker, shopkeeper, white collar worker and student.

As is the case in the development of the agricultural labour market of men, increasing work opportunities in non-agricultural sectors, the longer schooling periods for teenagers and the withdrawal of many villagers from agricultural work have eased pressure on the agricultural labour market of women. Planting is now considered to be a highly specialised task so that only two groups of women form two teams and monopolise most planting work. In the case of the harvest, the number of casual harvesters has decreased considerably and villagers born after the 1950s seldom participate in the harvest of others' *sawah*. This brings about a situation in which a rice trader in Kolojonggo complained to me that only five from Kolojonggo wanted to work with her, so that she had to recruit harvesters from hamlets located in the mountainous area of Sumber.

²¹ A good example is the traders of *emping* and *jamu*. Three women traders of *emping* from Kolojonggo do their trade regularly with traders in Semarang. Three women traders of *jamu* have stools to sell their product in a local market outside Yogyakarta and they alternately stay either in Kolojonggo or in a town in Central Java. Other *jamu* traders circulate in a certain rural area, usually, in other *kecamatan* everyday.

Compared with the rise in daily wages of male agricultural labourers for the last two decades, that in harvest labour is less remarkable. The *bawon* which dropped to 1:13 in the 1970s has risen to 1:7, so that in 1993, a harvester could obtain 3.5-4 kg. of unhusked rice, or about Rp 1000 for four to five hours work. However, this amount was still about Rp 500 less than wages paid for other agricultural work.²² Unlike the harvest, the return for a day's work of women planters, weeders and professional harvesters was almost similar to those for men. They could earn between Rp 1500 to Rp 2000 for a day's work.²³ This wage scale shows that the daily wage for women's agricultural work has risen at a similar pace with that of men's, although harvest labour is exceptional.

To summarise, there is no clear sign in Kolojonggo that work chances in the agricultural sector have declined since the introduction of the green revolution. Cropping intensification, expanding work opportunities in the non-agricultural sector, the longer periods of education for teenagers and the formation of a more rigid boundary between agricultural and non-agricultural work have helped to decrease pressure on the rural labour market. This lessening pressure is reflected in the daily wage that agricultural labourers earn. Except for harvest labour, the daily wage in the agricultural sector has risen, so that agricultural labourers in Kolojonggo obtained about 3 kg. of rice for a day's work in 1993, almost three times higher than in the early 1970s.

2.4. Differentiation of Peasants in terms of Landholdings

When asked to choose a period after independence when peasants could expand their landholdings, many villagers selected the 1970s, just after the introduction of the green revolution. The reason for this selection was unanimous: farming was more profitable at that time than it had previously been and is now. The record shows that the memory of villagers is generally to the point. It was in the 1970s that transactions of *sawah* and *pekarangan*, which had slowed down after independence became more active, although the amount being transacted was not as large as it had once been before independence. The cases of land

²² The diversified ratio of *bawon* makes it possible for the harvesters who have close relation with the owner to be better paid than others. In their cases, the *bawon* reached up to 1:4, making their daily wage around 6 kg. of unhusked rice (Rp 1500). This amount was almost equal to the wage for other agricultural labour.

²³ In the case of planting, the wage was fixed not in terms of labour time but in terms of the size of *sawah*. In general it took around 3 hours for four women to plant 1000m² of *sawah* while Rp 5000-6000 was paid for this job. This made the return for an hour's planting about Rp 400 - Rp500 per person, the amount which was similar to an hourly return for male agricultural labour. In the case of weeding, no difference was shown in daily wage paid to men and women and all were paid between Rp 1500 - Rp 2000. The professional harvesters received their reward in proportion to the amount that they harvested, at the ratio of 1:12. However, as they were more skilful in using the *ani-ani* and were given more opportunities to work per day, usually about six hours, their daily return was higher than that of casual harvesters. In general, they could harvest up to 100 kg. of unhusked rice per day and earned up to 7.5 kg. of unhusked rice (Rp 1850).

transactions and the size of land liable to transactions between 1950 and 1993 are presented in Table II-8:

Table II.8: Cases of Land Transactions in Kolojonggo between 1950 and 1993a

| Year | Cases | | Total Size of Transactions | |
|----------------------|--------------|-------------------|----------------------------|-------------------|
| | <i>sawah</i> | <i>pekarangan</i> | <i>sawah</i> | <i>pekarangan</i> |
| 1950-59 | 8 | 2 | 1.0580 | 0.1620 |
| 1960-69 | 3 | 3 | 0.1975 | 0.0785 |
| 1970-79 | 10 | 18 | 0.9875 | 0.7670 |
| 1980-93 ^b | 20 | 22 | 2.3740 | 0.8750 |

Source: Records kept in the *kelurahan* office and interview data.

^aThe data in table II-8 include three kinds of transaction: the cases involving residents in Kolojonggo who sold land; residents in Kolojonggo who bought land; and people living outside Kolojonggo who received land from a resident of Kolojonggo and sold it.

^bThere was one case in 1980-93 where *sawah* and *pekarangan* were transacted together but included in the column '*sawah*'.

Table II-8 shows a rapid increase in the frequency of land transactions after the 1970s. Eighteen cases of *pekarangan* transactions were reported in 1970-79 and the average size was 0.043 hectare. As many newly married couples could use their parents' land to build a house and the productive value of *pekarangan* has not changed much since 1970²⁴, it is not certain whether the increase in *pekarangan* transactions was due to growing demand or not. It can be assumed that *pekarangan* transactions might have been influenced by rapid increase of new households, so that *pekarangan* came to be viewed more as a limited resource rather than unlimited one. The increasing transactions of *sawah* may be ascribed to the higher profitability of rice cultivation after the introduction of the green revolution.

