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**Non-Farm Activities in Rural Areas**

**The Case of Indonesia**

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## Abstract

In this paper a review is given of the role of small scale rural industry for regional development in developing countries, especially Indonesia. The role of industry in the rural economy is discussed. The factors influencing the participation of farm households in small-scale manufacturing activities are investigated. It is found that this participation strongly depends on the conditions in the agricultural sector. Various subsectors in rural industry are distinguished, with different prospects for future development. Special attention is paid to the equity aspects of rural industry. Rural industry appears to a very important source of income for the rural poor, but also rich farm households display substantial participation in this sector. Finally, conclusions are drawn with respect to government policies aiming at promoting rural industry. The general conclusion reads that small-scale rural industry will benefit most from a broadly based agricultural development and the abolition of a scale bias in industrialization policies. About the effectiveness of specific stimulation policies addressed to rural small-scale industry one must not be overly optimistic.

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## 1. Introduction

Rural small scale industry has long been considered as a topic of marginal importance for industrialization in developing countries. Recently, analysts and policy makers are becoming increasingly aware of the importance of this sector, not only as a medium to survive for poor villagers, but also as a starting point for industrial growth. In this paper we will discuss the role of rural small scale industry for regional development in developing countries. Empirical illustrations will focus on Indonesian experiences with rural small scale industry.

In a paper based on empirical evidence from a large number of developing and developed countries, Anderson (1982) concludes that changes over time in the size structure of industry tend to take place according to a definite pattern (see Figure 1). In the beginning of industrialization, household and artisanal activities are predominant. As industrialization proceeds, its share is continuously decreasing, while the shares of small workshops and factories as well as large factories (with more than 100 workers) increase. In the beginning the increase of the share of the first group tends to be much faster than of the second group, however. Only as the process of industrialization proceeds further, the increase of the share of small firms comes to a halt and large firms start to obtain considerable shares of manufacturing employment.

Figure 1 indicates the importance of small scale industry during the process of industrialization. Which factors can explain that it is small scale industry - not large scale industry - which is the main driving force of industrialization during the transition process? Staley and Morse (1965) mention the following three reasons.

First, in most countries the degree of urbanization is still low when the process of industrialization starts. Accordingly, one may expect a dispersed pattern of consumers of industrial goods. Since transport networks are usually not yet well developed in this phase of industrialization, transport costs will play an important role in the determination of the optimal size of firms. Large factories give rise to high production costs per unit output compared with small factories, since scale advantages are more than offset by distribution costs.

