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## **Agrarian and Nonagrarian Bases of Inequality in Nine Javanese Villages**

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### **A. Introduction**

Between 1968 and 1973 Indonesia's Agro Economic Survey carried out regular surveys of fixed samples of farm households in twenty selected villages in the main rice-producing regions of Java. Summarizing the results of the first three seasons of these surveys (1968/69-1969/70), Sajogyo and Collier commented: "Although sample farmers have responded as well as local situations and incentives permitted in adopting the new high-yielding varieties, there is no picture yet of any 'green revolution' by Java's paddy farm operators" (Sajogyo and Collier 1972:43).

In 1981 the Agro Economic Survey research team had the opportunity to revisit nine of these twenty sample vil-

lages. By this time virtually all paddy cultivators were using modern rice varieties (MV hereafter), greatly increased inputs of chemical fertilizers and insecticides, and had achieved impressive yield increases, suggesting that in these villages as in the rest of Java Green Revolution production is now firmly and successfully established after an initially shaky start. Comparison of these two studies therefore offers an unusual opportunity to examine changes in agrarian economy and agrarian structure in the nine villages, during a period which has seen profound changes not only in agricultural production but also in state policies and in the organization of economic and political life at the local and national levels.<sup>1</sup>

Multiple-village resurveys of this kind have both advantages and disadvantages compared to other types of research. The inclusion of nine villages, scattered across the three provinces of Java (see Map 1), permits us both to examine local variations (which, as we will see, are considerable) and also to draw some cautious conclusions about the general directions of change. However, the use of material of this kind for analysis of the processes and mechanisms of agrarian change presents many problems. First, neither the baseline nor the resurvey studies were designed specifically for this purpose. The baseline surveys consisted mainly of traditional farm management questionnaires; the 1981 resurveys, carried out as part of a series of Research Training Workshop on Land Tenure and Agrarian Relations, come closer to what is needed but still

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<sup>1</sup> Cf. Hüsken and White in Hart et. al. *Agrarian Transformations: Local Processes and the State in Southeast Asia*. Berkeley: University of California Press, 1989. Chapter 12.

leave many gaps. Second, the inclusion of nine villages, while allowing more detailed analysis at community level than large-scale sample surveys, does not permit the depth of intensive single-village studies such as those of Hüsken<sup>2</sup> and Anan Ganjanapan,<sup>3</sup> particularly with regard to qualitative material. While participant observation, informal interviews, and the writing of field notes have been a regular feature of the Agro Economic Survey's field research alongside questionnaire surveys in both periods, much of this qualitative information has not been preserved. Third, the sampling procedures differed in the baseline and resurvey studies, so that comparisons over time must be treated with caution.<sup>1)</sup> Furthermore, we are dealing with two 'time-slice' studies separated by ten years rather than a systematic long term study involving regular monitoring of changes; while it is possible to identify many changes during this period, it is rarely possible to document precisely when, why, or how they have occurred.

Given the data at our disposal, our analysis is restricted to the economic rather than the political, social, and ideological aspects of agrarian change. We first examine changes in paddy production and in the ways in which paddy incomes are distributed among the different landholding and landless classes; although many of the villages show a high degree of economic diversification, paddy is still the largest single source of incomes in all villages, with paddy incomes representing about two-thirds of all agricultural incomes and more than one-fifth

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<sup>2</sup> Cf. Hüsken in Hart et. al. *ibid.* Chapter 14.

<sup>3</sup> Cf. Ganjanapan in Hart et. al. *ibid.* Chapter 5.

of all incomes. Our analysis shows that although the agricultural sector by now generates incomes more or less sufficient to maintain the rural population at a minimal level of living, the great majority of these incomes are captured by a minority of larger landowning households ('large' in the context of Java meaning those owning more than 1.0 ha) leaving the majority of households with farm and/or agricultural wage incomes which do not provide even minimal levels of reproduction. This picture of stark inequality and widespread poverty in conditions of agricultural productivity growth is altered, but only partly so, by the inclusion of nonfarm income sources in the analysis. Patterns of nonfarm income distribution tend to reflect, though in more muted form, the inequalities observed in the agricultural sector. Particularly for landless households they are a far more important source of income than agricultural sources. These patterns (which are subject to great variation between villages) provide grounds for questioning attempts to define rural 'classes' or the nature of rural 'classness' itself on the basis of agricultural production relations alone.

In attempting in a short paper to analyze agrarian conditions in nine villages at two points in time, we—and in turn our readers—face a difficult problem of presentation. Given the wide variations between villages, no useful purpose is served by lumping them together in 'average' form except for certain restricted purposes. We have therefore presented the quantitative data for each village separately, but in as abbreviated form as possible, in a series of tables covering all nine villages; this unavoidably requires straining the reader's patience and

eyesight with a number of tables in 'cinemascope' form. For those allergic to such tables we have tried to make the text as intelligible as possible on its own account.

Finally, to avoid possible confusion, readers should note that while we speak of nine 'villages' in the analysis which follows, our household-level data are in fact derived from surveys of parts of villages, comprising one or more hamlets or 'neighborhoods' numbering less than 200 households (1971) and less than 150 households (1981), (as described in note I). 'Villages' in Java (i.e., the administrative units called *desa* or *keurahan*) number normally several hundred and often over a thousand households; the following analysis describes patterns of change and inequality at 'neighborhood' rather than at *desa* level.

## **B. General Description of the Nine Villages**

The sample villages are evenly distributed between the three provinces of Java and well dispersed within each province, each in different *kabupaten* (districts) and at some distance from each other (see Map 7.1). Five of them lie in lowland plains close to sea level (among them, Wanarata is close to the coast and about one-fifth of its household heads are engaged in marine fishing); the remainder are in more elevated and hilly regions (see Table 7.1) but still within the range at which MV rice performs well. Columns 2-5 of Table 7.1 provide some information on the accessibility and the crude and agrarian population densities of the villages. Although all of the villages can be reached by motor vehicle, three of them have no regular public transport service, not lying on the routes of the small 'Colt' passenger vans or pickup

trucks which have spread rapidly in rural Java during the 1970S. There is great variation in population and agrarian densities, as shown in columns 4-6 of Table 7.1: Mariuk in West Java, for example, has barely two-thirds and Janti (East Java) almost three times as many people per cultivated hectare as the all-Java average of 11. Variations in the availability of *sawah* (irrigated, or in the case of Sentul rain-fed, rice terraces) per household bear little relation to average operated holdings per cultivator household (columns 6-7), which may be three times larger than the all-household average in villages such as Mariuk and Rowosari where high rates of landlessness are found.

All of the above indicators of population pressure on land resources in turn do not seem closely related to average per-capita incomes, to the incidence of poverty (indicated in this case by per-capita incomes of households below 320 kg milled-rice equivalent per year), or to the proportion of household incomes derived from nonfarm sources (columns 8-10). The high proportions of average incomes derived from nonfarm sources (more than 50% in six cases, close to 50% in two cases, and 33 in the single case of Mariuk) serve as an important reminder that analyses of 'agrarian' differentiation, even in main rice-producing regions such as those represented by the sample villages, cannot limit themselves to the agricultural sector alone.

The most common cropping pattern on *sawah* in 1981 was simple double-cropping of paddy in all villages except one (Jatisari) which has achieved the more intensive pattern of five paddy crops each two years and another (Sentul) whose rain-fed *sawah* permits only a single paddy crop followed by

fallow. Three villages (Kebanggan, Geneng, and Janti) lie within the catchment area of sugar factories and between 20 and 35% of their *sawah* is reserved in rotation for sugarcane cultivation as it has been since the colonial period. This land was formerly rented to the factories by its smallholder owners and its cultivation undertaken by the factories using wage labor, but since the introduction of the new TRI or TRIS (smallholder sugarcane intensification) programs in the late 1970s sugarcane is now cultivated by groups of smallholders themselves and sold to the factories.