Of the villagers who were involved in land transactions in the 1970s, the activity of Pak Tio's household was the most notable. Pak Tio²⁵ was the *kadus* (hamlet head) of Kolojonggo from 1965 till 1978 and his two sons who lived together with him were heirs of about 2.5 hectares of *sawah*. Added to 1.2 hectares of his salary land, his household controlled 3.7 hectares of *sawah*, an amount which made his household one of the largest landholders in Sumber. From 1972 until 1978, his household was involved in eight land transactions and purchased 0.3855 hectare of *sawah* and 0.2260 hectare of *pekarangan* as table II-9 shows:

²⁴ Although a few villagers commented that the use of *pekarangan* was more intensive in former days than it is now, the pattern of using *pekarangan* does not seem to have undergone a major change during the last two or three decades. *Pekarangan* are planted mainly with perennials such as palm trees, bamboo and *mlinjo*, the products of which have been used for home consumption as in the case of coconuts and for sale as in the case of bamboo and fruits of *mlinjo*; secondary staple crops and vegetables are seldom planted. In this respect, the dominant usage of *pekarangan* has been to build a house.

²⁵ Names of villagers appearing in this chapter and in the following chapters are pseudonyms.

Table II.9: Land Purchased by Pak Tio's Household between 1972 and 1978

| Year | <i>Sawah</i> (m ²) | <i>Pekarangan</i> (m ²) | Residence of Land Sellers |
|-------|--------------------------------|-------------------------------------|-------------------------------|
| 1972 | 0 | 1040 | (migrant) |
| 1973 | 715 | 0 | In Sumber, outside Kolojonggo |
| 1974 | 285 | 0 | In Sumber, outside Kolojonggo |
| 1974 | 0 | 260 | Outside Sumber |
| 1974 | 2085 | 0 | Outside Sumber |
| 1975 | 0 | 740 | Outside Sumber |
| 1976 | 770 | 0 | Outside Sumber |
| 1978 | 0 | 220 | Outside Sumber |
| Total | 3855 | 2260 | |

Source: As for Table II-8.

Table II-9 shows that Pak Tio's household purchased land almost every year from 1972 to 1978. The wealth to buy land came from 3.7 hectares of *sawah* under his control, which, although sharecropped, gave him profits enough to purchase land with ease.²⁶ The case of Pak Tio exemplifies one facet of changes that the green revolution brought to the structure of land tenure: increasing profit from agriculture was reinvested into the agricultural sector which promised markedly higher profitability than before. This caused the movement of large landholders to purchase *sawah*.

Increasing profit from *sawah*, however, did not apply only to large landholders but to all landholders, signifying that the green revolution did not bring any incentive for small and middle landholders to sell their land. Moreover, widening work opportunities in non-agricultural sectors helped potential land sellers to improve their economic capacity to retain their land. The composition of those who sold their land to Pak Tio shows this point. Of the eight land sellers, one was a household which sold *pekarangan* just before it moved outside Kolojonggo; five others were those who lived outside Sumber, had received a plot of land by inheritance and sold it; and the remaining two were those who lived in Sumber and sold their *sawah* to Pak Tio. The same pattern is also visible in the transactions of *sawah* in Kolojonggo in which Pak Tio's household was not involved in 1970-79. Of the six cases of *sawah* transactions (see table II-8), four *sawah* sellers were heirs of the deceased residents in Kolojonggo who lived outside Sumber. The remaining two *sawah* sellers were Pak Tio's son who sold part of his inherited land after the death of Pak Tio and a woman who sold inherited *sawah*. This indicates that no villagers in Kolojonggo who cultivated *sawah* by themselves sold it between 1970 and 1979.

²⁶ If it is assumed that 1 hectare of *sawah* produced 5 tons of unhusked rice and half of it went to the landowner, Pak Tio could secure more than 8 tons of unhusked rice every four or five month. Although the life style of his household was far more extravagant than others, these yields gave it enough profit to buy small size *sawah* or *pekarangan*, whose price reached around 15 kg. of unhusked rice per metre or 7.5 tons per 500m². Moreover, his wife also had an income as a primary school teacher.

The situation of land transactions in the 1970s shows two disparate impacts of the green revolution on the structure of land tenure: it gave incentive for large landholders to purchase more land while the improved economic position of small and middle landholders made them unwilling to put their land on sale. One result of the interplay of these two forces is reflected in the price of land. As table II-10 shows, land price, when converted into rice equivalent, rose sharply between 1963 and 1973. 1 m² of *sawah* and *pekarangan* which had been equivalent to less than 2 kg. of rice until the early 1960s was valued at more than 6 kg. of rice after the mid-1970s. A possible reason for the rise of land price is the unequal developments of supply and demand in the rural land market. Those who had the capability to buy land were ready to increase their holdings but improvement of economic situation of small and middle landholders decreased the supply of land to the market. This then pushed up the price of land.

