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**IN THE SHADOW OF AGRICULTURE: ECONOMIC
DIVERSIFICATION AND AGRARIAN CHANGE IN
JAVA, 1900 - 1990**

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IN THE SHADOW OF AGRICULTURE: ECONOMIC DIVERSIFICATION AND AGRARIAN CHANGE IN RURAL JAVA, 1900 - 1990

INTRODUCTION

The purpose of this paper is first, to provide readers with an introduction to some available secondary sources on rural economic diversification in late-colonial and contemporary Java and second, to discuss some of the analytical and practical implications of incorporating this focus into studies of rural change. The main rationale for this focus is that both historical and contemporary studies of rural Java have tended - as with peasant studies in many countries generally - to "agrarianise" the countryside [Cook 1984: 14], to write about rural economy and society as if these involved exclusively agricultural activities and agrarian production relations, and in doing so have produced a distorted view of rural conditions.

Contemporary information, as we will see, suggests that in Java at least half of rural incomes and in many cases a great deal more, is derived from non-agricultural activities. While such estimates are not possible for earlier periods, there is much evidence of a widespread and lively involvement of rural people in non-agricultural pursuits. In correcting the picture we should not, of course, swing too far the other way; agriculture and particularly paddy production was and is the largest single branch of rural economy in Java, and the one in which the largest numbers of men and women are involved. Non-agricultural activities thus are rightly located "in the shadow of agriculture", but not to the extent that they become obscured by it.

The paper is organised as follows. In the next section we introduce some general issues concerning rural economic diversification and its relation with agrarian change. In the three following sections we take successive historical periods from the turn of the century to the present; for each period, besides looking at available statistical data we return to some of these general issues, many of which were discussed in the literature of the time and which remain issues of importance and debate up to the present. In this way, we hope to show that productive links can be made between late-colonial and contemporary data and research, in terms not only of statistics but also of analytical and practical issues concerning diversification and industrialisation of the rural economy.

We take as our starting-point the first years of this century - taking up the story more or less where Boomgaard (n.d.) stops - by looking at some data from the massive "Declining Welfare Inquiry" of 1903/04 and some other materials from that period. The next section shifts to the last decades of the colonial period, using the 1930 Population Census as its main statistical source. These late-colonial sources are in many ways frustrating for the user. Because of differences in coverage, data-collection methods and/or definitional categories, the statistics are rarely directly comparable either with each other or with later censuses; even when we forget comparisons and

analyse them on their own merits, they are in some respects highly eccentric. Nevertheless, they offer some fascinating insights and on some matters, as we shall see, they are actually more informative than later sources.

We then turn to the post-independence rural economy, first taking a brief look at what the various decennial Population Censuses and Surveys (1961, 1971, 1980 and 1985) have to tell us about the changing structure of rural occupations, and what the two comprehensive industrial censuses (of 1974/75 and 1986) have to tell us about the changing structure of various branches of Java's manufacturing sector. Discussion of these and other statistical materials and a number of published studies from the 1970s and 1980s is used to return us to the issues raised at the beginning of the paper.

Because of limitations of space I have abandoned any idea of a meaningful discussion on inter-regional differences or on specific sub-sectors of the rural "non-farm" economy. It should be noted, however, that precisely because of the enormous regional differences, which are visible in statistics as in qualitative accounts, most serious work on this subject must be done at regional level (as in Alexander & Alexander n.d.); similarly, since the so-called non-farm "sector" of rural economy is not really a sector at all but a negatively defined ("everything except agriculture") bundle of heterogeneous activities, generalisations about it are of very limited use compared to more detailed analyses of particular branches of non-farm activity (as in Antlov and Svensson n.d; Saptari n.d.)

In the choice of concrete illustrations, the paper is somewhat biased towards Western Java, the area in which I am presently engaged in research on these topics. Also, and less by choice, among the various branches of non-farm activity the paper is biased - as is the literature from which it is drawn - towards rural crafts and industries rather than the trade, construction, transport and service sectors, although the latter between them have involved far more rural men and women than rural industries from the beginning of this century to the present.

ISSUES IN RURAL ECONOMIC DIVERSIFICATION AND AGRARIAN CHANGE

In this section we introduce a set of issues concerning the dynamics of the interaction between agricultural and non-agricultural activities in rural economy, and the forms and directions of agrarian change resulting from this interaction. First, a number of issues and debates concern the agrarian conditions which influence the flow of rural labour and capital out of agriculture into non-farm activities; or, looked at from the side of enterprises in the various branches of non-farm activity, the conditions under which labour force and capital formation take place in such enterprises. Both of these processes are clearly related to the extent and forms of agrarian differentiation prevailing, but the precise nature of this link is rarely clear.

The main practical question concerning diversification of the rural economy which has many times been raised is: to what extent, and in what ways, can rural industrialisation offer a solution to problems of land-shortage, poverty and labour absorption in a densely-populated agrarian society? More than seventy years ago as we will see below, observers in Java were already looking over their shoulders at the spectacular experience of Japanese labour-intensive industrialisation and asking if there were potential parallels for Java; the interest in East Asian success stories in this field, and their transferability to other poverty-stricken Asian countries, continues today (Saith 1987).

Regarding the reasons why rural people enter into non-farm activities, in particular we may ask how correct is the picture of rural men, women and children from marginal-farm and landless households being driven increasingly into low-income non-farm activities as a "survival" strategy, to supplement inadequate own-farm or agricultural-wage incomes? According to this view, quantitative increases in non-farm employment are not necessarily a sign of buoyancy, progress or a dynamic diversification in the rural economy (Islam 1984). In the literature on rural Java, there has been some debate on the relative importance of "push" and "pull" factors in the movement of rural labour out of agriculture. This debate has not been very productive, perhaps because authors have often ignored the fact that in a differentiated rural society, different kinds of rural people and households enter into non-farm activities for different reasons, and under very different conditions: alongside "survival" strategies of marginal cultivators and landless, we may find members of small-farm households engaging in non-farm activities as an important "consolidation" strategy, and larger farm or landowner households, the beneficiaries of the agrarian differentiation process with an increasing agricultural surplus to dispose of, investing part or all of it outside agriculture as part of a dynamic strategy of "accumulation". The relative importance of these strategies may shift over time, but there is no reason why they may not occur together - indeed, that is precisely what we should expect - in a differentiated rural society.

Large agglomerations of labour-intensive rural industrial production - whether consisting of large-scale "factory" units, or a mass of smaller workshop units - require for their existence a large labour force, whose formation in turn is based in the process of agrarian differentiation which produces the marginal-farm and landless groups from which this labour-force is drawn. In this respect, rural industries are like plantations; and like plantations, when local differentiation processes are not advanced enough - or the numbers thereby "dislodged" from agriculture not great enough - to produce the required labour-force, they tend to import labour from other regions in which differentiation is further advanced.

We have so far considered mainly the effect of agrarian differentiation on patterns of rural diversification. The other side of the question is equally important: how and in what ways do patterns of diversification affect the agrarian differentiation process? In some Asian countries, non-farm activities and incomes are distributed among rural households in more or less inverse proportion to their landholdings and agricultural incomes; in other words, the effect of non-farm activities has been to

reduce income disparities (the countries often cited as examples are Japan, Taiwan and S. Korea, cf. Oshima 1986). A different but related question is whether the availability of non-farm incomes for marginal-farm households on the one hand, and avenues for non-farm investment for large-farm and landowner households on the other, may lessen, delay or counter the process of differentiation or polarization in control of agrarian assets.

There is no doubt that many of the "survival"-strategy types of non-farm activity - especially, but not only, those in which women and children are involved - command chronically low returns, generally much lower than prevailing agricultural wage rates. Handicrafts, home- and workshop-industries usually fall into this category. Since the beginning of this century, there has been disagreement about whether handicraft incomes can be raised through institutional interventions and/or through commercialisation and incorporation of handicraft production into distant and export markets.

Rural crafts and industries are often viewed as a domain of petty, independent "household" or "artisan" enterprises in which wage and dependency relations are not widespread. This is perhaps one of the reasons why they have been a favourite target both for the interventions of government agencies (in credit programmes etc.) both past and present, and for the activities of populist-leaning non-governmental organisations (NGOs, or in Indonesian: LPSM/LSM) today. However, for most branches of non-farm production, the view of an undifferentiated mass of household enterprises is no less a myth than the view of Java's agricultural producers as an undifferentiated mass of "small farmers". When the structure and relations of various non-farm production branches are examined more closely, differentiation among "small" producers is often found to be widespread and well-developed (just as it is among Java's "small-scale" agricultural producers, cf. Hüsken & White, 1989), and as we shall see the signs of this differentiation were visible in many branches of production in colonial times. Even when production units remain small-scale, examination of their external relations often reveals chains of sub-contracting and/or putting-out links to larger production and/or brokering enterprises in which the role of small producers is better described as that of disguised wage-workers. The analytical implications of this differentiation are similar to those discussed in the literature on European "proto-industrialisation"; its immediate practical implications are that such dependent producers - not being "entrepreneurs" in any useful sense of the term - are essentially beyond the reach of small-entrepreneur-oriented interventions, in the absence of substantial institutional change. As we shall see, such relationships seem to have characterised most branches of rural industry at least since the 1930s.