Table 7.1 General Data on the Nine Case Study Villages :1981

Village	District	Elevation (meters above sea level)	Distance to sub-district town (km)	Acces to public motor transport	Population per square km	Agrarian density (persons per cultivated ha)	Sawah per house hold (ha)	Sawah per cultivator household (ha)	Average per capita income [Rp 6000/yr]	Household below poverty line <sup>a</sup>	Total income from nonfarm sources
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
WEST JAVA											
Sentul	Serang	25	2	+	812	9	0.44	0.57	57	75%	67%
Mariuk	Subang	10	8	-	658	7	0.53	1.52	124	44%	33%
Jatisari	Cianjur	350	6	+	865	10	0.37	0.51	140	40%	48%
CENTRAL JAVA											
Rowosari	Kendal	8	6	-	1437	19	0.19	0.60	101	49%	69%
Kebanggan	Banyumas	325	7	+	1481	15	0.24	0.59	102	46%	59%
Wanarata	Pemalang	312	7	-	413	10	0.21	0.33	87	54%	54%
EAST JAVA											
Sukosari	Jember	312	4	+	1300	17	0.37	0.74	205	25%	55%
Geneng	Ngawi	53	2	+	1230	15	0.25	0.54	148	22%	45%
Janti	Sidoarjo	7	4	+	1842	31	0.12	0.31	199	13%	63%

Source : Resurveys, 1981

a Households with per capita income in 1981 bellow 320 Kg milled-rice equipment per year at local prices (approximately Rp. 62.500 per capita).

### C. Changes in Paddy Technology and Productivity: 1971-1981

Given the long history of double-cropping in most of the villages, there have been relatively few increases in cropping

intensity. The major thrust of intensification in all villages has been in raising paddy yields through increased use of modern inputs. The use of either 'national improved' or 'modern' varieties (the latter being those originally diffused from IRRI) was already quite widespread in many villages by 1971, as may be seen in Table 7.2. In all the irrigated villages (i.e., all except Sentul) even greater numbers of farmers were already using chemical fertilizers (column 4); a few farmers in some villages had used them in small quantities since the late 1950s and in the occasional case since the 1930s (Agro Economic Survey 1972). Thus, between 1971 and 1981 changes in modern input use, though considerable, have been quantitative rather than qualitative. By 1981 all paddy farmers were using MVs and furthermore planting them on all the *sawah*, excepting only the occasional small plot reserved for good-tasting or glutinous (*ketan*) varieties for use on special occasions; the single exception is Jatisari, in which about 10 of farmers continue to produce local varieties and a single crop, a portion of upland terraces in this region being officially designated for the traditional 'Cianjur' varieties which fetch high prices in urban markets. Fertilizer use is now also universal (column 5) and dosages have doubled or more than doubled in many villages (columns 6-7), reaching the high levels of more than 400 kg/ha in Janti and Geneng.

These changes, together with insecticide use, the shift in the late 1970s to pest-resistant MVs, and associated Green Revolution practices such as straight-row planting and more frequent weeding, have resulted in the marked yield increases which can be seen in Table 7.2 (columns 8-9). These increases



on the one hand are remarkable evidence of the ingenuity of Java's farmers-despite small farm sizes, widespread illiteracy and the uneven record of the various agencies whose task is to serve them in the application of science in the process of production. This applies to both smaller and larger farmers, to both owner-operators and tenants (technology adoption and yields are not markedly influenced by the form of land tenure, cf. Sajogyo and Collier 1972:14), and to both men and women (the latter being important decision-makers in agricultural production, cf. White and Hastuti 1980). On the other hand, the single most important economic factor promoting yield increases has undoubtedly been state pricing policies, in particular the massive fertilizer subsidy which since 1972 has roughly halved the real price of fertilizer. In 1971 farmers in the nine villages paid between 1.16 and 1.65 kg paddy equivalent for each kilogram of fertilizer, while in 1981 they paid only between 0.61 and 0.75 kg (Masjidin Siregar and Aladin Nasution 1984:135).

Mechanization in paddy cultivation has occurred in only two villages. In Mariuk, the area of sawah prepared with tractors had risen from a very small proportion in 1971 to more than 90 in 1981. This development seems related to the stricter cultivation schedules (shortening the land-preparation period) resulting from the improved irrigation system already mentioned. In Geneng, tractors are a more recent innovation and coincided with the introduction since 1978 of water pumps for dry season cultivation; these pumps like the tractors are purchased by larger farmers (in most cases, with subsidized bank credit or dealer credit) and used both on their own fields and for hire to other farmers. Tractors in this village were at first used solely for

land preparation and for the first plowing, while animal power was used for second plowing, harrowing, and puddling. After some years, as government promotion of uniform planting schedules (for purposes of water rotation and crop protection) made the cultivation season shorter, tractor owners found their profits from tractor hire also shrinking and began to use the engines to power irrigation pumps, which analysis shows to be more profitable (Masjidin Siregar and Aladin Nasution 1984).

Table 7.2 *Changes in Paddy Cultivation Practices and Yields: 1971-1981*

Village	Paddy farmers using new varieties			Paddy farmers using chemical fertilizer		Average fertilizer dosage (kg/ha)		Average paddy yields (t/ha)	
	1971, NIV (1)	1971, MV (2)	1981, MV (3)	1971 (4)	1981 (5)	1971 (6)	1981 (7)	1971 (8)	1981 (9)
West Java									
Sentul	87%	3%	100%	19%	100%	n/a	n/a	1.1	2.0
Mariuk	23%	6%	100%	89%	100%	135	257	2.5	3.8
Jatisari	3%	23%	93%	81%	100%	277	350	3.4	4.3
Central Java									
Rowosari	24%	6%	100%	54%	100%	58	205	3.5	4.6
Kebanggan	-	22%	100%	96%	100%	174	327	2.8	3.5
Wanarata	92%	62%	100%	78%	100%	121	392	2.9	3.0 <sup>a</sup>
									4.3 <sup>b</sup>
East Java									
Sukosari	2%	96%	100%	84%	100%	n/a	n/a	3.0	4.7
Geneng	1%	54%	100%	96%	100%	176	574	3.1	5.2
Janti	1%	11%	100%	92%	100%	213	444	2.7	5.2

Sources : Agricultural census, 1971 (cols. 1, 2, 4); sample survey, 1971 (cols. 6, 8); resurvey 1981 (cols. 3, 5, 7, 9).

Note : 1971 and 1981 refer to wet seasons 1970-1971 and 1980-1981. NIV = national improved varieties, MV = modern varieties; n/a = not available

<sup>a</sup> Actual yield including harvest failure

<sup>b</sup> Estimated normal yield

Other technological changes universal in the nine villages, which like tractors affect not so much productivity as labor absorption, include the shift from hand weeding to the use of rotary or toothed weeding implements (made possible by

straight-row planting), the almost universal shift from finger-knife (*ani-ani*) harvesting to sickles, and in paddy processing the rapid spread of small diesel-powered rice-hullers which began in the late 1960s and by the mid-1970s had almost completely replaced hand pounding, previously an important source of income for women of poorer households.