Table II.10: Land Price in Sumber in 1951-93

| Year | <i>Sawah</i> per m ² (Rp) | <i>Pekarangan</i> per m ² (Rp) | Average Rice Price per kg. (Rp) | Price of 1 m ² of <i>sawah</i> in rice (kg.) | Price of 1 m ² of <i>pekarangan</i> in rice (kg.) |
|---------|--------------------------------------|---|---------------------------------|---|--|
| 1951-53 | 2.46 [6] | 1.56 [4] | 2.18 | 1.13 | 0.72 |
| 1954-56 | 4.49 [6] | 3.78 [9] | 2.55 | 1.76 | 1.48 |
| 1957-59 | 7.78 [26] | 6.54 [23] | 4.54 | 1.71 | 1.44 |
| 1960-62 | 23.46 [18] | 23.12 [23] | 17.93 | 1.31 | 1.29 |
| 1963-73 | | | Not Available | | |
| 1974-76 | 905 [7] | 1033 [14] | 135 | 6.7 | 7.6 |
| 1977-79 | 1201 [22] | 1099 [22] | 173 | 6.9 | 6.4 |
| 1980-82 | 1690 [14] | 1884 [14] | 258 | 6.6 | 7.3 |
| 1983-84 | 2900 [15] | 3483 [11] | 303 | 9.6 | 11.5 |
| 1985-92 | | | Not Available | | |
| 1992-93 | 6,000-8,000 | 7,000-10,000 | 600 | 10-13.3 | 11.7-16.7 |

Source: Records kept in the *kelurahan* office and interview data; Rice price is from official statistics of the Bureau of Statistics in Yogyakarta (KSY, various issues), except for that in 1992-93.

Note: Figure in bracket = number of transaction cases.

The discussion so far suggests that in the 1970s, large landholders made a move to accumulate more land while small and middle landholders were unwilling to sell their land. An impetus to this development was the higher profitability of rice cultivation generated by cropping intensification and increase in yields per hectare. In the period after the 1980s, however, these two trends have been reversed: small landholders are more and more willing to sell their *sawah* while large landholders are less and less willing to purchase it. To understand why this development has taken place is a difficult task since many variables have influenced the process. The following discussion examines only two of the factors lying behind this development.

Asked why he had not bought *sawah* since 1980, Pak Bari owning around 2 hectares of *sawah* gave a brief answer: 'for what?'. Then, he continued his answer by giving a calculation as follows:

To buy 1000 m² of *sawah* : Rp 7,000,000

Return from 1000 m² of *sawah* per cropping:

1) in case of sharecropping: Rp 50,000

2) in case of self-cultivation: Rp 60,000 - 70,000

According to his calculation, it will take more than forty years for the profit from 1000 m² of *sawah* to offset the initial investment, if the rise of land price is not considered. His next comment shows what he had in mind when thinking about the problem of buying *sawah*: 'if I had 7 million Rupiah to buy 1000 m², it would be better to save it in the bank, which will give me 700,000 Rupiah per annum.'²⁷ The comment of Pak Bari summarises the present situation of agriculture: return from rice cultivation is not large enough to compensate for the initial capital outlaid. This discourages large landholders from investing profit from rice cultivation or from any other sources in buying more *sawah*.

Not all peasants adopt the same mode of evaluating rice cultivation as Pak Bari. Most small and middle landholders probably have never compared agricultural profit with interest rate. Whatever modes are employed, though, all villagers, irrespective of their size of landholdings and of whether they actually cultivate *sawah* or not, share the same view that agriculture is no longer a profitable business. The comment of a villager presented below is a good example of how these peasants think about their own work and the prospective of cultivating rice:

I have cultivated half a hectare of *sawah*. If someone has this size of *sawah* in this area, he surely is considered as a large landowner. However, the fate of peasants has got more and more difficult. If my wife did not help me by working as a trader, I might not be able to educate my children up to high school level. Just look at Pak Sugeng (who happened to pass by while we were talking). He came from the city after acquiring food for pigs that he raises at home. ... The daily work of Pak Sugeng is to go to restaurants in the city to get left-over foods and to clean the places where pigs live. ... How much income does he obtain from it? He has four to five pigs at home. The price of pigs is about Rp 80,000 after 4 months and up to Rp 200,000 after 7 months. This means that he can secure at least Rp 80,000 per month, if he raises four pigs. He also gets extra income when a pig gives birth to babies. ... My income? Last time, I sold all my paddy to the *penebas* at the price of Rp 450,000. If I harvested it by myself, it probably reached half million.

²⁷ The next question of mine was why he did not sell his land and save the money in the bank which would give him more than a million Rupiah every month. He talked about the duty of children to pass their parents' inheritance to their children and his stable income both from his work as a civil servant and from his *sawah*.

However, subtracting the cost of farming, the money that I could get was only Rp 300,000. A half hectare of *sawah* is the same as four pigs! The fate of peasants in Indonesia is really bad these days.

One possible answer to the question of why rice cultivation which was thought to be profitable at the initial stage of the green revolution is now thought not to be may lie in change in input for rice cultivation. If the ratio of production costs to output has increased, this would explain the drop in the profit margin of rice cultivation. During the last two decades, several changes in the practice of rice cultivation have caused increase in input, especially, monetary input: most farmers buy seeds from local markets, hire animals or tractors for ploughing and apply more fertilisers, while the agricultural wage has risen. The same period, however, has also seen the emergence of a new agricultural practice which promises substantial decrease in input: the frequency of ploughing decreased from two to one.²⁸ Traditionally the cost of ploughing occupied the largest share in the total input for rice cultivation if the peasants did not use their own labour. Franke reports that the cost of ploughing twice was one third of the total input in a Central Javanese village in 1969-70 (1973), the ratio which was also applied to a village in Kulon Progo district (Roosmalawati, 1973). As a result, the change in the frequency of ploughing reduces the total input, probably, by about fifteen percent. On the other hand, the price of chemical fertilisers, compared with rice price, has become much cheaper²⁹ and yields per hectare have continuously grown with the release of new rice varieties and with more fertiliser application. No official figures are available for the ratio of input to output in the 1970s but a few researches suggest that it was more than 30 percent.³⁰ In 1990, the official statistics for Yogyakarta show the cost of production was 27.42 percent of the total output (KSY, 1990) while it was about 33 percent in Kolojonggo in 1993 (see table II-4).³¹ The comparison of the early 1970s with the 1990s then suggests that the ratio of input to output has not changed a lot in this period. Several factors causing an increase in input are likely to have been offset by others causing a decline.