Another important area of debate and enquiry concerns the sexual division of labour in non-farm activities, and the extent and direction of shifts in this division of labour as these activities become larger in scale, incorporated in wider economic circuits and/or subject to penetration of external capital. As early as the beginning of this century such shifts were already being noticed.

We should also note the important role of state intervention in all the processes discussed above. Space prevents discussion of this aspect in this paper; useful examples in the case of specific rural industries will be found in Antlov and Svensson (n.d.) and Saptari (n.d.).

Finally, we should mention a problem of a purely practical nature, concerning the nature of the information available to us. The most simple and obvious question raised about rural non-farm activities, curiously, is virtually impossible to answer with large-scale statistics, or at a local level with any kind of non-intensive research technique: how many rural people, and what kinds of rural people (by age, gender, land-holding class and so on) have been engaged in non-farm activities at various periods, and what kinds of changes are occurring in this involvement? Census-type data and conventional labour-force statistics provide only partial answers, since these only record one "job" for those "employed", in defiance of the reality noted in many qualitative accounts and local-level surveys, that many if not most members of rural households are engaged in a number of different income-earning activities (cf. White, 1976; Hart, 1986). This is important to note, since in the sections which follow we will perform by making considerable use of census data, as the only available data which allow some systematic comparison over time.

STARTING POINT: RURAL JAVA AT THE BEGINNING OF THE 20th CENTURY

What kind of picture of rural occupations and income sources can be gleaned from the main sources of large-scale data in the early 20th century: in particular, from the massive "declining welfare" enquiry of 1903/04 and accompanying population count of 1905, and the 1930 Population Census which both offer some possibilities of comparison with post-colonial statistical sources?

The 1905 occupational statistics published in the reports of the Declining Welfare Inquiry are unusual in two ways. Firstly, unlike previous statistics they are disaggregated for men and women (although, as we shall see, there seems to have been large-scale under-enumeration of women's occupations). Secondly, unlike previous statistics but also all subsequent population censuses from 1930 to the present, they attempted to enumerate not only the primary or main occupations, but also the non-farm occupations that were carried out in combination with farming by members of households, as part of a multiple-occupation strategy. First, however, we will look at the statistics on the distribution of primary occupations, i.e. those which offer a possibility of comparison with subsequent census data.

Table 1 below shows the 1905 occupational statistics in their original (unadjusted) state. At first glance, the most remarkable feature of these statistics is the very low percentage of the total labour force engaged in agriculture, a pattern caused by the apparently very low agricultural involvement of women, while male involvement shows a more "normal" pattern by modern standards. 70 percent of men and only 21

Table 1:
DISTRIBUTION OF MAIN OCCUPATIONS, JAVA & MADURA, 1905:
UNADJUSTED FIGURES

(Rural & urban, excluding the principalities, in thousands)

	MALE	(%)	FEMALE	(%)	TOTAL	(%)
A. AGRICULTURE:	4637	70	1334	21	5971	46
1. Owner or tenant farmers	3265	49	317	5	3583	28
2. Employees	1371	21	1017	16	2388	18
B. INDUSTRY, TRADE, TRANSPORT, SERVICES:	837	13	1289	20	2126	16
3. Own-account workers	538	8	831	13	1369	11
4. Employees	300	5	458	7	758	6
C. RESIDUAL (adults in labour force but not recorded in 1-4 above):	1144	17	3780	59	4924	38
D. TOTAL LABOUR FORCE	6618	100	6403	100	13021	100
(Apparently unrecorded or not in labour force):	(63)		(856)		(919)	
E. TOTAL ADULTS in 1905 population count:	6681		7259		13940	

Source: *Overzicht* (1908: Appendix 22 for agriculture; 1909: Appendix 1 for non-farm & residual; 1911: Appendix 1 for population totals)

Note: In this and subsequent tables, row and column totals may not tally precisely due to rounding procedures.

percent of women, making a total of only 46 percent, are recorded in agriculture (as farmers or wage-workers); compare this with the figures (which we will see below) of 71 and 69 percent for 1930 and 1960 respectively. The problem clearly lies largely in the large numbers in the "residual" category, those who were not recorded as exercising any "occupation or business", particularly the large number of women (59 percent of all women). The 1905 statistics recognised only two kinds of employment status, (1) own-account workers (as farmers, traders, craftspersons etc.) and (2) wage workers; the category of "unpaid family worker" is not recognised, and it is likely that a large proportion of both the men and women in the "residual" therefore are in that category. But how were they distributed over the sectors? A large number no doubt

were in agriculture (the wives of the 3.2 million male "farmers", and the adult but still dependent children of these and/or the 0.3 million women "farmers"). But how many? Two kinds of simple adjustment would be possible: one assigning them all to agriculture, the other making no a priori assumptions but distributing them - for want of any better solution - pro rata over all sectors of the economy as unpaid family workers.

The first alternative produces a very high proportion of 84 percent of agricultural workers in the total labour force; most will agree that this is impossibly high (particularly since the figures here include the urban population), and we have therefore not used it here. The second alternative, in which the residual category are distributed pro rata as unpaid family workers over all the "own-account" occupations (but not among the agricultural and non-farm employee groups, which by their nature do not normally have unpaid family workers attached to them) produces an intuitively more likely figure of 73 percent. A second necessary step, to make the figures comparable with later statistics, has been to distribute the non-farm "employees" (who are not disaggregated by sector in the 1905 data) pro-rata over the various "non-farm" sectors. These adjustments have been made to produce the adjusted 1905 statistics in Table 2.

In Table 2, the 1905 and 1930 occupational categories have been adjusted and combined to make them as comparable as possible with modern labour-force statistics; we have added the data from the first post-independence Census (1961) for comparison. In this summary table, data for men and women are combined (disaggregated male and female data will be provided in later tables); also, since the 1905 and 1930 data do not allow a rural/urban disaggregation, this table combines rural and urban while subsequent tables from 1961 onwards will cover the rural population only. As will be seen, if we accept the adjustments made to the 1905 data, the proportion of the labour force engaged in agriculture as a primary occupation seems to have remained stable at close to 70 percent for more than half a century despite the increase of about 50 percent in the absolute size of the agricultural labour force.

It is difficult to draw many other conclusions about change from this table. The apparently massive growth in manufacturing employment from 1905-1930 may be partly illusory, since for 1905 wage-workers in all non-agricultural occupations were lumped together in the unadjusted data, and our adjustment procedure (distributing them pro rata over all the non-farm sectors) may have wrongly assigned many wage-workers to trade, transport and services who were in fact working in crafts and industry. Similarly, the apparent decline in industrial employment (both relative and absolute) between 1930 and 1961 should be looked at with caution before we cry "de-industrialisation!"; the 1930 "industry" figures may include a number of craftsmen (carpenters, bricklayers etc.) who in 1961 are assigned to the "construction" sector (which was not a separate category in 1930).

Table 2:

OCCUPATIONAL DISTRIBUTION OF THE LABOUR FORCE,
JAVA & MADURA, 1905, 1930 and 1961

(Rural & urban, in thousands)

Sector	1905 (adjusted)		1930		1961	
	No.	(%)	No.	(%)	No.	(%)
1. Agriculture, forestry, fishing	9534	73	9413	71	14579	69
2. Mining & quarrying	-	-	44	*	28	*
3. Manufacturing	845	7	1699	13	1463	7
4. Construction	-	-	-	-	431	2
5. Electricity, water, gas	-	-	-	-	31	*
6. Trade, banking, insurance	1101	9	1034	8	1666	8
7. Transport, storage, communication	123	1	222	2	493	2
8. Services	1418	11	810	6	2360	11
9. Unknown or insufficiently definable occupations	-	-	1436	-	406	-
Total labour force	13021	100	14659	-	21456	-
Total (excl. row 9)	13021	100	13222	100	21050	100

Sources: 1905: as for Table 1; 1930: *Volkstelling 1930* (1936: *Deel VII*, Table 18); 1961: *Sensus Penduduk 1961* (1964: *Seri SP-II*, Table 8)

Notes: * = less than 0.5%
1905: excludes the principalities. As described in the text, the 1905 data have been adjusted by (1) assigning all workers in the "unspecified/other" category pro rata to all own-account sectors (i.e. to farmers, tenants and to the four own-account non-farm sectors trade, manufacturing, transport and services); (2) assigning non-agricultural wage-workers pro rata to the own-account non-farm sectors. 1930 and 1960: percentages exclude the "unknown" category row 9, which has the same effect as distributing them pro rata over categories 1-8.