#### **D. Changes in the Paddy Earnings of Farmers and Hired Labor**

We will first examine changes in the quantities and shares of paddy incomes accruing to 'farmers' on the one hand and 'hired labor' on the other during this period of substantial productivity growth, before discussing changes in land tenure, labor use, and labor arrangements which underlie these changes. Table 7.3 shows how much of the total available income from paddy production in 1971 and 1981 (after deducting all nonlabor production costs) went into the pockets of farmers and hired laborers respectively, in seven of the case-study villages. (For Sentul and Sukosari these data are not available.) 'Farmer's share' in this case means a Chayanovian bundle of 'returns to land, family labor, management, and capital' (i.e., without the fictive separation of these into imputed land rents, interest, and family-labor wages), and 'hired labor's share' is the total actual wages paid out in cash or kind per hectare. In 1981, the farmer's share from each hectare of paddy production was generally more than 60 of production and hired labor's share generally less than 30% (the remaining roughly 10% representing nonlabor input costs, which have proportionately declined since 1971 with the help of fertilizer subsidies); in 1971 the ratio was more favorable to hired labor in

Table 7.3 Changes in Paddy Income Shares (per Hectare) of Farmers and Hired Laborers: 1971-1981

Village	Shares of total production received 1971 (%)			Shares of total production received 1981 (%)			Percentage change 1971-1981		
	Farmer (1)	Hired labour (2)	Other inputs (3)	Farmer (4)	Hired labor (5)	Other inputs (6)	Yield per ha (7)	Farmer share (8)	Hired labor share (9)
West Java									
Sentul	-	-	-	-	-	-	+92	-	-
Mariuk	53	36	11	56	31	13	+51	+62	+27
Jatisari	52	37	11	66	26	8	+25	+61	+13
Central Java									
Rowosari	60	32	8	61	29	10	+31	+34	+20
Kebanggan	60	27	13	62	24	14	+27	+34	+35
Wanarata	56	27	17	65	22	13	+49	+73	+24
East Java									
Sukosari	-	-	-	-	-	-	+57	-	-
Geneng	49	34	17	45	37	18	+66	+55	+77
Janti	43	35	22	61	27	12	+91	+168	+49

Source : Sample survey 1971; Resurveys, 1981

all villages except Geneng (columns 1-4). Analyzing the same data from another angle (columns 5-7), it is clear that in all villages except Jatisari, the absolute quantity of (real) wages paid out per hectare has increased' in all villages except Geneng, however, the farmer's paddy income per hectare has increased more, and hired labor's less, than paddy production. These data therefore indicate a growing divide between 'farmers' on the one hand, and 'hired laborers' on the other, in terms of their relative ability to command incomes from paddy production. In practice, as we shall see below, many smaller farm households also hire out their labor and thus acquire income from both these sources.

In later sections we will examine changes in hired labor use, wage rates, and labor arrangements which influence the incomes of hired workers in paddy production. First, however, we will discuss the evidence of changes in patterns of land control, since these determine both the distribution of paddy incomes among farm households and also the separation between those who have access to a 'farmer's or landowner's share' and those landless households whose only potential access to incomes in this sector is in the form of a wage.

## **E. Land Tenure and Land Markets: 1971-1981**

Our only information on access to land in 1971 concerns the distribution of operated holdings (Agro Economic Survey 1972) without any details on landownership or tenure status. The comparison of operated holdings distribution in 1971 and 1981 shown in Table 7.4, however, suggests some tentative conclusions regarding ownership and tenure which can be further examined using the more detailed information available

for 1981. The average area of *sawah* per operator household has apparently increased significantly in all villages except Wanarata (where at the time of the 1981 survey much *sawah* was not cultivated due to severe rat infestation problems) and a slight decline in Janti. How farm sizes can become larger when availability per household in a growing population becomes smaller is more easily understood when we note the increases in all villages (in many cases, very large increases) in the percentage of households not cultivating any *sawah* at all (columns 2 and 7) - i.e., 'landless' in one narrow sense of the term. These increases, together with' the uneven farm-size distribution among operator households (columns 8-12) produce the rather high levels of overall inequality in farm-size distribution found in 1981: in six of the nine villages, one-half or more of households do not operate any *sawah*, and in five villages smaller groups of households with farms of more than 1.0 ha between them cultivate one-half or more of all available *sawah*.

Operated farm-size distribution is not a great deal more equal than ownership distribution, which is examined in Table 7.5. Again we find generally large proportions of 'landless' (in the narrow but different sense of nonowners)-one-half or more of households in six of the nine villages-and correspondingly large proportions of land owned by small groups, generally less than 10 of households, with holdings of 1.0 ha and above which between them own more than half (and in the case of Manuk, almost 90%) of all *sawah*. In five villages, at least one owner has *sawah* in excess of the (5 ha) maximum permitted by the 1960 Agrarian Laws; the single largest owners in these nine sampled neighborhoods of about 120 households (see note I) generally own at least 10% of all *sawah*.

Table 7.4 Changes in Size Distribution of Operated Sawah Holdings: 1971-1981

	1971 Percentages of households by size group (ha)				1981 Percentage of households by size group (ha)				Percentages of all sawah in holdings over 1.0 ha (11)	
	Average per operator household (ha) (1)	0 (2)	0.5 (3)	0.5-0.99 (4)	≥1.0 (5)	Average per operator household (ha) (6)	0 (7)	0.5 (8)	0.5-0.99 (9)	≥1.0 (10)
Villages										
West Java										
Sentul	0.51	5	46	34	15	0.57	24	35	28	13
Mariuk	1.18	33	19	15	33	1.49	64	9	7	20
Jatisari	0.46	22	52	14	12	0.51	26	50	12	12
Central Java										
Rowosari	0.22	48	43	6	3	0.60	69	20	6	5
Kebanggan	0.40	26	48	13	14	0.59	60	29	8	4
Wanarata	1.06	1	36	26	36	0.38 <sup>a</sup>	37	47	11	5
East Java										
Sukosari	0.61	42	40	8	10	0.74	50	38	3	9
Geneng	0.40	38	34	16	11	0.54	53	27	17	3
Janti	0.35	52	40	6	2	0.31	61	35	3	1

Source : Sample survey 1971; Resurveys, 1981

<sup>a</sup> Much land was uncultivated in 1981 due rat infestation

Table 7.5. Sawah Ownership Distribution : 1981 (wet season 1980-1981)

Village	Percentage of households by size group (ha)				Percentages of all sawah owned by owners of more than 1.0 ha (6)	Holding of single largest owner (ha) (7)	Percentage of total (8)
	0 (1)	0.25 (2)	0.25-0.49 (3)	0.50-0.99 (4)	1.0 (5)		
West Java							
Sentul	30	16	17	27	10	2.8	7
Mariuk	70	1	6	5	18	11.9	21
Jatisari	32	28	15	12	13	2.6	5
Central Java							
Rowosari	64	10	15	5	6	3.3	10
Kebanggan	58	18	11	9	4	6.5	16
Wanarata	28	30	26	10	6	5.0	11
East Java							
Sukosari	50	29	9	4	8	10.7	12
Geneng	60	2	12	18	8	5.3	11
Janti	56	5	31	3	5	3.5	12

Sources : Resurveys, 1981



Table 7-6. Tenure Status of Sawah (1981) and Changes in Real Land Rents (Wet Season 1971-1981)

Villages	Percentages of all sawah operated by			Real rent (tons paddy/ha/season)		Mortgage (gadai) frequency 1981	
	Owner (1)	Lessee (fixed rent) (2)	Share tenant (3)	1971 (4)	1981 (5)	% of sawah (7)	% of households (8)
West Java							
Sentul	62	-	38	-	-	18	24
Mariuk	83	4	13	1.4 <sup>a</sup>	1.7 <sup>a</sup>	2	6
Jatisari	77	4	19	1.2	1.8	2	13
Central Java							
Rowosari	72	26	2	1.3	1.6	-	-
Kebanggan	52	43	5	1.0	1.3	-	-
Wanarata	83	1	16	1.7	2.1	2	7
East Java							
Sukosari	64	35	1	0.7	1.2	10	11
Geneng	50	36	14	2.0 <sup>a</sup>	2.7 <sup>a</sup>	-	-
Janti	71	29	-	1.9 <sup>a</sup>	2.8 <sup>a</sup>	-	-

Sources : Sample survey, 1971; Resurveys 1981

<sup>a</sup> Rent per year

The overall similarity of ownership and farm-size distributions in fact goes together with considerable rates of land transfer through tenancy in the sample villages, two phenomena which at first sight appear contradictory. As may be seen in Table 7.6 (columns 2 and 3), while an overall majority of *sawah* is operated by its owners, substantial amounts varying from 17 in Wanarata and Mariuk to around 50 in Kebanggan and Geneng are operated under some tenancy arrangement; fixed-rent leasing is predominant in five villages, share tenancy in four, and in only one village (Geneng) are both forms significant. Further examination of the tenure status of households (Table 7.7) shows that despite the high proportions of land held in tenancy and of households involved in some tenancy transaction, many of these tenants are also owners (columns 3-5) so that tenancy transfers do not greatly reduce the proportions of 'absolute' landless, with the exception of Sentul and Geneng (compare columns 6-8 and column 9).