²⁸ In 1993-94, no villagers in Kolojonggo ploughed twice, although all of them agreed that this had been standard in the 1970s and was directly connected to increase in yields.

²⁹ In Indonesia, the price of fertiliser has been evaluated in terms of *rumus tani* (formula of the farmer), namely, that the price of 1 kg. of milled rice would always be kept equal to that of 1 kg. of urea (Utrecht, 1973:159) In terms of this formula, trends in the price of urea and rice have been favourable for peasants from the mid-1970s on. The ratio of 1 kg. of paddy price to 1 kg. of urea, which was less than 1 in the early 1970s, became more than 1 in the mid-1970s and more than 1.5 in the 1980s (Pearson, et al., 1991:11). In 1993, 1 kg. of rice was equivalent to slightly less than 2 kg. of urea in the local market.

³⁰ Roosmalawati (1973) and White (1977:461-62) report that the ratio of input to output was respectively 33 percent (in the case of 1 hectare) and 24 to 43 percent in the early 1970s in Kulon Progo while Franke (1973) gives us far higher percentage, namely, 51 to 54 percent in cultivating 1 hectare of *sawah*.

³¹ This does not include land tax, labour cost for weeding and other miscellaneous works such as making seedbed, water management and fertilising. Although these are included, the total input in Kolojonggo does not exceed 40 percent of the total output.

Another possible reason for villagers' current pessimistic view of rice cultivation is the uneven rise of the rice price and of prices of other consumer goods. If price rises of other consumer goods have exceeded that of rice, the relative profitability of rice cultivation may have declined. For this, the data concerning rice producers' terms of trade in Yogyakarta are presented in Table II-11:

Table II.11: Rice Producers' Terms of Trade (TT) in Yogyakarta (1976 = 100)

| Year | TT | Year | TT | Year | TT |
|------|----|------|----|------|-----|
| 1977 | 99 | 1982 | 87 | 1987 | 93 |
| 1978 | 92 | 1983 | 82 | 1988 | 101 |
| 1979 | 97 | 1984 | 81 | 1989 | 96 |
| 1980 | 94 | 1985 | 79 | 1990 | 96 |
| 1981 | 88 | 1986 | 87 | 1991 | 96 |

Source: *Indicator Ekonomi* (BPS, 1976-1992)

Table II-11 does not show much of a decline in rice producers' terms of trade for the last fifteen years. A slight downturn was visible in the mid-1980s, but this markedly improved in the late 1980s, so that, when the index of the rice producers' terms of trade in 1976 was fixed at 100, that in 1991 was 96. The statistical trend in rice producers' terms of trade may not directly reflect villagers' own calculation based on their experiences.³² Nevertheless, it may be regarded as an indication of no rapid decline in the profitability of rice cultivation during the last two decades, at least in statistical terms.

Examinations of the change in the ratio of input to output and the rice producers' terms of trade urge us to see factors lying beyond rice production to understand why rice cultivation is now considered unprofitable. One of these may be the rise of wages in non-agricultural sectors, especially that in the construction sector where every male villager can be easily employed. The daily wage for construction labour varies according to each labourer' skill. In 1993, novices received Rp 2,500, the masons who had worked for two to three years between Rp 3,000 and Rp 4,000, and the skilled carpenters Rp 5,000. As construction

³² Most peasants in Kolojonggo commented that the rice price has not risen as quickly as that of other consumer goods. A factor influencing villagers' evaluation of their terms of trade is changes in the pattern of consumption. Over the last two decades, many consumer goods have undergone a status change from the luxurious to the necessary; motorbike, television, electricity and education are good examples. In 1993, of 132 households in Kolojonggo, 43 had one or two motorbikes, 55 owned black and white or colour television, 107 were connected to electricity and many households had secondary school students. As a result, the share of rice in a household's budget was, in the cases of twenty-five sample households, much lower than the findings of Penny and Singarimbun in the early 1970s that rice accounted for about half of the consumption of a household which belonged to *cukupan* (the having or the possessing of enough) (Penny and Singarimbun, 1973:3 & 47; see also Sukamto (1962), cited in Penny and Singarimbun, 1973:46). In 1993, the cost of educating two secondary school students exceeded that for rice consumption while the expense of using a motorbike and a television was similar to, or, in some cases, more than that for rice consumption. Increased spending on non-food items was also recognised by villagers. However, when they made comments on the share of profits from rice cultivation in their households' budget, diversified spending on non-food items was not included in their consideration. Rather, they emphasised the fact that profits from rice cultivation could cover a much larger part of the budget of a household in the 1970s than now.