Table 3 provides a more detailed breakdown of non-farm occupations by gender and sub-sector and also by whether the participants were landless or combined this activity with a farm enterprise. [1] Examination of this table suggests a number of interesting conclusions. First, even before making any adjustments, the number of

Table 3:

NON-AGRICULTURAL OCCUPATIONS OF THE NATIVE POPULATION,
JAVA & MADURA 1905

(Rural & urban, excluding the principalities, in thousands)

	MALE	FEMALE	TOTAL
A. SELF-EMPLOYED	929	958	1887
1. Trade and moneylending:	297	310	607
a. Combined with farming	127	48	175
b. Without farming	170	262	432
2. Land & water transport:	107	1	108
a. Combined with farming	59	*	60
b. Without farming	48	1	48
3. Crafts & industries:	169	312	481
a. Combined with farming	89	61	150
b. Without farming	80	252	332
4. Other non-farm trades, enterprises and services:	356	334	690
a. Combined with farming	116	18	134
b. Without farming	240	317	556
B. EMPLOYEES IN NON-AGRICULTURAL OCCUPATIONS 1-5 ABOVE:	424	531	955
a. Combined with farming	125	73	198
b. Without farming	299	458	758
TOTAL NON-FARM OCCUPATIONS:	1353	1489	2842
Combined with farming	516	200	716
Without farming	837	1289	2126

Source: *Overzicht* (1909: Appendix 1)

persons "specialising" in non-agricultural occupations (i.e. not combining these with control of a farm) is quite high: 2.1 million or about 16 percent of the total labour force. This in fact is not so surprising, when we remember that already in 1905 about 40 percent of Java's total 5.3 million recorded households (and of the 13.0 million labour force) were landless (Hüsken & White 1989: 241); they were therefore dependent either on agricultural wage-work (which, as we have seen in Table 1, employed 2.4 million) or on non-farm occupations (2.1 million) for their main or sole income source.

Secondly, the total number of recorded non-farm occupations is slightly greater for women than for men; 52 percent of those recorded in non-farm occupations are women. Women are the majority in trade and moneylending, crafts and industries, and non-farm wage employment while men predominate only in transport, and the large "other" category.

Finally, the level of "proletarianisation" seems to have been already quite high in non-farm activities, as well as in agriculture. As we have seen in Table 1, 40 percent of the agricultural labour force were wage-workers (2.2 million in "peasant" agriculture, 0.2 million in foreign estates) compared to 36 percent of those in non-farm activities. Unfortunately, we cannot distinguish which of the various "non-farm" sub-sectors had high or low proportions of wage-workers as compared to own-account workers or employers, since all non-farm wage-workers are lumped into a single category in the statistics. Proletarianisation is an important indicator of the degree of internal differentiation in non-farm enterprises, as it is in agriculture, although this single indicator does not tell us anything about the specific shape of differentiation (for example, a few large capitalist enterprises hiring hundreds of workers, versus a larger number of petty commodity producers and small-capitalist enterprises, each hiring a handful of workers and working alongside them).

That is about all the 1905 statistics have to tell us. The Declining Welfare Inquiry, of course, was not primarily a quantitative survey, but a questionnaire which asked local officials mainly for qualitative information on a large range of topics (see Alexander & Alexander, n.d.). The reports from each district and the thick volumes which summarise these reports contain a wealth of information on non-farm activities - albeit somewhat drily presented - culled from answers to the district-level questionnaires, and often also from other relevant reports and publications from the years preceding the Inquiry. [2] These sources have been little used, and there is a mine of information here awaiting some industrious researchers.

We can make no attempt to summarise this information here, but will select a few aspects which provide a link with issues still alive today. Hasselman mentions the widespread increase in petty trading activity, as indicated by the increased numbers of traders, frequency of attendance at pasars, numbers of warongs, goods carts, etc. These are taken by Hasselman as evidence that "the native is increasingly driven by circumstances into seeking a livelihood outside agriculture, and that in consequence one can gradually observe a shift from agriculture to other enterprises" (Hasselman

1914: 118). Here then we see the view - repeated in many subsequent studies in Java, and elsewhere in Asia - that the shift of labour into non-farm activities is more due to "push" than to "pull" factors; that is to say, the lack of adequate opportunities to make an adequate living in agriculture, for marginal-farm households and/or landless wage-workers, is seen as compelling household members to seek part of their livelihood outside agriculture, in activities that are not necessarily more attractive in terms of returns but are more easy of access to those without land or capital resources.

This may have been correct for the majority of the population, but - as may be expected in non-farm sectors that are already differentiated - besides offering "survival" incomes to the poor, they also offered something closer to "consolidation" income to middle-size peasant households, and "accumulation" opportunities at least to some of the more fortunate minority of larger landowners. In discussing responses to the Inquiry's question : "How does the average native owner-farmer and his family make ends meet?", the report cites van Deventer's (1904) estimate of household incomes for peasants with one *bahu* (0.7 ha.) of sawah in which 15 guilders or close to one-fifth of the household's annual income is provided by "the home-industry of his wife and children, and his own coolie-labour", and also the Inquiry's own report from Pasuruan which calculates that one *bahu* of sawah yields just enough income for the household, but only "if there are no house-repairs needed, no fences and farm equipment to replace, no sickness, no circumcisions or other ceremonies to pay for ... it appears then, that a side-enterprise (*nevenbedrijf*) and side-earnings (*bijverdiensten*) are mostly indispensable to swell the peasant's purse" (*Overzicht* 1911: 51). This looks more like the "consolidation" strategy as defined above rather than a matter of bare survival. Similarly, the report's illustrations of the amounts of capital involved in some kinds of trade and industry - often amounting to some hundreds of guilders, or several times what a landless labourer could earn if employed throughout the year - indicate that a small minority (who were not all Chinese) were able to pursue strategies of "accumulation".

"Cottage-industry" (*huisvlijt*) [3] is mentioned in a great many districts, alongside temporary out-migration as coolie labourers, as one of the most important means by which both landless and small-peasant households made ends meet. The latter was primarily undertaken by men, while women and children were predominant in the former. As *huisvlijt* activities are incorporated into larger economic circuits and become "commercialised", Hasselman noted a tendency for the sexual division of labour to shift in the direction of men, in an early statement of the "female marginalisation" thesis:

"so long as crafts and industries retain the character of *huisvlijt*, some specific tasks are carried out by men and others by women. But as soon as products are really produced for the market, a change occurs in this division of labour and men undertake various of the activities otherwise done by women. Thus for example, one sees many more men than women working at sewing-machines in the pasars, and also some parts of the batik process, for large-scale orders, are done by men" (Hasselman 1914: 149).

The chronically low earnings in *huisvlijt* are documented in many cases, with earnings generally lower than 10 guilder-cents per day and in some cases as low as 2-3 cents a day in various kinds of textile and bamboo weaving and rope-making (*Overzicht* Vol. IXa: 105-107; Vol. VIb: Appendix 5). These may be compared with the data on agricultural wage levels: wages in peasant agriculture for adult men were generally between 15 and 30 cents (with the most common being 20 cents, and some isolated cases of as little as 10, or as much as 50 cents per day), and for women generally between 10 and 20 cents (*Overzicht* IXc: Appendix 7), and generally somewhat higher than this in European and "foreign Asiatic" agricultural estates (*Overzicht* VIc: Appendix 1). Observers reacted in various ways to these low earnings. Hasselman concluded that declining prices for many handicrafts items were "not due to overproduction, but mainly to increased imports from Europe, to the lower quality of domestic products or the low purchasing power of the population" (Hasselman 1914: 135; the low quality of native craft products is also discussed by Rouffaer [1904]). One of the Inquiry's editors seemed more concerned to justify the low level of earnings than to explain them:

"In judging these low earnings, the editor feels, it should not be overlooked first, that in *huisvlijt* advantage is taken of moments that otherwise would be lost for earning; furthermore, that the work is performed in an environment which is more free and thus more pleasant for the male or female worker, while he or she has the opportunity to combine it with other activities, which saves the cost of assigning these tasks to others (e.g. caring for small children); that due to the airiness of the native bamboo dwellings, a part of the objections attached to home-industry in Europe - working in a stuffy room, with little light and ventilation - do not apply, or only in the towns" (*Overzicht* 1911: 107)

The most interesting analysis of handicraft production at the time is perhaps Pleyte's (1911) lively and engaged study, based on personal observations, of various types of rural industries in West Java. He describes a visit to the batik-sweatshop of a well-to-do employer,

"a hovel with a dirty earthen floor, on which there sat about twenty men and women, batikking under the supervision of a foreman. I asked about wages, and was told that women's wages were 7½ cents and men's 10 cents per day. When I responded that this was very little, I was told 'but they are fed too' as if they were animals. 'What do they get to eat then?' I was shown some hard, red rice with a little salt scraped from the packing of some salt fish ... In one corner there sat a child of fourteen with a baby at her breast, a divorced (that is, abandoned) mother; she had stopped working for a moment to feed her baby. A beautiful opportunity for my host to impose himself as master: 'If you want to be fed, you must work, lazy-bones!'" (Pleyte 1911: 37).