Fixed-rent leasing is quite common in the case of village officials' salary lands (*sawah bengkok*), which are found only in the six Central and East Java villages; this practice often reflects the officials' need for ready cash to repay various debts and promises incurred in their election campaigns. Real rental rates have substantially increased between 1971 and 1981 in all villages (Table 7.6, columns 4-6), although these increases have generally been lower than the yield and 'farmer's share' increases already seen in Table 7.3. Five different forms of fixed-rent leasing were found in the sample villages. In three of them (*sewa tahunan*, *jual oyodan*, and *jual potongan*) rent is paid in advance and thus limited to prospective tenants who

have cash in hand; the two less common forms involving payment after harvest (*kontrak* and *setoran*) are found only in Jatisari and Kebanggan, and then only between kin (Gunawan Wiradi and Makali 1984).

For those with ready cash, another opportunity to expand control of land is through mortgage (*gadai*), which although banned in a regulation of 1960 is found in five villages (Table 7.6, columns 7-8). In this case the owner in need of cash receives more than in a fixed-rent transaction and often continues to work as a share tenant on the same land, continuing to bear the risk of cultivation (which perhaps explains its relative frequency in Sentul and Wanarata); on the other hand, the difficulties encountered in repayment often mean that *gadai* is the first step towards eventual loss of ownership rights. In some cases, small owners in need of cash (for investment, ceremonial expenses, children's school fees, etc.) are unable to lease out land because of its low productivity (as in Sentul, which has the highest *gadai* rates in our sample) and mortgage is the only choice. In other cases a rental market exists (Kebanggan, Sukosari) but those needing cash may prefer *gadai* because the initial payment is higher and also because they still have access to a reduced income from their land as sharecroppers or (in Sukosari) by an informal guarantee of wage employment. Not all *gadai* transactions, however, involve hardpressed smallholders and wealthy mortgagors. In Mariuk and Jatisari, land is commonly released in *gadai* by relatively large owners as part of an expansion strategy, sacrificing part of their land for a number of years in order to purchase more land with the proceeds and using the income from the newly

purchased land to reacquire the mortgaged portion (Gunawan Wiradi and Makali, 1984).

In all the eight villages where share tenancy is found, the tenant receives 50 of the gross yield. In each village, however, at least two and sometimes (Jatisari and Wanarata) as many as four different arrangements are found for the division of production costs (seeds, fertilizers, animal/tractor power, labor, land tax, irrigation fees) between owner and tenant. Universally, all labor costs and (where applicable) tractor or animal hire are paid in full by the share tenant, despite the 1959 Share Tenancy Regulations which stipulate the sharing of all production costs in the same proportion as the sharing of the product. Modern inputs such as chemicals are also paid in full by the tenant with the exception of a minority of cases in Jatisari; seeds are also provided by the tenant in all cases in most villages, and in the majority of cases in Sentul, Jatisari, and Wanarata. The landowner, however, more commonly pays all or part of land taxes and irrigation fees (Gunawan Wiradi and Makali 1984: table 4.12, appendix 4.6).<sup>4</sup> In Mariuk and Jatisari, those who wish to obtain share tenancies commonly work first for some time as a permanent laborer or 'apprentice' (*ngawula* or *magang*) for the landowner. In Mariuk, also, wage labor in the wet season is commonly a precondition for obtaining a share tenancy on part of the employer's land in the dry season<sup>5</sup>. Large landowners in this way ensur themselves of a wet-

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<sup>4</sup> See Table 5.12 and Appendix-Table 5.6 in this volume.

<sup>5</sup> cf. the similar arrangement described in Thailand by Anan in Hart et. al. *op.cit.* Chapter 5.

season labor supply—even in these crowded conditions and with widespread landlessness, labor recruitment can be a problem at peak periods, as we will see in the next section—and also commonly tie these laborers more securely by keeping them supplied with loans.

This brief summary of the complex and heterogeneous patterns of tenancy in the sample villages—heterogeneous not only in form but also in function—suggests that fixed-rent transactions occur mainly between indented households and with rented land flowing from smaller to larger owners or between large owners; share-tenanted land, on the other hand, will generally flow from larger owners to smaller owners and the landless. This pattern of countervailing flows of fixed-rent and share tenancies, and the frequency of ‘horizontal’ flows of fixed-rent tenancies within the landowner classes, is confirmed by detailed analysis of tenancy flows in Rowosari and Kebanggan (Suseno et al. 1981; Retno Setyowati et al. 1982); under such conditions, even high tenancy rates do not make the distribution of operated holdings differ greatly from the distribution of landownership.

Little information is available from the 1981 surveys on the mechanisms which have produced the large increases in the proportions of households without paddy farms which we have seen in Table 7.4. Since the proportions of noncultivating owners (cf. Table 7.7) are not large, these increases must reflect either the loss of land through sale, the loss of tenancy rights (particularly share tenancies if the preceding arguments are correct), or increasing numbers of ‘new’ households who because of the absence or small size of parental holdings did

not (or did not yet) inherit land. It is likely that all three mechanisms have been at work.

The various individual case-study reports from the sample villages give evidence of a lively and growing land sale market in all villages, although it was not always possible to quantify land sales. In Rowosari, Kebanggan, Wananrata, and Sukosari data are available on the ways in which *sawah* presently owned was acquired by households in the different landowning classes. While the great majority of land owned by smaller owners came to them through inheritance, owners of more than 0.5 ha tend to have acquired large proportions of their land through purchase; the great majority of land sales have transferred land to these groups from smaller owners (Djoko Kustiono et al. 1981; Retno Setyowati et al. 1981; Suseno et al. 1981; Umar Wahyu Widodo et al. 1981). On the other hand, generally less than 10 of presently non-owning households in the nine villages report having formerly owned land and having lost it through sale. It appears, then, that the resumption of share-tenanted land from former tenants, by owners wishing to cultivate it themselves or to shift to fixed-rent leasing, has been a more important factor than losses through sale in the rapid growth of non-cultivator-absolute' landless households. Our information on this point is incomplete, but there is clear evidence in some villages of a decline in share tenancies, and landless respondents in many others report increasing difficulty in obtaining share tenancies.

Table 7.7. Sawah Tenure Status of Households (Percentage of All Households): 1981 (Wet Season)

	Sawah owners				Non owners			Percentage of all households involved in tenancy transfers <sup>a</sup> (10)		
	Non-opera tors (1)	Own land only (2)	Own land lease (3)	Own and sharecrop (4)	Own land lease and sharecrop (5)	Lease only (6)	Sharecro p only (7)		'Absolute' landless (8)	
Village										
West Java										
Sentul	9	48	-	13	-	-	16	-	14	38
Mariuk	4	25	-	-	1	2	7	-	62	14
Jatisari	3	57	1	8	-	2	5	1	23	20
Central Java										
Rowosari	13	18	5	-	-	7	-	1	56	26
Kebanggan	10	25	6	1	-	7	1	-	50	25
Wanarata	11	56	-	5	-	1	1	-	26	7 <sup>b</sup>
East Java										
Sukosari	1	43	5	1	-	1	-	-	49	8
Geneng	14	19	5	2	-	14	5	2	39	42
Janti	9	33	2	-	-	4	-	-	52	15

Source : Resurveys, 1981

<sup>a</sup> Col. 10 = cols. 1+3+4+5+6+7+8.