work continued for six days a week, one's weekly income could reach between Rp 15,000 and Rp 30,000 and one's monthly income, between Rp 60,000 and Rp 120,000.³³ If 1000 m² of *sawah* can give its holders about Rp 25,000 of profit per month³⁴, the daily wage of a mason is equivalent roughly to that of peasants cultivating 0.4 hectare of their own *sawah*. When a comparison is made of peasants and white collar workers, the position of peasants is less favourable. For example, in 1993, high-school graduates who began to work as civil servants could earn around Rp 120,000, an income equivalent to that from 0.5 hectare of *sawah*, while the monthly income of a teacher having a university degree was more than Rp 150,000, equivalent to an income from 0.6 hectare of *sawah*. The relatively higher income paid to civil servants made it possible for the *lurah* in Sumer who received 3.5 hectares of *sawah* as his salary to insist that his income was no more than that of a teacher. Although somewhat exaggerated,³⁵ his remarks show how the *kelurahan* officials who receive their salary in the form of *sawah* and who thus belong to the largest landholders in Sumer evaluate their own income in comparison with that of other white collar workers. To them, wage in the form of *sawah* is no longer as advantageous as it once was in the 1970s or before that time.³⁶ In this respect, villagers' negative evaluation of

³³ In terms of security, many villages commented that construction labour is not less precarious than agriculture. In the case of construction work, the risk comes when a certain project finishes and villagers do not find another work place. However, compared with the danger of crop failure, unemployment for a short period in construction work is not considered to be a serious disadvantage by villagers.

³⁴ It is not easy to calculate income from 1000 m² of *sawah*. If we use the data presented in table II-4, one can get about 200 kg. of rice from 1000 m² of *sawah* every four month, which makes one's monthly income 50 kg. of rice or Rp 30,000 (1 kg. of rice = Rp 600). This amount is much higher than the income that villagers get from the *penebas* by selling their paddy before the harvest. In 1993, the *penebas* generally paid Rp 100,000-120,000 for 1000m² of *sawah*. If the production cost (excluding harvest cost) which is about 20 percent of the total output is excluded, peasants will get Rp 80,000-Rp 96,000 or Rp 20,000-Rp 24,000 per month. For the convenience of discussion, Rp 25,000 is used as a standard monthly income from 1000 m² in the text.

³⁵ The *lurah* in Sumer considered his monetary income from salary land as Rp 350,000 per month, or Rp 10,000 per 1000 m². This calculation seems to underestimate his actual income, compared with the estimation made in footnote no. 35. When 1000 m² of *sawah* was sold at between Rp 100,000 and Rp 120,000 to the *penebas*, the *lurah* who rented his *sawah* on a sharecrop basis could secure half of it or Rp 12,500 to Rp 15,000 per month, an amount which is much higher than his own estimation. However, the *lurah* had several reasons for depreciating his income. First, the yields from *sawah* were much poorer when it was sharecropped than when he cultivated it. Second, the *penebas* usually paid less to the sharecroppers of the *lurah* than to other small and middle holders. This was because the size of *sawah* that the *lurah* rented on a sharecrop basis was 0.4 to 0.5 hectare, and, in bargaining this size of *sawah*, the *penebas* faced greater danger of overestimating the yields than he or she did for much smaller sized *sawah*. This higher degree of danger then prompted the *penebas* to bargain for the larger sized *sawah* at a cheaper price. For example, when 1000m² is priced at Rp 100,000, a much larger block of *sawah*, say, 5000m² is priced less than Rp 500,000. In this respect, the *lurah's* estimation of his income may not be too different from what he actually earned, although somewhat exaggerated. If it is assumed that the *lurah* could earn Rp 350,000 per month from his salary land, his appraisal that his income was similar to that of a teacher was generally right. The teachers who had worked for twenty years could get more than Rp 300,000 in 1993.

³⁶ According to the *lurah*, his income from *sawah* in the 1970s was far higher than that of teachers who started their career at the same time with him, while his income was about twice as much as that of teachers about ten years ago.

agriculture seems to be based on their relativistic point of view in comparing income from *sawah* with that from other non-agricultural work rather than on absolute decrease in profitability of rice cultivation.

Other local factors contributing to villagers' pessimistic view of agriculture are the periodical failures of rice harvest and of their efforts to diversify crops. Crop failure has been caused by pest attacks from such pests as the *wereng* (brown planthopper) and *ulat* (caterpillar) or by attacks from rats and birds. Crop failure is not a new phenomenon in Kolojonggo but, according to village elders, the frequency of rice diseases has been much higher and the damage they inflict on paddy has been more severe since the introduction of new rice varieties. These repetitive pest attacks decrease profit in rice cultivation and, more importantly, discourage peasants from investing further efforts, time and money in rice production. The adaptive strategy thus developed by most peasants in Kolojonggo is 'to let the paddy grow by itself'. What they do is to transplant and plant seeds, and to wait until these are ripe enough to be harvested rather than to maximise material and non-material inputs, which also will maximise their loss in case of severe crop failure. The result of this strategy is the stagnation of yields. The yields per hectare have not improved since the early-1980s, fluctuating between 50 to 60 quintals per hectare in *kecamatan* Gamol.³⁷ As many peasants still remember the rapid rise in yields in the 1970s and in the early 1980s, this plateau in yields per hectare in the 1980s has contributed to their present pessimism.

On the other hand, the reluctance of the peasants to plant crops other than rice has decreased the profitability of farming. However, this attitude also has its rationale. In the 1980s, several attempts were made, under the guidance of agricultural officials from the Department of Agriculture, to plant secondary staples or vegetables. Unfortunately for the peasants in Kolojonggo, all these trials failed and those who participated in such programs had to bear the cost of failure, since the government which was ready to support the implementation of the program did not want to compensate for loss. The repetition of trials and failures then made rice cultivation appear to be the best option for the peasants. Even when the yields are not good due to bad weather or pest attacks, they can secure at least a small amount of rice for home consumption and, as their input into rice cultivation is minimal, the loss can also be minimal.