Such experiences made Pleyte sceptical of the optimistic claims made for the potential of small-industry:

"small-industry propagandists, you know only the outward appearances and judge native industries by them. Go into the kampungs, visit the slums and hovels where the pieceworkers live and work, and see with your own eyes how the dispossessed in native society do their work and eke out their existence!" (Pleyte 1911: 38)

One of the *prima donnas* among rural industries at the time was the hat industry of Tangerang in West Java. Introduced first by Chinese from Manila, the fine-woven bamboo hats became popular in France and the United States. By 1908, 6.8 million hats were being exported per year (2.6 million each to the USA and France); adding to this production for the domestic market, Pleyte estimated that the industry was producing about 10 million hats per year, which meant about 800,000 guilders in earnings for weavers. Many of the Inquiry's district-level respondents in other parts of West Java, when asked "what kinds of industries deserve encouragement?" and "which new industries could be generated ? (provide information on the chance of success!)" (questions no. 390 and 391 of the Inquiry), referred to the success-story of Tangerang and the possibilities of replicating it for bamboo or other crafts (see for example the responses from Sukapura, Bandung and Sukabumi, *Samentrekking* 1906: 48-49).

For Pleyte, however, this industry was an instructive example of the dubious economic consequences for producers of the emergence of a world-market product:

"The Tangerang hat industry provides an instructive and decisive answer about what kinds of benefits for the workers involved may be expected from other, new industries , and one that deserves our attention all the more for the fact that it presently produces literally millions of hats, which in turn require the labour of thousands of hands to produce them. When one turns from this so fine-looking achievement to the question: what value has this for the worker? then one comes to this pitiful lesson: no more than the earning of a starvation-wage. Even the most industrious men or women weavers can earn no more than 10 cents per day. For this reason, in households with no other income sources than hat-weaving, all are forced to help, including very young children, and so one sees even the tiniest children, still absolutely dependent on mothers' care, already fellow-slaves in the struggle for their daily food. The same will occur in all industries producing for the world market; they bring the craftsman into wage relations even less favourable than indigenous, domestic industries" (Pleyte 1911: 59f.)

In the uplands of West Java, where the area under tea-estates had been rapidly expanded in the late 19th century, handicrafts were being abandoned in favour of the higher wage-incomes available in plantation work:

"all rural industries have either disappeared or will do so in the foreseeable future under the influence of the ever-spreading tea production ... the difference in earnings between those working in tea production and those who must live from day to day by small industry production is such that one could not expect anything else" (Pleyte 1911: 46)

This example is particularly interesting, since as we will see in the next section, only a couple of decades later we find a rapidly-developing rural "improved craft" industry in the same region having the opposite effect, drawing labour away from the tea estates.

THE 1930s: DEPRESSION AND (PROTO)-INDUSTRIAL REVOLUTION?

War in Europe, the depression following barely a decade later, and the disruptions both caused in the flow of manufactured imports to the colonies, gave policy makers much concern for the need to develop (or in some cases, revive) domestic industries. In 1917, at the height of the destruction and uncertainty in Europe caused by the Great War, Jonkheer van Reigersberg Versluys was commissioned to assess the possibilities of factory-based industrialisation in the Indies (but with an eye particularly to Java). The causes for this concern, it seems, were not only the desire to establish certain essential industries in case of further international shocks, but also the need to increase native incomes in a situation in which good possibilities were still seen for continued agricultural growth, but not for increased agricultural labour absorption and incomes (Versluys 1917: 7-10); while at the same time, the influence of raised consumption expectations was making itself felt, especially among peasants who had had the chance to see something of urban life-styles ("first the cinema, then football matches, a clock or watch, better clothes; if all goes well, then follows the bicycle" [Versluys 1917: 15]).

Versluys was sceptical about the prospects of "*huisnijverheid*" (home industry, or small home-based industries in which the owners worked alongside a few hired workers) which he considered unable to compete with domestic or foreign factory products, and equally enthusiastic about the future of "*fabrieksnijverheid*" (factory-industry, with or without mechanisation) with its modern Taylorist methods of labour organisation. A further advantage of factory industry was its capacity to absorb people with very little skill training: "the simplest craft takes years to learn, but in a modern factory 90 percent of the workers do tasks that can be learned in a few weeks, or even days" (Versluys 1917: 28). The workers' time, furthermore, could be totally devoted to production: "he is not bothered by the crying of his children or the chattering of his wife, and also protected against his own laziness and weakness, because he really has to work continuously for all the hours that he spends in the workshop" (van Reigersberg Versluys 1917: 29). The Javanese he considered poorly suited to home-industry, but well-suited to factory work, and Javanese women better-suited than Javanese men.

[3]

In considering how factory industry might emerge, Versluys made much of the historical experience of Europe's industrial revolution, in which the first factory entrepreneurs emerged not from the ranks of craft producers but from among the class of merchants who formerly purchased their products (often in putting-out relations), and at a certain point shifted to centralised production under their own direct control (Versluys 1917: 33f.). In Java, such merchants were mainly Chinese and European. Versluys considered the possibilities for development of various branches of industry, giving most space to textiles. Nothing, he argued, could be expected from the existing home-based handloom weaving:

"Despite a wage that we cannot call a starvation-wage only because the people do somehow survive on it, all native cloth is several times more expensive and lower quality than imports. Only modern equipment, and likewise modern factory organisation, are worth considering"(Versluys 1917: 73).

For various reasons, native or Chinese entrepreneurship and capital would not be equal to the task, and therefore the majority of these factories would have to be owned and managed by Europeans. Competitiveness however should be achieved without either setting high duties on imported cloth, or super-exploitation of the work force, "the exploitation, and working 25 percent of them to death, of thousands of women" as had been the case in Japan (Versluys 1917: 73). As we will soon see, the eventual revival of Java's textile industry did not at all take the form Versluys envisaged.

The majority of manufacturing production units in Java, in fact, were neither "home industries" nor "factories", but something in between as can be seen in statistics from the 1930s. The next large-scale enumeration of Java's labour-force was the 1930 Census, which was taken shortly after the onset of the depression but before it had made its impact fully felt in Java. [4]

The basic occupational statistics for 1930 (which we have already seen in summary form in Table 2) are shown in Table 4. Once again we have the problem of a relatively large number of "insufficiently definable occupations" (just under 10 percent of the total, see row 9) which we have assumed, in the percentage columns, to be distributed pro rata over the other sectors. We also have the problem of a large-scale under-enumeration of women, (only 33 percent of the total recorded labour force) probably mainly in the "unpaid family worker" category and probably especially in agriculture, but it should be noted that this under-enumeration is no more serious than that found in modern censuses. [5] The large numbers employed in manufacturing and trade as primary occupations (now over 20 percent of the total), and the domination of both these sectors - particularly manufactures - by women, are worth noting. [6] 12.9 percent of the labour force were engaged in manufacturing, as a primary occupation; this included more than one-quarter of the female labour force, both of which proportions have not yet been exceeded at any time since.

Table 4:
WORKERS CLASSIFIED ACCORDING TO OCCUPATIONAL GROUPS,
JAVA & MADURA, 1930

(Rural & urban, in thousands)

Sector	Male	(%)	Female	(%)	Total	(%)
1. Agriculture, forestry, fishing [1-9]	7199	79.7	2213	52.8	9413	71.2
2. Mining & quarrying [10-12]	34	0.4	10	0.2	44	0.3
3. Manufacturing [13-21]	564	6.2	1135	27.1	1699	12.9
4. Construction [-]	-		-		-	
5. Electricity, water, gas [-]	-		-		-	
6. Trade, banking, insurance [26-35]	436	4.8	598	14.3	1034	7.8
7. Transport, storage, communication [22-25]	217	2.4	5	0.1	222	1.7
8. Services [36-47, 49, 52]	582	6.4	228	5.5	810	6.1
9. Insufficiently definable occupations [51]	853		583		1436	
Total	9885		4773		14659	
Total (excl. row 9)	9032	100	4190	100	13222	100

Source: *Volkstelling 1930, Deel III*, Table 24; *Deel VIII*, Table 18.

- Notes:
1. This table includes "natives" (from Vol. III, Table 24) and "Europeans", "Chinese" and "Other non-indigenous orientals" (from Vol. VIII, Table 18). The totals are therefore somewhat (about 1.5%) higher than those derived from the provincial volumes of the 1930 census (which include only "natives"). The statistics on native occupations in Vol. VIII can not be used since the male and female columns have been confused in that volume.
 2. Numbers in square brackets refer to the occupational categories used in the 1930 Census, which in some cases have been re-grouped here for greater comparability with subsequent censuses.
 3. Categories 48 "living from private means" and 50 "unproductives" are excluded from this table.
 4. Percentages are on the base of Total 2 (excluding row 9 i.e. category 51 "insufficiently definable occupations"). This procedure has the same effect as to assume that these occupations are distributed pro rata over rows 1-8.