<sup>b</sup> Excludes the 11% noncultivating owners in col, most of whom left their sawah uncultivated in 1981

## **F. Changes in Hired Labor Use, Wage Rates, and Labor Arrangements**

In the previous section we have observed the growth in the proportion of households who, being neither owners nor cultivators of sawah, have potential access to paddy incomes only in the form of wages. Earlier, we noted that as paddy production has increased, the proportion of paddy income per hectare paid out in the form of wages (i.e., the income available for division among this growing group) has generally declined although in most cases it has absolutely increased. These trends might reflect changes in the amount of hired labor used per hectare, changes in wage rates for specific forms of labor, changes in the mode of hire labor recruitment and payment, or some combination of these.

Table 7.8 compares preharvest labor use per hectare (harvest labor being almost impossible to estimate reliably) in the wet seasons 1970-1971 and 1980-1981. In four villages total labor use per hectare has remained virtually stable, in two (Jatisari, Rowosari) it has sharply declined, and in two (Kebanggan, Geneng) it has sharply increased. Hired labor use on the other hand has declined in five villages and increased in only two. (We exclude Sentul, where the transition from exchange to hired labor has only recently begun, with only 14 of paddy farmers using any hired labor at all in 1981.) Since the demand for transplanting labor (a female task) is not affected by new technology, the reasons for the decline may be mainly sought in labor use and technology in land preparation, the main male task in preharvest work. As shown in Table 7.8, tractor use in Geneng has displaced both hoeing labor and



draft cattle (and the latter's hired operators) while in Mariuk it has displaced plowing but made little inroads on hoeing. In Jatisari, Rowosari, and Kebanggan hoeing has been displaced not by tractors but by the increased use of draft cattle. A major part of the decline in hired labor use, however, is due to the increased inputs of family labor in most villages. (Here we should ignore Wanarata, whose temporarily reduced farm sizes in 1981 have caused an abrupt shift to greater use of family labor.) This can occur even where farm sizes increase because of the greater demands of intensified production for small tasks which (unlike land preparation and transplanting) do not require mass labor inputs at one time—for example, fertilizer and pesticide application, crop inspection, and water control, all of which can be undertaken by family members.

Under these conditions of generally stagnant or declining demand for hired labor, together with growth in landlessness, what has happened to wage rates? This issue is rather complex due to the coexistence in most villages of several forms of hired labor, each with its own mode of payment. Table 7.9 shows first the changes in real wage rates for casual daily labor in the main preharvest tasks of plowing/harrowing and hoeing (both male) and transplanting and weeding (the first always, and the second predominantly, female) and also (columns 4-6) the wages paid out to harvesters. In the case of the preharvest wages shown in columns 1-3, we observe a general trend without exceptions, however hard it may be to explain: real wage rates have increased in all villages for both male and female labor and in some cases have even doubled. The method

Table 7.8. *Changes in Labor Use in Paddy Cultivation :1971-1981. Person-hours per ha per crop, Preharvest, Wet seasons 1970-1971 and 1980-1981)*

Village	Person-hours/ha/crop							Men	Cattle	Tractors
	Total 1971 (1)	Total 1981 (2)	Family 1971 (3)	Family 1981 (4)	Hired 1971 (5)	Hired 1981 (6)	% change, Total (7)	% change, hired (8)		
West Java										
Sentul <sup>a</sup>	458	439					-4			
Mariuk	692	686	65	113	627	573	-1	-9	-97	+
Jatisari	1702	1263	134	161	1568	1102	-26	-30	+44	-
Central Java										
Rowosari	1352	808	87	48	1265	760	-40	-40	+8	-
Kebanggan	828	1075	56	191	772	884	+30	+14	+51	-
Wanarata <sup>b</sup>										
East Java										
Sukosari	713	689	70	193	643	496	-3	-23	n/a	-
Geneng	821	781	54	128	767	652	-5	-15	-65	+
Janti	757	1105	104	254	653	821	+46	+26	-8	-

Source :Sample surveys, 1971; Resurveys, 1981 (Faisal Kasryono 1984: table 6.6; Masjidin Siregar and Aladin Nasution 1984 : table 5.5)

<sup>a</sup> Hired labor was not found in Sentul in 1971 and was used only new farmers in 1981.

<sup>b</sup> Temporarily reduced farm sizes in Wanarata render comparisons inappropriate in this case.

of measuring cash wages against a local rice price has resulted in some overestimation of these increases, since in recent years rice prices have risen more slowly than those of other basic commodities such as cloth (cf. Faisal Kasryno 1984:184); unfortunately no weighted index of rural consumer prices is available as far back as 1971. However, adjustment would not alter the conclusion that real wages have generally increased. Having no information from the years between 1971 and 1981 we cannot say precisely when this increase has occurred; data from an Agro Economic Survey wage-monitoring project in other sample villages (Mazumdar and Husein Sawit 1986) as well as available large scale data (Papanek 1985) support the general impression provided by respondents in our nine sample villages that real wages were largely stagnant during the 1970s and did not begin to increase markedly until about 1980, i.e., in the last two years of the period in question.

Similar increases have occurred in harvesting wages (columns 4-6), which account for a large proportion (generally around one-third) of all paid-out wages in paddy cultivation; these are harder to determine precisely because harvesters are generally paid with an in-kind proportion (*bawon*) of the amount they harvest, and also because several different *bawon* rates are found simultaneously in all villages except Sukosari, depending on the social or kin relations between employer and harvester. Columns 4 and 5 of Table 7.9 show the downward proportional shift of *bawon* payments between wet seasons 1968-1969 (the data are not available for 1970-1971) and 1980-1981, confirming reports by many authors. Column 6, however, shows that this proportional decline has been more than com-

pensated by yield increases, so that the total quantity paid out to harvesters has markedly increased in all villages.

Table 7.9 Changes in Real Wage Rates for Casual Daily Labor (Wet Seasons 1970-1971 and 1980-1981) and Wages Paid to Harvesters

Village	Changes in real wage <sup>a</sup> rate for casual daily labor 1971-1981			In-kind harvest wages paid out		
	Plowing barrowing(men)	Hoeing (men)	Transplanting/ weeding(women)	% of gross yield 1968- 1969 <sup>b</sup>	% of gross yield 1980- 1981	Quantity change
	(1)		(2)	(3)	(4)	(5)
West Java						
Sentul	(… Exchange Labor…)			17	15	+71%
Mariuk	+124%	+25%	+24%	15	12	+76%
Jatisari	+41%	+19%	+11%	10	9	+56%
Central Java						
Rowosari	+91%	+80%	+21%	10	9	+57%
Kebanggaan	+18%	+28%	+65%	19	19	70%
Wanarata	+46%	+12%	+41%	10	9	+43%
East Java						
Sukosari	+6%	+73%	(kedokan)	20	20	214%
Geneng	+106%	+119%	+124%	16	11	+112%
Janti	+45%	+78%	+104%	18	17	+92%

Sources : Sample surveys, 1969 and 1971; Resurveys, 1981 (Gunawan Wiradi and Makali 1984: tables 4.16-4.18, 4.20, and app. 4)

<sup>a</sup>The cash component of the wage (excluding value of meals, etc.) converted to paddy equivalent at local prices

<sup>b</sup>Data for 1970-1971 are not available

These increased wage rates are puzzling when viewed in the context of rapidly increasing landlessness and general declines in hired labor use. The most likely explanation, based on qualitative information from the sample villages, seems to lie in the increasingly strict cultivation schedules being prac-

ticed in recent years. As the demands of water rotation and pest control become heavier under conditions of intensive cultivation, farmers have been urged and in some cases obliged to plant at the same time, and they also now tend to plant a restricted range of modern varieties with more uniform maturation periods. They thus find themselves not only plowing, harrowing, hoeing, and planting but also weeding and harvesting at the same time as other farmers in the locality i.e., facing more uniform, briefer, but higher peaks of labor demand which create short-term labor shortages at the local level. This interpretation is consistent with the shift to tractors in two villages and increased use of draft cattle in place of hoeing in four others (even though in three of these hoeing wages are becoming relatively cheaper than plowing wages, as we have seen in Table 7.8). The growth in seasonal peaks in labor demand may result in peculiar problems of adjustment in labor markets and in the division of labor, as was observed in Geneng where the highest growth in both preharvest and harvest wage rates has occurred; at the time of the 1981 resurvey fieldwork, when men were busy harvesting one paddy crop with sickles (having replaced female *ani-ani* harvesters some years before), women were for the first time seen hoeing in the sawah to prepare it in time for the following planting, a task which has previously been considered exclusively male in this village and throughout Java.