To summarise, villagers' pessimistic view of rice cultivation is likely to have been based more on a comparative evaluation of income from rice cultivation

³⁷ Below is the average yields per hectare (*gabah kering*) in *kecamatan* Gamol:

| Year | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|-----------------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|
| Yields (qt./ha) | 54.13 | 59.80 | 50.0 | 50.4 | 59.70 | 52.25 | 51.92 | 57.88 | 53.39 | 59.13 |

Source: *kecamatan* office

and from non-agricultural work than on the absolute decrease in profitability of rice cultivation. Whatever the actual basis of this perspective, the pessimistic perception of rice cultivation, coupled with rising land prices, has provided a condition in which investment of capital in the agricultural sector is not thought of as the best option in disposing one's wealth, especially by those who cultivate *sawah* not for consumption but for profit.

The developments in land transactions and the differentiation process in Kolojonggo where rice cultivation is no longer viewed as profitable will be discussed further. As a first step in this discussion, the landholdings of those who sold and purchased *sawah* after 1980 are presented in table II-12:

Table II.12: Cases of *Sawah* Transactions after 1980

| | | <i>Sawah</i> sellers' size of landholding before they sold <i>sawah</i> (ha) | | | | Outsiders ^a (unknown) |
|---|-----------------------|--|-------|----------------|------|-------------------------------------|
| | | < 0.2 | < 0.5 | < 1 | > 1 | |
| | 0 | | | | | 4 |
| <i>Sawah</i> buyers' size of landholding before they bought <i>sawah</i> (ha) | < 0.2 | 1 | 1 | | | 4 |
| | < 0.5 | 1 | | | | |
| | < 1 | 1 | | | | 3 |
| | > 1 | | | 1 | | |
| | Outsider ^b | | | 1 | | |
| | Kelurahan Office | 1 | 1 | | 1 | |
| Total Case | | 4 | 2 | 2 ^c | 1 | 11 |
| Total Size (ha) | | 0.28 | 0.26 | 0.87 | 0.15 | 0.80 |

Source: As for Table II-8.

^a People who lived outside Kolojonggo, received *sawah* from a resident of Kolojonggo by inheritance and sold it.

^b A city dweller who bought *sawah* from a villager in Kolojonggo. Her size of landholding before she bought *sawah* is unknown.

^c These two cases were carried out by a villager who sold his *sawah* to two persons.

Although the frequency and size of *sawah* transactions have doubled since 1980 (see table II-8), there is no indication in table II-12 that a rapid differentiation process has occurred in this period. Only one or two cases of *sawah* transaction have taken place each year and the average size of *sawah* involved in each case was 0.12 hectare. Moreover, purchasing of *sawah* by large landholders owning more than 0.5 hectare has not outclassed those by landless or small landholders. Villagers owning more than 0.5 hectare were involved only in five *sawah* transactions as buyers and the average size of *sawah* that they bought was 0.09 hectare. The fact that the largest size of *sawah* put on sale could not be sold in Sumber also points to the inactivity of large landholders to purchase *sawah*. When one villager in Kolojonggo put 0.87 hectare of *sawah* on sale, only 0.08 hectare was sold to a man in Kolojonggo while the other 0.79 hectare went to an outside resident of Sumber. Villagers owning less than 0.5 hectare were involved in 11 cases of transactions and the average size of their transaction was 0.06 hectare.

The second notable feature in table II-12 is that 11 out of 19 *sawah* sellers were those who lived outside Kolojonggo but received *sawah* by inheritance. All transactions were undertaken just after the death of parents. This trend seems due to the rising *sawah* price. Although the average size of *sawah* sold was just 0.07 hectare, return could be millions of Rupiah, or to borrow a popular comparison that villagers made, it was large enough to buy a new motorbike.

One interesting point to note is that five out of the eight *sawah* sellers living in Kolojonggo changed their status from landholders to the landless after having sold *sawah*. This could be interpreted as an indicator that the process of polarisation was resumed in the 1980s, since only one such case was reported from the 1950s till the end of the 1970s. However, what should be considered in interpreting these cases is that economic conditions and the value put on holding *sawah* since the 1980s have become different from what they were in previous decades. While agriculture was the only sector which provided stable sources of livelihood and *sawah* was the key to securing one's access to agricultural resources in former days, it has become, especially since the 1980s, just one of many sources of livelihood. Moreover, income from rice cultivation has been considered less profitable than that from non-agricultural work and, subsequently, the value of *sawah* is now being viewed more in terms of its exchange value than its productive value. In these circumstances, more villagers think of selling *sawah* as a viable option if the capital acquired from selling can be invested for higher income. Of the five households that were ready to accept their position as the landless, two sold their *sawah* to open a *warung*, one to build a house for his married son, one to cover his bankruptcy and the last one, consisting of a mother and a daughter, to maintain their livelihood. In this sense, only one of the five households belonged to the 'classical' example of peasant differentiation, namely, economic hardship forcing small landholders to sell their land for survival.