The main value of the 1930 census data for our purposes, however, lies first, in the relatively detailed occupational categories used in the census publications (altogether no less than 52 categories, including 43 for the non-agricultural occupations - compare with the 9 sectors, including only 8 non-agricultural sectors, used in modern census publications); secondly, in the availability of an ethnic breakdown by occupations; and thirdly, when combined with a survey carried out by the Department of Economic Affairs in the mid-1930s, in what it can tell us about the internal structure of industries by sub-sector.

The breakdowns of industrial and trading occupations by sub-sector and ethnicity are given in Tables 5a and 5b. Looking first at manufacturing, we find an interesting if predictable distribution between sub-sectors, with the textile industry being the largest employer, followed in descending order by the food industries (in which are included also beverages and tobacco products), wood and bamboo products, garment industries, metal-working, and ceramics. Women represent more than 90 percent of all textile producers, and a large if less spectacular majority in the food industries and

Table 5a:
BREAKDOWN OF MANUFACTURING OCCUPATIONS BY SUB-SECTOR,
SEX AND ETHNICITY, JAVA & MADURA, 1930
(Rural & urban, in thousands)

SECTOR/sub-sector	INDONESIANS			Euro- peans	Chi- nese	Other Asian	Total
	M	F	Total				
1. Food & beverages	137.4	294.0	431.4	0.8	12.6	0.4	445.2
2. Metalworking	56.9	1.5	58.4	0.3	3.2	0.1	62.1
3. Textiles	40.6	455.9	496.4	*	1.5	0.3	498.2
4. Ceramics	29.6	26.0	55.6	0.1	0.1	*	55.8
5. Wood/bamboo products	95.2	243.9	339.1	*	10.8	*	349.9
6. Carriage & boat-building etc.	5.0	0.1	5.1	0.2	1.2	*	6.5
7. Leatherworking	3.1	0.2	3.3	*	0.1	*	3.4
8. Clothing industries	88.5	92.0	180.5	0.4	5.0	0.4	186.3
9. Other industries	70.1	15.4	85.6	2.0	3.4	0.1	91.1
Total industries	526.4	1129.1	1655.5	3.9	38.1	1.5	1699.0
Percent			97.4	0.2	2.2	0.1	100.0

Source: *Volkstelling* 1930, Vol. III, Table 24 (for Indonesians); Vol. VIII, Table 18 (for Europeans, Chinese and Other Foreign Orientals).

* = less than 50 persons

bamboo and wood products (here, much of the traditional crafts of mat- and basket weaving); men and women are about equally involved in ceramics (clay-based brick- and tile-works and pottery) and the garment industries, while men dominate the metalworking industries and the less important carriage/boat-building and leatherworking. Ethnically, the involvement of non-Indonesians is much less significant in manufacturing than in trade (2.6% of the total, compared to 12.1% in trade).

In trade (Table 5b) the food industries (including beverages and tobacco products) employ far more people than any other branch, with almost two-thirds of all trading employment. Mixed retail trade comes next, and it is in this branch (the

Table 5b:

BREAKDOWN OF TRADING OCCUPATIONS BY SUB-SECTOR,
SEX AND ETHNICITY, JAVA & MADURA, 1930

(Rural & urban, in thousands)

SECTOR/sub-sector	INDONESIANS			Euro- peans	Chi- nese	Other Asian	Total
	M	F	Total				
1. Food & beverages	181.3	454.9	636.2	0.4	23.6	0.4	660.6
2. Textiles	17.6	15.9	33.5	0.1	16.9	4.9	55.4
3. Ceramic ware	7.3	5.9	13.2	*	0.5	*	13.8
4. Wood, bamboo etc.	22.9	20.6	43.5	0.1	0.7	0.1	44.4
5. Means of transport- ation	1.8	*	1.8	0.6	1.0	0.1	3.5
6. Clothing & leather- ware	7.0	3.6	10.6	0.2	0.8	0.3	11.9
7. Mixed retail trade	45.3	53.0	98.3	1.5	49.4	2.8	152.0
8. Wholesalers & brokers	5.8	0.8	6.6	3.5	1.9	*	12.0
9. Other trades	22.9	28.5	51.5	1.2	5.4	0.9	58.9
10. Loans & credit	13.4	0.3	13.7	1.8	5.3	0.6	21.4
TOTAL TRADE	325.4	583.5	908.9	9.4	105.4	10.2	1034.0
Percent			87.9	0.9	10.2	1.0	100.0

Source: as for Table 5a

"general store") that a heavy Chinese presence is most evident, with almost one-third of all traders in this branch being Chinese. The other branch in which a large Chinese and "other Asian" presence is evident is textile trading, in which these two categories of "foreign Asians" together made up almost two-fifths of all traders. In contrast to manufacturing, domination by one gender is not evident in any of the main trading branches, except for foods in which almost three-quarters of all "native" traders are women. Europeans are not prominent in any branch, except that of "wholesale trade and brokerage" in which they far outnumber the Chinese; more than one-third of all European traders were in this field.

What kinds of differentiation among production units were to be seen in Java's main manufacturing branches in this period? A survey carried out by the Industry Division of the Department of Economic Affairs in 1936, when combined with the 1930 census figures, provides a crude but probably usable estimate of the proportions in "artisan" (independent, household-scale), "*bakul*" (dependent, putting-out), "workshop" (small-capitalist, employing up to about 50 workers) and "factory" units for the main manufacturing branches. The most striking and significant aspect of this survey (whose results are shown in Table 6) is the firm evidence it gives of the large numbers of manufacturers in the "disguised wage-worker" category of "*bakul*" or putting-out producers: that is to say, they were working with materials (and sometimes equipment) provided, and producing products owned, by merchant capitalists who themselves are not to be found in this table but among the merchants of Table 5b. The number of these dependent producers is almost as great as that of the "genuine" (independent) artisan producers. In the food industries, as one would expect, this form of dependency relation was not common; in textiles, and wood and bamboo crafts, it was extremely important with over half of all workers in this category.

It is in fact after 1930 that Java's textile industry is considered to have taken a rapid and spectacular leap forward, particularly though not exclusively in the region of Majalaya, southeast of Bandung. This is one of the most frequently cited illustrations of the (proto)-industrial revolution which was said - especially by colonial apologists during the occupation, independence struggle and early years of independence - to have been achieved in the last years of colonial rule (see especially Sitsen, 1943). The textile industry has been well analysed, both by colonial apologists (Warmelo 1939; Aten 1952-53) and others (Matsuo 1970; Svensson & Antlöv, n.d.) and a recent study has brought the story up to date (Hardjono 1990); [7] We will not go into any details here but simply note a few aspects of this revival, since they encapsulate so many of the issues raised at the beginning of the paper.

First, the textile industry's growth took a form completely different from that advocated by Versluys: not modern machinery and large-scale factories owned and managed by Europeans but thousands of improved hand-loom, the great majority of which were operated in units of less than 15 looms, joined later by a smaller number of power-loom (introduced in 1939 after Majalaya's electrification and numbering 500 by 1942, but still in relatively small-scale establishments); in enterprises virtually all owned and managed by local Sundanese or Chinese rather than Europeans, and in a

Table 6:
NUMBERS OF INDONESIAN WORKERS IN MANUFACTURING INDUSTRY
BY FORM OF PRODUCTION UNIT, JAVA 1930/1936*

(in thousands)

	Small - scale industry					Factory industry TOTAL (%)	
	Arti- sans	Bakul (putt- ing out workers)	Work- shops	Total			
1. Food, beverages & tobacco	323	32	50	405	26	431	26%
2. Metal industry	20	20	-	40	18	58	4%
3. Textiles	25	280	176	481	15	496	30%
4. Ceramics	20	20	-	40	15	55	3%
5. Wood & bamboo products	119	200	-	319	25	344	21%
6. Garments	120	50	-	170	10	180	11%
7. Other manu- factures (incl. leather industry)	40	40	-	80	11	91	5%
TOTAL	667	642	226	1535	120	1655	100%
(%)	40%	39%	14%	(93%)	7%	100%	

Source: Segers (1987: 79) citing Sitsen (1937: 713)

*Note: These estimates were produced by the Industry Division of the Ministry for Economic Affairs, based on a survey carried out in 1936. The results of this survey appear to have been applied to the 1930 Census figures to produce the Java-wide estimates. See Segers (1987: 28, 80).

complex network of sub-contracting and putting-out arrangements. Second, the rapid growth of the industry and its eventual international competitiveness (by the late 1930s sarongs were exported in considerable quantities, mainly to Malaya) were due to a combination of government interventions at both "macro" and "micro" level. At micro level, skill training, introduction of "appropriate technology" (the TIB-loom),

small-scale credit, and eventually electrification; at macro level, enterprise licensing and import quota regulations which tried to juggle the somewhat incompatible demands of excluding Japanese imports, and simultaneously protecting both domestic production and imports from the Netherlands, and also a devaluation of the Netherlands Indies guilder in the late 1930s which gave an added price advantage to local textiles in both the local and export market (Matsuo 1970; Warmelo 1939).