Whether these increased real wage rates, essentially anomalous in conditions of overall labor surplus, will continue or whether they represent a short-term reflection of changing labor-demand schedules which employers will find ways to

overcome, are questions which our data cannot answer. However, another development consistent with the 'labor demand' hypothesis is the spread in many villages of alternative labor recruitment practices in place of casual daily labor which function for the employer either to assure him or her of labor supply at peak periods, to reduce labor costs as 'normal' casual wage rates rise, or in some cases to achieve both of these. Table 7.10 shows the frequency of various such practices in the sample villages in 1981. *Borongan* (contract) labor is now found in all except one village in preharvest work, and while it is not completely new there is general agreement that it is increasing. Individuals or more commonly groups of laborers are paid a fixed rate to complete some operation (land preparation, transplanting, or harvesting) on a certain area of *sawah*; the work is more quickly completed with laborers often working longer hours per day, sometimes far into the evening after working elsewhere for a 'daily' wage, and the total cost per hectare is less than casual daily labor (Soentoro et al. 1981:40). A smaller number of *borongan* workers therefore obtain a lower wage for the task but by expending more time or effort they can earn more each day.

In Kebanggan and Sukosari, virtually all farmers use the labor-tying arrangement known most frequently as *ceblokan* in West Java and *kedokan* in Central and East Java, although it also goes by a variety of other local names. In order to gain access to a harvest *bawon*, workers are obliged to perform some preharvest labor and sometimes also post-harvest labor without pay. In Sukosari *kedokan* workers (called *betonan* workers if they make a group contract) must transplant, weed,

harvest, and thresh the harvested paddy and cut the stubble in order to receive their one-fifth 'harvest' *bawon*, and in Kebanggan (where the system is called *paculan*) they perform all these tasks plus water control, hoeing, and the first drying of the threshed paddy for a *bawon* of one-fifth or one-sixth. The consequence of these arrangements (which, given the nature of the tasks, often link men and women in a single labor arrangement) is twofold. First, of course, there is more work for the same wage (although, as pointed out earlier, bigger harvests may increase the absolute value of the *bawon*); but secondly, various periods in the cropping cycle that were formerly times of immediate cash income in daily wage employment (land preparation, transplanting, weeding) now become periods of unpaid work and therefore a time when the probability of having to seek a consumption loan increases. The natural source of such a loan is the *kedokan* employer, who 'owes' the laborer a harvest wag and can therefore recoup the loan and interest by deduction at source when the *bawon* wage is finally paid, thus solving debt-collection problems.

In Rowosari and Wanarata the majority of paddy farmers now arrange their harvest by selling the standing crop to a middleman (*penebas*) shortly before harvest. The *penebas* brings his or her own team of harvesters, using sickles, who are paid a piece-rate cash wage in place of the traditional *bawon*. The *tebasan* system, which was already used by smaller numbers of farmers in 1969-1970, represents a reduction in the effective harvest share from the 'traditional' one-eighth (which in practice often approached one-sixth through skillful selection of the biggest bundles by harvesters for their own

share) to one-eleventh (Collier et al. 1974). As Table 7.10 indicates, there remain only three villages where harvest labor opportunities are open to all comers, and in all villages some form of restrictive or 'exclusionary' labor recruitment arrangement (cf. Hart 1986) is now practiced; while none of these forms are new in Java<sup>6</sup>, there is little doubt that they are increasing.

Table 7.10 *Models of Labor Recruitment and Payment in Paddy Cultivation: 1981 (Wet Season 1980-1981), Use by Percentage of Employers<sup>a</sup>*

	Exchange labor	Casual daily labor	Contract labor	Kedokan	Harvest bawon	Tebasan harvest	Open/restricted harvest <sup>b</sup>
Village	(1)	(2)	(3)	(4)	(5)	(6)	(7)
West Java							
Sentul	86	14	5	-	100	-	R
Mariuk	-	88	62	-	100	-	O
Jatisari	-	80	28	-	100	-	O
Central Java							
Rowosari	-	91	24	-	12	88	O/R
Kebanggan	-	93	-	90	100	-	R
Wanarata	-	94	21	-	3	97	O/R
East Java							
Sukosari	-	84	25	100	100	-	R
Geneng	-	100	44	-	100	-	O
Janti	-	100	100	-	100	-	R

Source : Resurveys, 1981 (Gunawan Wiradi and Makali 1984: tables 4.15, 4.19 and app 4.4)

<sup>a</sup> Since many employers use more than one form of recruitment, row percentages often total more than 100

<sup>b</sup> O = open to all comers

R = restricted acces (invites or those when have done prior unpaid work);

O/R = open 1971, restricted 1981

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<sup>6</sup> Cf. Hüsken and White in Hart et. al. *op.cit.* Chapter 12.



## **G. Agricultural and Nonagricultural Bases of Inequality and Differentiation**

The preceding sections have documented some of the variations between villages in the precise form and pace of agrarian changes occurring during a decade of successful agricultural intensification. Despite these variations some broad generalizations are possible. We have seen that increasing landlessness now leaves about half of all households without sawah ownership rights and about 40 without cultivation rights. The decline in share tenancies has contributed to the relative decline of smaller farm households (although their absolute numbers may not have decreased), allowing average farm size to increase despite the pressure of population growth; agriculture remains dominated by small groups of households owning more than 1.0 ha of *sawah* who (although comprising less than 9 of all households in the nine sample neighborhoods) own more than half the available *sawah*.

Some summary statistics on the levels and sources of income of the different landownership categories—departing from our usual practice and aggregating the nine sample neighborhoods are shown in Table 7.11. Space does not allow detailed discussion of the distribution of nonpaddy agricultural activities and incomes (other seasonal crops, tree crops, livestock, poultry, and aquaculture) which together make up about one-third of the ‘own farm’ incomes shown in the table. (These are detailed for each sample neighborhood by landownership class in Abunawan Mintoro 1984: appendix 8.) Their overall distribution reflects that of paddy incomes, resulting in the highly unequal pattern of agricultural income distribution shown in

Table 7.11: 8.5 of households between them command 50 of all farm incomes. In the sample villages a 'poverty line' income (if defined as many authors have done as per-capita incomes below 310 kg milled-rice equivalent per year) in 1981 amounted to approximately Rp. 61,000 per capita or Rp. 180,000 per household at prevailing local rice prices. As may be seen in Table 7.11, the larger landowning households with more than 1.0 ha of *sawah* are the only group whose agricultural incomes far surpass this level, providing a substantial surplus potentially available for further expansion in agriculture or other activities. On the other hand, while agriculture now provides average incomes (in own-farm and wage income) only slightly below 'poverty line' levels in the sample neighborhoods as a whole, the 65 of households without land or with holdings less than 0.25 ha command agricultural incomes so far below this level that involvement in nonfarm activities is necessary as a matter of survival.