In brief, the period after 1980 has seen an increase in *sawah* transactions and in the number of landless households. The main forces underlying this trend are the rise in land prices, changing perceptions of rice cultivation and profitability, and widening economic opportunities in non-agricultural sectors. However, the increase in the landless has not taken place concurrently with the concentration of land among large landholders, as table II-13 shows:

Table II.13: Land Ownership and *Sawah* Cultivation in Kolojonggo in 1971 and 1993

| Size (ha) | Ownership | | | | <i>Sawah</i> Cultivating |
|--------------|------------|------|----------|------|--------------------------|
| | Households | | Land (%) | | Households ^a |
| | 1971 | 1993 | 1971 | 1993 | 1993 |
| 0 | 39 | 66 | 0 | 0 | 59 |
| < 0.1 | 14 | 18 | 5.1 | 7.9 | 19 |
| < 0.2 | 17 | 25 | 13.7 | 23.6 | 22 |
| < 0.3 | 14 | 8 | 19.0 | 13.0 | 15 |
| < 0.4 | 7 | 8 | 13.5 | 18.6 | 8 |
| < 0.5 | 2 | 1 | 5.0 | 3.0 | 1 |
| < 0.6 | 3 | 1 | 9.3 | 3.6 | 2 |
| < 0.7 | 2 | 1 | 6.9 | 4.5 | 4 |
| < 0.8 | 0 | 2 | 0 | 9.1 | 1 |
| < 0.9 | 0 | 0 | 0 | 0 | 0 |
| < 1 | 0 | 0 | 0 | 0 | 0 |
| > 1 | 2 | 2 | 27.4 | 16.6 | 1 |
| Total | 100 | 132 | 100 | 100 | 132 |

Source: As for Table II-8.

^aThe size of *sawah* each household actually cultivates, irrespective of the ownership-status of *sawah*.

Table II-13 shows that the polarised ownership of *sawah* in 1971 has not changed much by 1993. Sixty-six households do not own *sawah* while two households own more than 1 hectare. Compared with the situation in 1971, the number of landless households has increased by 27 in 1993. As regards the number of households owning less than 0.3 hectare of *sawah*, a slight increase is apparent, from 45 to 51 households. Two major factors accounting for change in the composition of landless and small landholders are the increase of households and inheritance. Land transactions also play a role in this process, so that five households classified as landholders in 1971 are classified as landless in 1993. The number of households owning more than 0.5 hectare of *sawah* has decreased from seven to six. Of the seven households classified in this group in 1971, two are still recorded in 1993 statistics, four inherited *sawah*, and one who held 0.61 hectare of pension land (*pengarem-arem*) passed away. In three cases of inheritance, each heir received around 0.2 hectare of *sawah*, while in one case, the division was large and three heirs received about 1.2 , 0.9 and 0.7 hectare of *sawah* respectively. Two of the heirs are classified as large holders in 1993, while one sold all his land. The two others who are newly included in this group in 1993 consist of the *kadus* who received 1.2 hectares of *sawah* as salary land and one household which added about 0.2 hectare of *sawah* by purchase to its previous holding of 0.43 hectare.

Not all landless households listed in table II-13 lack access to *sawah*, while not all landholders cultivate *sawah* by themselves. Of the 66 landless households, 27 cultivate *sawah* either by sharecropping or by renting it from others while five households give out all their holdings on a sharecrop basis. With this

temporary transfer of usufruct over *sawah*, the number of households that cultivate *sawah* becomes 73 (see the column 'Sawah Cultivating Households' in table II-13). Given that 39 villagers cultivate *sawah* as their primary occupation,³⁸ 34 villagers do so as their secondary occupation. This implies that expanding work opportunities in non-agricultural sectors have not prompted villagers to move out of the agricultural sector. Many of those who work in non-agricultural sectors cultivate *sawah* of their own, and, in a few cases, sharecrop others' *sawah* as their secondary occupation.

2.5. Summary

This chapter has looked at socio-economic developments in Kolojonggo since the introduction of the green revolution. Worth reiterating are the following points. First, as much research on Javanese villages shows, Kolojonggo has also extremely polarised ownership of land. Almost half of the villagers own no *sawah* while a few villagers possess more than 30 percent of the total *sawah* in Kolojonggo. Unlike what has been reported in other parts of Java (Billah et al., 1984:261-62; Amaluddin, 1978:112; Kano, 1990:49), however, the historical development of land tenure in Kolojonggo suggests there has been no acceleration in the process of polarisation since independence. On the contrary, the situation of polarisation has been alleviated during this period. As table II-14 shows, the share of landholders of less than 0.3 hectare increased from 10.1 percent in 1943 to 44.5 percent in 1993 whereas that of landholders of more than 0.5 hectare dropped from 61.7 percent in 1943 to 33.8 percent in 1993.

Table II.14: *Sawah* Owned by Three Groups of Landholders in 1943-93 (%)

| Size (ha) | Year | | | |
|--------------|------|------|------|------|
| | 1943 | 1960 | 1971 | 1993 |
| < 0.3 | 10.1 | 34.9 | 37.8 | 44.5 |
| < 0.5 | 28.1 | 16.4 | 18.5 | 21.6 |
| > 0.5 | 61.7 | 48.7 | 43.6 | 33.8 |

Source: 1943 and 1960: Records kept in the *kelurahan* office and interview data (For more about the structure of land tenure in 1943 and 1960, see Appendix A); 1971 and 1993: Table II-13.