Finally, a rapidly-growing industry requires a ready stream of cheap labour as a prerequisite for the success of any of the above policies, and that stream must inevitably have its source in the rural economy. Agrarian conditions in Majalaya and the surrounding region help to explain why that particular location became the centre of the industry's revival. Besides being one of the most densely-populated areas of West Java, agrarian differentiation had begun earlier in upland West Java than in other regions, and a great number of peasants had been driven off their land since the 1870s. Two surveys of small-scale weavers and weaving labourers in the 1930s indicate that "the textile labourers were mainly young peasants driven off the land, or from the poorest farming class who had no other means of earning their own living" (Matsuo 1970: 41); both sexes were involved in weaving, but the majority were young women and girls (Warmelo 1939: 21-22).

Wages, at 20 cents per day for (male or female) weavers and 10-15 cents for women and children in ancillary tasks such as winding, reeling and sewing, were said to be high enough to attract tea-pickers working at the nearby tea-plantations, in contrast to the situation reported by Pleyte a generation earlier, when higher tea plantation wages had attracted workers out of rural industry; but we should remember that we are discussing a period in which export-crop production, and with it plantation wages, had themselves collapsed, and many plantation workers had been made redundant (Antlöv and Svensson, n.d.). A generation later, as we will see, the situation would again be reversed.

In the next section we will first note some of the main features of agrarian conditions in Java since independence, before seeing what large- and small-scale data have to tell us about the place of non-farm activities and incomes within that agrarian context.

THE RURAL NON-FARM ECONOMY SINCE INDEPENDENCE

In 1905, we have seen above, about 40% of Java's households were landless. The proportion of landless some 80 years later, if we consider only rural households, has hardly changed despite a threefold increase in their absolute numbers as shown by the figures in Table 7. Actually, in the early 1980s only one-third of rural households controlled no land at all; to this number, we should add the 1.04 million households who had less than 0.1 ha and are generally classified as functionally landless, bringing the total number of landless to 6.56 million households or 42 percent of the total. When we add to the farm households those landless households which derive some income from agricultural wage labour (row 2b in Table 7) it appears that only about

Table 7:

NUMBERS OF RURAL HOUSEHOLDS ENGAGED IN AGRICULTURE, RURAL JAVA 1983 (IN MILLIONS)

	Number (mlns.)	% of rural hhlds	% of all land	average area (ha.)
1. Farm households:	9.23	58	99	0.63
a. 0.1 - 0.49 ha	4.98	32	21	0.26
b. 0.5 - 0.99	2.45	16	26	0.67
c. 1.0 - 1.99	1.31	8	27	1.29
d. 2.0 and above	0.49	3	25	3.11
2. Functionally landless households:	6.56	42		
a. Having less than 0.1 ha	1.04	7	1	0.05
b. Landless farm workers	1.36	9	-	-
c. Not engaged in agric. sector	4.16	26	-	-
Total rural households	15.79	100	100	

Source: *Sensus Pertanian 1983, Series A2*

one-quarter of rural households are not involved in the agricultural sector in any way at all, as operators, agricultural wage workers, or in a large number of cases as both. [8] Developments in agriculture therefore directly affect the lives of three-quarters of rural households, despite the fact that only 62 percent of the rural labour force recorded their primary occupation in the agricultural sector in 1980 and 1985 and that this proportion has been declining since 1961, both for men and women, although the 1985 data suggest that this decline may more recently have slowed down (see Tables 8a - 8c).

Table 8a:
EMPLOYED PERSONS BY INDUSTRY, RURAL JAVA & MADURA, 1961 - 1985
(MALE & FEMALE, IN THOUSANDS)

Sector	1 9 6 1		1 9 7 1		1 9 8 0		1 9 8 5	
	No. (%)		No. (%)		No. (%)		No. (%)	
1. Agriculture	14334	79.6	15823	72.2	15642	61.8	17901	62.2
2. Mining	24	0.1	16	0.1	144	0.6	140	0.5
3. Manufacturing	904	5.0	1592	7.3	2214	8.8	2679	9.3
4. Construction	246	1.4	300	1.4	722	2.9	934	3.2
5. Utilities	10	0.1	7	*	33	0.1	18	0.1
6. Trade	1036	5.8	2328	10.6	3217	12.7	3983	13.8
7. Transport	188	1.0	294	1.3	497	2.0	701	2.4
8. Services	1261	7.0	1557	7.1	2829	11.2	2418	8.4
9. Other/unknown	353		798		325		38	
Total	18358		22715		25650		28790	
Total (excl. category 9)	18004	100.0	21916	100.0	25298	100.0	28752	100.0

Sources: *Sensus Penduduk 1961; Sensus Penduduk 1971; Sensus Penduduk 1980; SUPAS 1985.*

Notes: * = less than 500 persons / less than 0.05 percent

That is one way of characterising Java's rural economy. Conversely however, a more realistic and relevant description of rural conditions would also stress that although less than 40 percent of the rural labour force are recorded as employed in non-farm occupations, there are in fact very few households which do not obtain a significant part of their incomes from non-agricultural sources. One recent large-scale source, the National Social-Economic Survey

Tables 8b - 8c:

EMPLOYED PERSONS BY INDUSTRY, RURAL JAVA & MADURA, 1961 - 1985
(BY GENDER, IN THOUSANDS)

	1 9 6 1		1 9 7 1		1 9 8 0		1 9 8 5	
Sector	No. (%)		No. (%)		No. (%)		No. (%)	
b. MALE:								
1. Agriculture	10715	81.6	10756	74.0	10804	64.3	11782	64.6
2. Mining	16	0.1	13	0.1	123	0.7	123	0.7
3. Manufacturing	538	4.1	869	6.0	1149	6.8	1327	7.3
4. Construction	239	1.8	297	2.0	707	4.2	920	5.0
5. Utilities	10	0.1	7	*	27	0.2	17	0.1
6. Trade	627	4.7	1157	7.9	1532	9.1	1750	9.5
7. Transport	178	1.4	292	2.0	491	2.9	696	3.8
8. Services	819	6.2	1147	7.9	1969	11.7	1618	8.9
9. Other/unknown	198		348		196		19	
Total	13325		14880		16998		18233	
Total (excl. category 9)	13127	100%	14533	100%	16802	100%	18214	100%
c. FEMALE:								
1. Agriculture	3619	74.2	5067	68.6	4838	56.9	6116	58.0
2. Mining	8	0.2	*	*	21	0.3	30	0.3
3. Manufacturing	367	7.5	722	9.8	1064	12.5	1352	12.8
4. Construction	7	0.1	4	*	15	0.2	15	0.1
5. Utilities	*	*	*	*	6	0.1	1	*
6. Trade	424	8.7	1176	15.9	1685	19.8	2233	21.1
7. Transport	10	0.2	3	*	6	0.1	6	0.1
8. Services	442	9.1	409	5.5	861	10.1	801	7.6
9. Other/unknown	156		451		156		19	
Total	5033		7834		8653		10557	
Total (excl. category 9)	4878	100.0	7384	100.0	8496	100.0	10556	100.0

Sources and notes: as for Table 8a

of 1987, shows the share of non-farm sources in rural household incomes to be more than 50 percent in all regions of Java, as shown in Table 9; the same orders of magnitude are found in village-level studies (such as those of the Agro-Economic Survey, in White and Wiradi 1989).

Table 9:
PATTERNS OF RURAL HOUSEHOLD INCOME BY SOURCE AND PROVINCE,
JAVA 1987 (IN THOUSAND RUPIAHS)

province	OWN ENTERPRISE			wages/ salary	other	total
	agricul- ture	industry	trade & services			
WEST JAVA	175 (27%)	17 (3%)	84 (13%)	364 (56%)	13 (2%)	653 (100%)
CENTRAL JAVA	254 (48%)	18 (3%)	56 (11%)	192 (36%)	7 (1%)	527 (100%)
EAST JAVA	252 (38%)	90 (13%)	48 (7%)	265 (40%)	15 (2%)	669 (100%)

Source: Calculated from SUSENAS 1987 data by Kasryno
& Swenson (1989: 45)

The tendency for so many households to combine farm and non-farm income sources is easier to understand when we bear in mind the extremely small average size of Java's farms, and their unequal distribution among rural households, which may be seen in Table 7 above. Average farm size in 1983 was 0.6 ha (or somewhat less than 80 x 80 metres), with the majority of farm households having much less than that so that in their case the description "marginal-farm" or "near-landless" would not be inaccurate; however, just over half of all the land is operated by the 11 percent of households with holdings of 1.0 ha and above (and average holdings of 1.8 ha). Thus, although "small peasant" households predominate numerically, the majority of small-farm production is in fact carried out in units of 1.0 ha and above, which under Java's rainfall, irrigation and "green revolution" conditions nowadays constitute relatively "large" farms, capable of providing those who own them with substantial surpluses.