With the decline of share tenancy and the growing tendency for land lease transactions to occur between landowning households, we can discern more clearly the emergence of an elite group of prosperous larger farmers or more accurately farm managers, sometimes supplementing their own holdings with land lease and mortgage, who control a large part of land and farm incomes and also provide the bulk of wage employment in what is primarily a wage-labor-based production system. (As we have seen in Table 7.8, more than 80 of all preharvest labor inputs in paddy production are made by hired labor in most villages, and the proportion is of course still higher for the larger farms.) Although there is some 'horizontal' wage

Table 7.11 Summary : Distribution of Farm and Nonfarm Incomes Among Households by Sawah Ownership Class: 1981

Sawah ownership class	Own farm income			Agricultural wage income		Non farm income		Total income	
	% of all households	Average	% of total	Average	% of total	Average	% of total	Average	% of total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.0 ha and above	8.5	1222	50	5	1	916	23	2143	31
0.5-0.99 ha	10.4	289	15	12	3	410	12	711	13
0.25-0.49 ha	15.8	212	16	25	10	360	17	598	16
Less than 0.25 ha	16.2	105	8	46	18	180	9	333	9
Non owners									
Engaging in agricultural wage labor	41.6	50	10	67	68	255	31	372	26
Not engaging in agricultural wage labor	7.5	0	0	0	0	405	9	405	5
All household	100.0	205	100	41	100	382	100	589	100

Source : Resurveys, 1981 (Abunawan Mintoro 1984: app 8),

Note : Aggregate for the nine sample neighborhoods,=1113 households: incomes in Rp thousands per year

circulation between smaller farm house-holds, the bulk of wage transactions are 'vertical' with 68 of all agricultural wages earned by members of landless households (cf. Table 7.11). The changes we have described, which represent the acceleration and crystallization of trends already long in motion rather than any abrupt break with past patterns of agrarian relations, might then allow us to speak with greater confidence of the emergence of opposing 'commercial farmer/employer' and 'landless agricultural laborer' classes (with the exception of 'backward,' rain-fed Sentul where the transition from exchange to wage labor is only just beginning), at either end of a still large but relatively declining mass of petty commodity producing small-farm households still retaining some access to land and (particularly at the lower end of the scale) supplementing inadequate own-farm incomes with wage labor (cf. Table 7.11).

Such a view may be helpful in characterizing recent changes in production relations in agriculture, but it is inadequate and perhaps highly misleading as a characterization of rural classes or class relations or the 'agrarian structure' as a whole. As we can see from the right-hand side of Table 7.11, nonfarm incomes provided almost two-thirds of all incomes in our nine sample neighborhoods taken together - in what was a relatively successful agricultural year for all villages except Wanarata-and more than half the incomes of each landownership group with the exception of those owning more than 1.0 ha of *sawah* (although the latter still command the highest absolute levels of nonfarm income). As we have seen already in Table 7.1, only Mariuk can still be considered a

relatively 'purely' agricultural village, with two-thirds of all income deriving from agriculture.

To examine first the income sources of 'landless agricultural laborer' households we have eliminated a small number of landless households (15 of landless households, 7.5 of all households) whose members are not engaged in any kind of agricultural activity. These include, for example, 'young' households who have not yet inherited land from relatively wealthy parents and in-migrant households with relatively good incomes from trade or industrial or salaried employment, whose incomes are on the whole higher than those of small-farm and landless agricultural worker households (cf. Table 7.11). Thus, Table 7.11 covers only those landless households whose members obtained some agricultural wage income during the year. For these households, agricultural wages provide only a small proportion of total incomes in all cases, and nonfarm sources easily outweigh agricultural incomes with the single exception of Mariuk. Petty trade and nonagricultural (casual) wage labor (columns 6 and 8 of Table 7.12) provide significant sources of income in all villages and in some cases secure salaried jobs (Kebanggan, Sukosari, Janti) such as school attendants or in local factories. Household industries are surprisingly unimportant, and the low figures provide some support for the impression that many traditional crafts are declining under the impact of competition with urban-produced substitutes. 'Service' sector incomes are prominent only in Wanarata, and in this case mainly derived from *becak* (pedicab) driving. In only a few cases (brick and roof tile industries in Sentul, *kerupuk* [shrimp-cracker] production in Janti, metal working

industries in Geneng) does wage employment in the nonfarm sector involve relations with local employers who are also major employers of agricultural labor. Furthermore, as more detailed analyses have shown (Soentoro et al. 1981:ch. 5; Soentoro 1984), large and probably increasing proportions of non-farm incomes are earned outside the village through seasonal or continuous ('circulating' and in some cases daily 'commuting') out-migration of household members to urban centers—in petty trade, casual labor in the (then) booming construction sector, as *becak* drivers, domestic servants, etc.

Given the involvement of male and female members of 'landless agricultural labor' households in such a wide variety of activities and labor 'statuses' besides farm labor, in petty commodity production, small trade, service sector and wage work, both inside and outside the village, the landless cannot easily be categorized as a landless worker class; we could more usefully underline their semiproletarian status, with all the complex and ambiguous implications for class relations, class consciousness, and class action which that status involves. The same can also be said of the smaller farm households who supplement inadequate own-farm incomes both with agricultural wages and with a similar variety of nonfarm activities both inside and outside the village. We suppose this mobility and diversification of labor will further develop among such households as landlessness and land concentration increase, as the seasonality of agricultural wage-labor demand sharpens, and as agricultural mechanization proceeds, even if real agricultural wages remain at their new higher level for those with access to them. It is interesting to note that only among

Table 7.12 Income Sources of 'Landless Agricultural Labor' Households (Percentage of Total Annual Household Income): 1981

	Agriculture				Non farm sources								Average household income (Rp 1000)	
	% of all households	Own crops	Livestock, poultry, fisheries	Wage labor	Subtotal agricultural income	Trade	Household industry	Wage labor			Services	Other		Subtotal non farm income
								Salaries	(8)	(9)				
Village	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
West Java														
Sentul	26	13	2	2	(17)	17	2	48	6	8	4	(83)	193	
Mariuk	64	9	13	46	(68)	6	0 <sup>b</sup>	10	3	6	7	(32)	273	
Jatisari	27	8	17	15	(40)	22	1	23	-	1	13	(60)	234	
Central Java														
Rowosari	50	3	31 <sup>a</sup>	10	(44)	13	0	23	5	2	14	(56)	353	
Kebanggan	49	5	3	16	(24)	19	2	33	17	1	4	(76)	300	
Wanarata	25	3	2	36	(41)	9	5	19	-	14	12	(59)	316	
East Java														
Sukosari	25	2	8	29	(39)	11	9	13	10	6	12	(61)	295	
Geneng	54	13	1	24	(38)	18	7	17	6	2	12	(62)	365	
Janti	52	4	2	5	(11)	32	1	9	35	5	7	(89)	771	

Source : Resurveys, 1981 (Abunawan Mintoro 1984: app 8),

Note : totals may not add because of rounding.

<sup>a</sup>24% fishing

<sup>b</sup>0 = less than 0.5%

the landless and very small landowning groups (with less than 0.15 ha of *sawah*) do we find a generally negative relationship between agricultural and nonfarm incomes at the household level (Abunawan Mintoro 1984:168-170), indicating that for these groups it is the inadequacy of agricultural-sector incomes which propels their members into nonfarm activities as a survival strategy.