Various factors have interacted to bring about this development in the ownership of *sawah*. Seen from the perspective of small landholders, decreasing pressures from outside after independence such as abolition of heavy land tax, higher yields per hectare, and widening work opportunities in non-agricultural sectors have been, among others, important in enabling them to retain their small plots of *sawah*. Seen from large landholders' perspective, inheritance which fragments their landholdings among several heirs, higher education which diverts their interests to non-agricultural sectors, and, especially after the 1980s, the rise of land prices and pessimistic view of profitability in rice cultivation hampered

³⁸ The villagers included in this category are those classified as 'owner cultivation', 'owner cultivation & tenant', 'tenant', 'tenant and labourer' and 'owner cultivation and labourer' in table II-6.

the will to accumulate more *sawah*. Agricultural development in the last decades has also left a deep imprint on the way *sawah* is evaluated by villagers. If *sawah* had been viewed as a burden and then was transformed into the most precious source of livelihood, it is now considered by many as a commodity. *Sawah* has been a commodity since the 1920s, but until quite recently, it was a commodity whose exchange value was overwhelmed by its productive value: it could be exchanged but this remained as a possibility to most villagers. To them, *sawah* was a part of themselves before it was a commodity. This view of *sawah* has gradually changed. Some villagers now consider it primarily in terms of its exchange value, comparing its value according to the current interest rate and buying it in order to sell it for profit. This trend has not yet become extreme, so that many villagers, especially, those belonging to middle and old age, still think of *sawah* as something that should not be put up for sale. However, as more villagers start their career in non-agricultural sectors and land prices continue to rise, it is likely that the proverb repeated by village elders that 'those who start their business by selling inherited land (*warisan*) will never be successful', will no longer be taken seriously by the new generation.

Second, two decades after the introduction of the green revolution, the absolute poverty which dominated the life of many villagers has gradually disappeared to such an extent that no villagers now experience rice shortage for home consumption. Today, the primary economic concern of many villagers is to have more consumer goods such as colour televisions, motorbikes, cassette players, semi-transparent windows, tiled floors and so on. The improvement of villagers' economic conditions is also reflected in the longer schooling period of the youth. These days, it is exceptional to encounter a youth who does not proceed from junior high school to senior high school. Tertiary education is not yet available to most youth but almost every year in the 1990s, one or two high school graduates have continued to their study at university. Widening work opportunities in non-agricultural sectors have had a primary role in improving general economic conditions, making it possible for many villagers owning no *sawah* or holding just a small plot to get access to an income which is higher than that from agricultural work. The disappearance of absolute poverty, however, does not imply that the economic gap between the wealthy and the poor has narrowed. This gap is still wide, probably more so than before. The better way to describe the economic gap between the rich and the poor since the 1970s is, as Edmundson puts it, 'the rich are getting richer while the poor are getting richer' (1994:134).

Third, diversification of occupational structure, widening work opportunities in the city and the decreasing importance of agriculture in villagers' economic life have helped to erode the basis on which such traditional village leaders as village officials, hamlet heads and large landholders, exert their power. No patron-client relation is formed between large landholders, on the one hand,

and sharecroppers or agricultural labourers, on the other. The autonomy of the sharecroppers in managing the *sawah* under sharecropping agreement has been enhanced, their unpaid labour for the *sawah* owners has disappeared, and the labour shortage in agricultural sector allows agricultural labourers to have a stronger bargaining position vis-à-vis large landholders. The same situation also applies to village officials and hamlet heads, so that their authority to intervene in villagers' public and private life has been on the decline. This has been the case especially after a series of agricultural development programs, which directly encroached on villagers' right to manage their own *sawah*³⁹, failed in the 1980s. The village officials who could not obtain compensation for the loss lost face and, accordingly, they had to give up one of the sources of their authority since the early 1970s, namely, their role in the development programs. After these failures, the direct interactions between officials and villagers have remained minimal and the role of the officials has become much closer to simple administrators who issue papers or collect taxes, although they still enjoy higher status than ordinary villagers. Those who have emerged to compete with the village officials for higher status are highly educated villagers having white collar jobs. However, no one has not yet become an authoritative figure in Kolojonggo. Nor is it likely that any one will be such a figure as long as the present economic and political situation continues. In this respect, the village life in Kolojonggo is characterised by a lack of a strong figure who has an authoritative power to involve himself or herself in public life.

Fourth, the last two decades have seen villagers' more intensive contact with the outside world. Rapid increase in villagers' daily mobility, the introduction of mass media and a longer period of schooling have facilitated the constant contact of villagers with people living outside village and have accelerated the flow of information. These changes have made it possible that in terms of villagers' perception and of their everyday interaction, the importance of the hamlet has decreased, while that of much broader boundaries such as Yogyakarta and Indonesia has increased. On the other hand, as more villagers have tried to follow up development in the outside world, changes in the city or at the national level have been introduced into village more rapidly by them.

³⁹ These included such programs as semi-compulsory cultivation of sugarcane, collectivisation of agricultural working processes by organising tens of farmers into a group (*kelompok tani*) and cultivation of secondary staples and vegetables. In the case of sugarcane, the profit that the land owners could secure after the harvest of sugarcane was far less than the amount they could obtain from rice cultivation. This resulted in conflicts between village officials who wanted to continue the program and the land owners who wanted to cultivate rice, although village officials had been successful in securing land for sugarcane cultivation in several parts of Sumber until the mid-1994. The programs of collectivising rice cultivation and of planting secondary staples and vegetables failed due to pest attacks. As a result, the *kelompok tani* in Kolojonggo and its neighbouring hamlets did not operate at all in 1993-94, although the group itself was not disorganised.

Plate 1: A bird's-eye View of kelurahan Sumber. The areas surrounded by trees are residential areas.



Plate 2: Female Harvesters with the *ani-ani*.