This structure, as may be expected, results in a relatively skewed distribution of agricultural incomes, and various large- and small-scale studies have concluded that

the period of relatively rapid growth in small-farm production has resulted in an increase in those inequalities; although the agricultural incomes of the rural poor may have grown, they have grown much less rapidly than those of more wealthy large-farm households. While real agricultural wage rates are generally thought to have risen somewhat during the late 1970s or early 1980s (Papanek 1985; Manning 1987; White and Wiradi 1989), they still remain among the lowest in Asia (Manning 1988).

The involvement of so many farm households in non-farm activities might be hoped to function as a powerful counter to the agrarian inequalities based in unequal landholdings; it is often for precisely this reason that rural industries and other non-farm sectors are vigorously promoted in Indonesia and many other Asian countries today, as if they could function as an alternative to agrarian reforms. In this respect, however, Java represents the opposite of the "East Asian" pattern found in Japan, Taiwan and South Korea, as dramatically shown by the comparison in Table 10. In Japan, farm and non-farm incomes in the late 1970s were inversely related, so that considerable inequalities in farm incomes were almost precisely balanced out by the opposite pattern in non-farm incomes; the result is that the total household incomes of

Table 10:

DISTRIBUTION OF FARM HOUSEHOLD INCOME BY LAND-
HOLDINGS, JAPAN AND JAVA, ca. 1980

Farm size	Agricultural	Non-Farm	Total
JAPAN (1978): (million Yen)			
2.0 and above	3.49	1.45	4.95
1.5 - 1.99	.26	2.13	4.39
1.0 - 1.49	1.63	2.58	4.21
0.5 - 0.99	0.80	3.34	4.14
0.1 - 0.49	0.24	3.79	4.02
JAVA (1981): (million Rupiah)			
1.0 and above	1.22	0.92	2.14
0.5 - 0.99	0.30	0.41	0.71
0.25 - 0.49	0.24	0.36	0.60
Less than 0.25	0.15	0.18	0.33

Sources: Japan: calculated by Kada (1986) from the Farm Household Economic Survey (1978), covering all regions except Hokkaido.

Java: Agro Economic Survey data covering 1113 households in 9 paddy-producing villages, as discussed in White and Wiradi (1989)

the largest and smallest farm-size groups differ only by a ratio of five to four. In Java, on the other hand, farm and non-farm incomes tend to be positively related, showing a symmetry almost as neat as the asymmetry of the Japanese pattern; the effect is the reinforcement of the pattern of overall income inequalities so that the total incomes of the largest and smallest farm-size groups differ by more than six to one. We are talking here of a general pattern, and there are certainly villages which show a more "East Asian" pattern (see for example, the descriptions of desa Janti in East Java in Abunawan 1984 and Soentoro 1984; and of villages in Tangerang, West Java in Schrevel 1989).

This example helps us to understand that in a differentiated and "unreformed" agrarian structure such as that of Java, households and individuals occupying different positions in the agrarian structure involve themselves in non-farm activities for different reasons, and under very different conditions which also provide very different returns. We might usefully distinguish:

- (a) first, large farm or landowner households which command an agricultural surplus comfortably above their basic subsistence needs. Members of such households may invest part or all of this surplus in non-farm activities with relatively high returns, which may in turn be re-invested in agricultural expansion; suggesting that in this case we are dealing with a dynamic strategy of accumulation, in which surpluses from one activity are used to gain access to (and higher incomes in) the other.
- (b) second, a middle group of small farm households whose agricultural income can cover basic subsistence needs in normal years but whose members engage in lower-return non-farm activities, not as a matter of survival but more as a strategy of consolidation; as a source of security against periodic agricultural failures or unexpected crises demanding extra income, as a source of more frequent and regular income than that provided by seasonal crops, or sometimes simply in an effort to expand the household's resource base or that of its younger members;
- (c) lastly, marginal-farm or landless households for whom it is the sheer inadequacy of incomes from own-farm production and/or farm labour which propel their members into non-farm activities, without capital and therefore with low returns, as a strategy of sheer survival.

It is the last group of households - a large group, probably comprising at least one-half of rural households - to whom arguments about "push vs. pull" factors in the shift of rural labour out of agriculture are relevant. The debate concerns the issue, whether the kinds of non-farm incomes available to members of land-poor and landless households are sufficiently higher than agricultural wage-incomes to attract or "pull" rural labour out of agriculture, creating "tightening" in the rural labour market which in turn causes agricultural wage rates to rise; or whether they are so much lower than agricultural incomes or wage rates that people only move into them because "pushed"

by the lack of better opportunities in agriculture, and without creating any farm labour shortage or labour market tightening. Empirical studies on this question are not always conclusive. [9] If we compare, for example, average hourly/daily incomes in "trade", "manufacturing" etc. with agricultural wage-rates across a whole village, it may frequently appear that non-agricultural labour-incomes are higher; but this is often due to the averaging of incomes of enterprises of vastly different scale within a particular subsector (for example, traders with Rp. 500,000 and 5,000 of working capital). A better method is to look specifically at the non-farm labour incomes available to those groups which also normally engage in agricultural wage labour, i.e. landless or small-farm household members who are likely to lack capital or high-value skills. One such analysis is available from six villages in East and West Java in 1983: the results suggest that in both upland and lowland villages, the majority of non-farm incomes available to poorer households yield lower labour-incomes than farm labour, the only exceptions being construction work (both regions) and transport in the lowland villages (Husein Sawit and Djoko Triono 1984). For some of the higher-return non-farm activities, labour-incomes might appear still lower if we exclude the significant proportions of those incomes that are earned not in rural but in circular migration to urban areas, a point to which we will return later.

Another recent study, shown in Table 11, documents in detail the hourly incomes available in agricultural and non-farm work in a village near the textile centre of Majalaya to which we have referred in the previous section. If we compare non-farm incomes with male and female wages in the "basic" farm work of hoeing and planting, it is interesting to note that labour incomes lower than farm wages are found not only in "traditional" village craft activities or those facing declining markets (e.g. handloom weaving on the same "TIB" looms introduced half a century previously), but also include driving motor-cycle taxis or ojek (when the machine is rented, i.e. without capital investment), work in brick production for the construction industry which at that time (1981) was still enjoying rapid growth, and work in a modern urban textile factory. In Majalaya, the textile looms which - as we saw in the previous section - at one point pulled labour away from agriculture with higher wages, now offer wages below farm-labour rates for both men and women, except for a small minority of skilled workers.

Such studies serve to highlight the extremely marginal nature of much rural non-farm activity, in both traditional and "modern" sectors and in both small- and large-scale enterprise. This is confirmed by two other studies of rural women's employment in peri-urban or small urban centres with rapid manufacturing growth in Tangerang, West Java (Mather 1983) and Ungaran, Central Java (Wolf 1986). Both of these studies found that the wages received by these (mainly young, unmarried) rural women in factory work were below their basic subsistence costs, necessitating subsidies provided by their rural parental households. Where wages (or self-employed labour incomes) in non-farm activity are insufficient even for a single person's basic needs, as Jones has noted:

"This supplementary employment does serve to hold people in rural areas, but it is not serving as an "engine of growth", dynamising the rural sector and creating the higher incomes on which further diversification can be based" (Jones 1984: 150)

Table 11:

HOURLY RETURNS TO FARM AND NON-FARM WORK,
SUKAHAJI (WEST JAVA) 1981 (RUPIAH PER HOUR)

AGRICULTURAL			NON-AGRICULTURAL		
Buffalo-ploughing	M	600	<i>Delman</i> driver (owned)	M	400
			(rented)	M	200
Hoeing	M	150	<i>Ojek</i> driver (owned)	M	200
			(rented)	M	125
Pond construction	M	170	Carpenter	M	200
Pulling peanuts	M	133	Sawing timber	M	150
Duck-herding	M	150	Vegetable trader		
			(wholesale)	M	156
Transplanting (rice)	F	133	Saltfish trader	M	200
Weeding, fertilising	F	80	Noodleseller (itinerant)	M	166
Harvesting: local rice	F	300	Soft drink seller ("	M	100
HYV rice	F	180	<i>Warung</i>	F	75
Grass-cutting	M/F	50	Retail (Majalaya market)	M/F	100
Gleaning	F	16	Handlooms:		
			- setting up rollers	M	187
			- threading looms	M	150
			- weaving <i>sarong</i>	M/F	122
			- weaving <i>blacau</i>	F	55
			- winding bobbins	F	30
			Mechanised weaving:		
			- skilled	M/F	150
			- semi-skilled	M/F	100
			- unskilled	M/F	50
			Brick-making:		
			- digging clay	M	83
			- moulding bricks	F	17
			- carrying rice-husks	M	100

Source: Hardjono (1987: 257, 260)

M = male F = female

We have already mentioned some cases in which the search for non-farm income involves members of rural households in seasonal or circulatory migration to urban centres or periurban industrial zones; the numbers circulating in this way - normally as individuals rather than whole households, thus retaining a rural household base - appear to be very large, and to be increasing. In the Agro Economic Survey re-study of West Java villages (1976 - 1983) it was found that 38 percent of households had members working in rural areas during 1983 compared to only 10 percent in 1976; the corresponding figures for individuals were 19 and 6 percent (Manning 1987). In isolated cases the proportions of circular migrants may be much higher; for example, in a purposively selected Central Javanese "circular migration village" studied in 1984, Hetler (1987) found that no less than three-quarters of all households had at least one member engaged in circular migration. Such studies confirm the impression given by the thousands of long-distance buses hurtling daily across the countryside of Java, that literally millions are involved; they also point to a rather more sober assessment of the dynamics of rural economic diversification, since circular rural-urban migration is essentially a response to the absence in the rural economy itself of sufficient (or sufficiently attractive) non-farm income opportunities, so that they must be sought in the urban economy.