For the middle and larger landowning groups, on the other hand, agricultural and nonfarm incomes are positively associated (*ibid.*)—suggesting that in this case we are dealing with a more dynamic strategy of accumulation, in which surpluses derived from one activity are used to gain access to (and higher incomes in) the other. In Table 7.13 we provide some details for each village on the agricultural and nonfarm income sources of the small numbers of households owning more than 1.0 ha of *sawah*, who (as already seen in Table 7.11) have been the major beneficiaries of state-subsidized agricultural productivity growth by virtue of their control of more than half the land. Any reader who has tried to gather information on the incomes of rural elites through surveys will understand that many income sources are likely to be underestimated, and the small sample sizes (between 6 and 10 in each sample neighborhood) may introduce further distortion; nevertheless this table provides a rough idea of the relative importance of different income sources for members of these prosperous ‘commercial farmer’ households. Land rent is of importance in only a few villages (Rowosari, Mariuk, and Wanarata). In Geneng and Janti, reorganization of sugarcane cultivation, while intended to replace land rental (to the sugar factories)



with 'smallholder cultivation' (by the landowners), has in practice resulted in a new form of rent; land assigned to sugarcane is made over to landowner groups whose leaders organize its cultivation using wage labor, and the net income from sales is divided among the landowners who may have had no direct role in its cultivation. Only in three villages are large amounts of income derived from rural small industries employing wage labor: brick and roof tile enterprises in Sentul, *kerupuk* manufacture in Janti, and commercial rice mills in Rowosari, with a smaller contribution from blacksmithing industries in Geneng which produce small agricultural tools, knives, and vehicle springs. Trade figures prominently only in Jatisari (mainly vegetables and paddy) and Rowosari (paddy and fish); paddy traders in these villages in 1981 specialized in low-price purchasing from farmers unable to reach the minimum moisture content stipulated for guaranteed-price purchase by the cooperatives, to be resold to the cooperatives without further processing through close relations with cooperative officials willing to ignore the regulations.

In Kebanggan, Wanarata, and Janti many members of the large landowning households have secure salaried positions as school teachers. In Wanarata, a large proportion of their nonfarm incomes derive from the hire of vehicles. We should also mention—although the limitations of questionnaire interviews mean that it does not figure in our quantitative data on incomes—that many large landowners also derive income from usury, a major source of loans for the large proportions of households in all villages (especially in the small-farm and landless groups) who reported informal-sector debts; about

Table 7.13 Income Sources of Households Owning More Than 1.0 Hectare of Sawah, (Percentage of Total Annual Household Income): 1981

Village	Agriculture					Non farm sources							Average household income (Rp100.000)	
	Own crops	Livestock, poultry, fisheries	Land rent	Sugar cane 'rent'	Wage labor	Subtotal agricultural income	Trade	Small industry	Salaries	Wage labor	Services	Other		Subtotal non farm income
West Java														
Sentul	49	0 <sup>a</sup>	1	-	-	(51)	-	44	-	0 <sup>a</sup>	3	2	(49)	611
Mariuk	61	12	19	-	-	(92)	4	-	3	-	1	-	(49)	1381
Jatisari	49	1	2	-	-	(52)	22	1	2	-	5	18	(49)	1544
Central Java														
Rowosari	33	0 <sup>a</sup>	31	-	-	(64)	11	25	-	-	-	-	(49)	1376
Kebanggan	62	3	1	-	-	(65)	2	-	21	-	-	12	(49)	2778
Wanarata	17	2	16	-	-	(35)	2	-	11	5	40 <sup>c</sup>	7	(49)	983
East Java														
Sukosari	81	5	2	-	-	(88)	-	5	4	-	3	0 <sup>a</sup>	(49)	4134
Geneng	25	4	13	38 <sup>b</sup>	-	(80)	0 <sup>a</sup>	8	2	-	4	7	(49)	2034
Janti	17	4	4	34 <sup>b</sup>	2	(60)	-	23	10	-	-	7	(49)	2438

Source : Resurveys, 1981

Note : totals may not add because of rounding.

<sup>a</sup>0 = less than 0.5%

<sup>b</sup>Profit on sugarcane (TRI) land (see text)

<sup>c</sup>vehicle hire 3.5%

three-quarters of informal-sector debts were used for income generation (to finance trade or agricultural or nonfarm production) rather than consumption (cf. Colter 1984). In summary, the commercial surpluses deriving from large landholdings and intensified production seem to be invested in a variety of nonfarm activities, few of which are new (vehicles and rice mills are the main exceptions), although many of the 'traditional' ones are modernizing and expanding (for example, through investment in machine-pressing of roof tiles in Sentul). A similar impression emerges from examining the new assets recently acquired by large landowners; in 1981 only in three villages was any new land acquired by this group, the main other form of asset acquisition being vehicles. The large landowners, besides their substantial farm surpluses, also have the greatest access to subsidized bank credits; comprising only 3 of all households and 10 of all formal-sector borrowers, they receive more than three-quarters of all subsidized credits (cf. Colter 1984). We may suppose, therefore, that they will continue to be the dominant rural investors and follow a diversified pattern of investment in small industry, trade, agroprocessing, land acquisition, and usury, balancing these against the demands of children's education and conspicuous consumption (televisions and videos, house improvement, etc.), which are the most visible sign of growing differences in wealth and life-style between rich and poor-even if the incidence of absolute poverty is itself decreasing-in a time of relatively rapid agricultural and nonagricultural income growth.

These patterns help us to understand why land concentration is not proceeding faster, even though the surpluses

available to finance further concentration of landed property are increasing. On the one hand wealthy households have many other avenues for profitable investment' and many demands for nonproductive expenditure, which compete with the alternative of land acquisition. On the other hand, the many smaller owners whose agricultural incomes do not provide reproduction at minimal levels (cf. Table 7.11) are able by participating in a variety of low-return nonfarm activities both inside and outside the village to achieve subsistence incomes without the distress sale of their sublivelihood' plots. These patterns, which are certainly not unique to Java, call for interpretations of agrarian differentiation processes under conditions of commoditization and productivity growth which place the phenomenon of 'part-time' farming and farm labor at all levels of the agrarian structure in more central focus.

## **H. Notes**

<sup>1)</sup> Limitations of space prevent us from discussing these problems in comparability, which are described in detail in a longer version of this paper "Agrarian Changes in Nine Javanese Villages. 1971-1981," available from the authors. The baseline data for '1971' were obtained from two sources. The first comprised sample surveys of thirty farm households in each village from Round 5 of the Agro Economic Survey's 'Rice Intensification Study,' covering wet season 1970- 1971 and dry season 1971. These samples are somewhat upwardly biased with respect to farm size due to the purposive inclusion of five 'large farmers' in the sample. The second source comprised a partial agricultural census conducted at the end of

dry season 1971 in the same villages, which covered all households in two or more neighborhoods to a total of about 200 households and selected those neighborhoods in which the greatest number of the thirty sample farmers were located. These two sources are referred to as 'Sample Survey' and 'Agricultural Census' respectively in the tables. The 1981 resurveys (covering wet season 1980-1981 and dry season 1981) covered all households in groups of contiguous neighborhoods up to a total of about 125 households in each village. It is important to bear in mind that while we speak of the nine 'villages' in the text and tables we are in fact analyzing parts of the villages (neighborhoods), with considerable overlap but not complete correspondence in coverage between 1971 and 1981.

Since there is sometimes considerable interneighborhood variation within the rather large administrative units called 'villages' (*desa* or *kelurahan*) in Indonesia, the lack of complete correspondence between the neighborhoods surveyed in 1971 and 1981 can result in problems of comparability. We think, however, that the 1981 resurveys, trying to cover the largest possible proportion of the baseline neighborhoods, create less problems of comparison than Hayami and Kikuchi's previous (1979) resurvey in Mariuk (Hayami and Kikuchi 1981:ch. 9, in which Mariuk is referred to as 'North Subang village'); the 1979 resurvey appears to have been carried out in a quite different corner of Mariuk than the baseline surveys. Hence it is not surprising that some of Hayami and Kikuchi's conclusions about change in Mariuk differ from ours.

In addition to published monographs on most of the nine

villages (cited in the text), many of the data have been incorporated in a lengthy report covering these nine villages plus an additional three villages from Java (outside the 1971 sample) and three from South Sulawesi (Faisal Kasryno 1984). In many parts of our own analysis we have returned to the original data, which results in some small discrepancies between our results and those of previous reports due to different procedures in dealing with missing data, extreme or improbable values, etc.