Another indication of the fragile and vulnerable base of the rural non-farm economy is the relatively sluggish rate of rural manufacturing growth in comparison to the other, "dependent" or "supporting" non-farm sectors. As we have seen in Table 8 above, rural manufacturing employment, beginning with a very low base in 1961 (much lower, both absolutely and proportionately, than that of 1930) provided just 25 percent of all non-farm employment; that is to say, for every rural manufacturing worker three in non-manufacturing sectors of non-farm economy (mainly trade, services, construction and transport in that order). The proportion rose slightly by 1971, declined again slightly by 1980 and returned to precisely the same level at 25 percent by 1985; the corresponding figure in 1930 (Table 4 above) was 45 percent, i.e. almost one rural manufacturer for every other non-farm worker.

This evidence of the absence of a fast-growing manufacturing core in rural non-farm economy may surprise some readers who have seen the evidence of much rapid labour-intensive industrial growth in Java, particularly since the mid-1970s. In fact, as various kinds of industries have grown, others have declined, as documented by comparison between the two comprehensive post-independence industrial censuses of 1974/75 and 1986 shown in Table 12. Unfortunately the data in this table cannot be broken down into their rural and urban components, but it is likely that if they could, the trends shown in the table would be represented, perhaps even more strongly, on the rural side. Table 12 allows us to see both in which sectors of industry, and in which scale of enterprise, employment growth or decline has taken place during a period of relatively rapid industrial output growth. The three major sectors in which overall employment growth has been negative (wood and wood products) or sluggish (food, beverages and tobacco; and textiles, garments and footwear) are also those in which Table 12 shows large-scale disemployment in the household sector and a rapid

shift to small and medium/large scale. The result is that household-scale manufacturing employment overall has declined by more than one-third during this period.

Table 12:

NUMBER OF WORKERS IN MANUFACTURING INDUSTRIES BY SUB-SECTOR AND SCALE, JAVA & MADURA (1974/75 AND 1986)

(IN THOUSANDS)

SUB-SECTOR	HOUSEHOLD/ COTTAGE		SMALL		MEDIUM & LARGE		TOTAL		% CHANGE
	1974	1986	1974	1986	1974	1986	1974	1986	74-86
1. Food, beverages and tobacco	1125	855	104	227	247	434	1475	1515	+3%
2. Textile, wearing apparel and leather	297	122	52	108	167	365	516	594	+15%
3. Wood & wood products including furniture	1232	575	21	73	6	35	1259	683	-46%
4. Paper & paper products, printing & publishing	76	14	6	19	19	51	101	84	-17%
5. Chemicals, oil, rubber & plastic products	3	10	10	20	58	180	71	210	+197%
6. Non-metallic, non-oil mineral products	145	220	33	68	18	74	196	361	+84%
7. Basic metal industries	-	-	*	-	2	12	2	12	+687%
8. Metal products, machinery & equipment	33	67	16	30	52	164	100	261	+261%
9. Other manufacturing	90	280	3	47	5	10	98	336	+242%
TOTAL	3001	2142	244	591	572	1325	3817	4057	+6%
Change 74/5 - 86 (%)	-29%		+142%		+132%		+6%		

Sources: *Sensus Industri 1974/75* (1977-1978); *Sensus Ekonomi 1986* (1987).

Note: * = less than 500

In conclusion, we may note that more attention to the role of non-agricultural incomes and investments can help us to understand why land concentration and agrarian polarisation have not proceeded faster in Java, although the agrarian surpluses available to finance further acquisition of land by wealthy households are increasing. For land-rich households, many other avenues of profitable investment compete with the alternative of land concentration; for the millions of marginal-farm households unable to survive on their meagre agricultural incomes, access to non-farm incomes provides an alternative to the liquidation of their inadequate holdings. A focus on patterns of "part-time" farming at all levels of the agrarian structure is therefore an important tool in the empirical analysis and interpretation of agrarian differentiation processes.

NOTES

1. The figures in Table 3 are unadjusted, therefore the absolute totals for the various "self-employed" categories probably would be increased by about 38 per cent if we were to try to include an "unpaid family worker" component.
2. For non-farm activities, the most relevant volumes are those on "Native Trade and Industry", "Non-native Trade and Industry" and parts of "Village Economy" (*Overzicht* 1909, 1912 and 1911 respectively and the corresponding residency-level reports).

The results of the Declining Welfare Inquiry may be studied at various levels of complexity, depending on the user's interest and stamina. First, for each Residency a "*samentrekking*" (summary) of the local (*afdeeling* or district-level) reports was published within 2-3 years of the Inquiry's completion, with a separate volume for each major topic. The data are presented by district, making detailed district-level analysis possible. The "*samentrekking*" volumes on "trade and industry", for example, are between about 30 - 80 pages long for each of the 15 residencies. A few years later, a set of thick "*Overzicht*" (overview) volumes was produced, which summarise these regional reports, again by topic: the text of the volume on "native trade and industry" (*Overzicht* 1909) for example, is 248 pages, with an accompanying 228 pages of appendices. The texts of these volumes are quite difficult to read, and less useful than might be expected; the information is presented in dry, telegraphic form without many of the concrete illustrations that are so informative in the regional volumes, without attempts to summarise or generalise. However, the statistical appendices to these volumes are very useful.

Lastly, for those less interested in fine details and/or regional and local-level information, Hasselman (1914) was commissioned by the Minister of the Colonies to produce a general overview of the results of the whole Inquiry, in 348 pages of text with 20 statistical appendices. This is well-organised and easy to read, and is a genuine attempt to summarise and generalise without repeating again the details of the local reports. However, perhaps for this reason, some of the generalisations seem to derive more from the author's own preconceived ideas rather than from the local data themselves (see also Alexander & Alexander, n.d. who also comment on this tendency).

3. The reasons why he thought so, couched in a invidious racist comparison of the suitability of "Asians", "negroes" and "Europeans" for factory work (Versluys 1917: 49-52) are best left undiscussed.
4. If we take as our indicators the collapse of agricultural prices and coolie wages, the worst effects of the depression in Java were felt in the years 1933-1935 (cf. Sumitro 1989: Ch. 2).

5. The proportion of women in the total recorded labour force of Java and Madura has in fact remained remarkably stable during this century:

Women in the total rural employed population

1905 Population Count	32.4 %*
1930 Population Census	32.6 %*
1961 Population Census	27.4 %
1971 Population Census	34.5 %
1980 Population Census	33.7 %
1985 Intercensal Survey	36.7 %

* - rural and urban

This is not to suggest that the statistics have recorded women's participation accurately throughout this period, but rather that the degree of under-enumeration has been relatively consistent over the years.

6. In trade, particularly, large regional differences in the gender balance may be seen both in 1930 and in recent statistics -- one of those rare and satisfying cases where cultural differences in gender stereotypes are fully reflected in occupational statistics:

Region	Women as percent of all those employed in trade:	
	1930	1985
West Java	21 %	39 %
Central Java	70 %	> 66 %
Surakarta	83 %	
Yogyakarta	84 %	75 %
East Java	73 %	63 %
All Java	64 %	57 %

7. Other rural industries of this period have been well-described and offer fruitful comparisons with their rural or urban present-day successors. Particularly useful are the studies commissioned by the colonial Department of Labour on the batik

and cigarette industries (de Kat Angelino, 1930-1931; van der Reijden, 1934-1936;); see the contemporary studies of Joseph (1986) on batik and Castles (1967) and Saptari (n.d.) on the cigarette industry.

8. In the 1983 Agricultural Census statistics another 2.87 million "agricultural wage labour" households are concealed within the "farm households", the majority probably among the marginal farms of row 1a in Table 7.
9. The later writings of Collier (Collier et al. 1982) and an article of Rietveld (1986) argue for the first view; Hart (1986) and White (1976) for the second; some other analyses from the 1980s take more of a half- way position (e.g. Manning 1987).

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