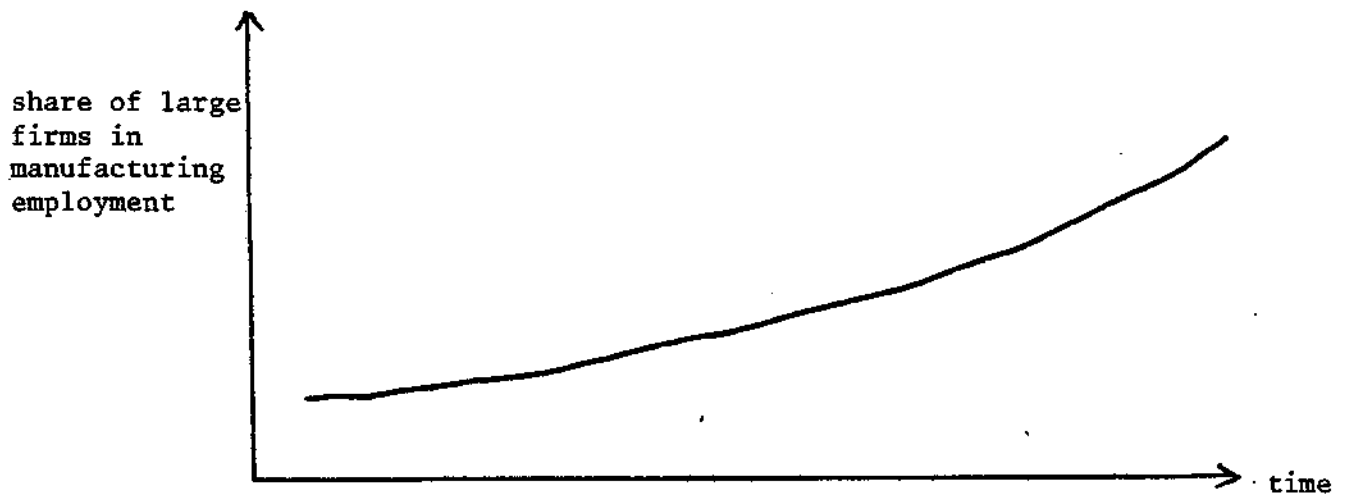
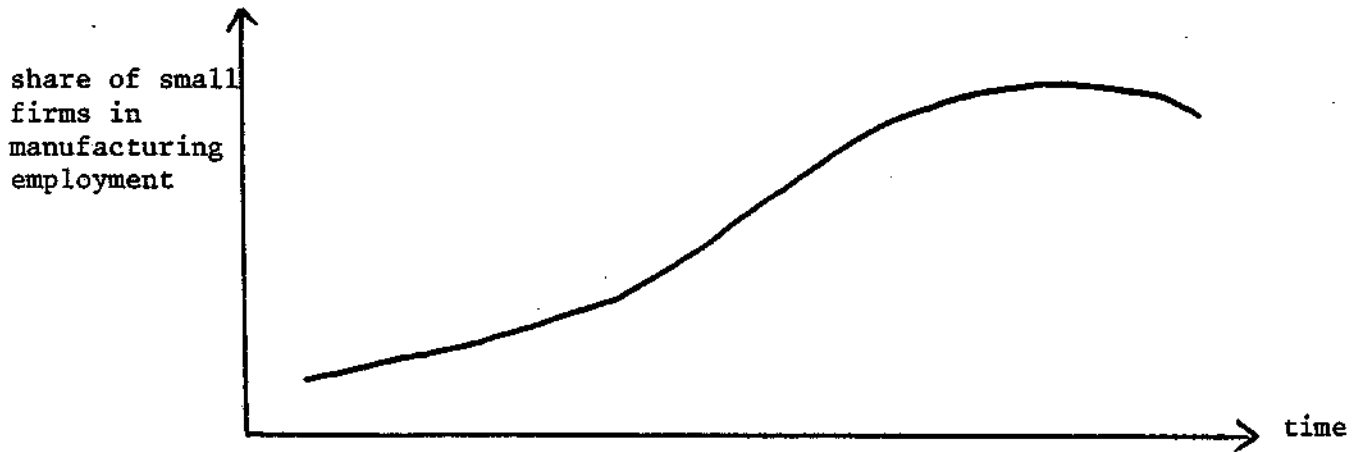
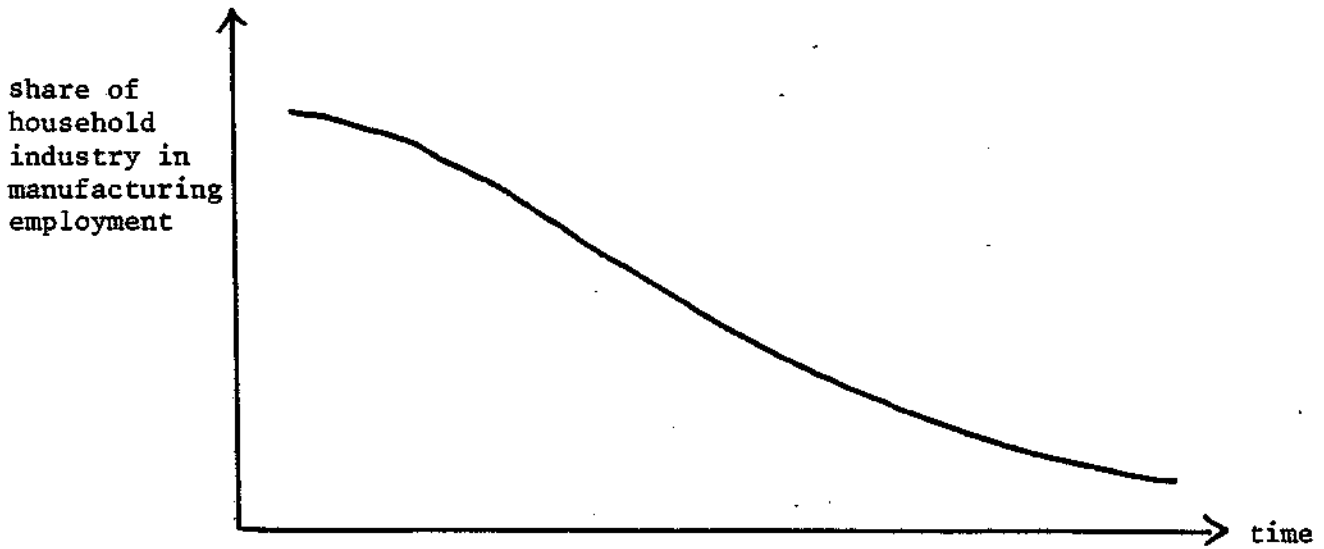


Fig. 1. Changes in size structure of industry over time

Second, subcontracting may be a reason for small scale industrial activities in rural areas. One of the reasons why subcontracting is profitable for larger firms is that wages in the subcontracting firms are often relatively low.

A third reason for the emergence of small rather than large firms during the industrialization process is related to the mixture of sectors concerned. As incomes rise, it may become profitable to produce speciality goods and various differentiated products for which there are only limited markets.

As an additional reason I mention the fact that in the earlier stages of industrialization, agriculture still is the main economic sector. Thus, processing of agricultural goods will be a relatively important industrial sector. Since agricultural production is dispersed and transport costs of the unprocessed agricultural goods are usually high, agriculture oriented industry will often be dispersed and carried out on a small scale.

As an illustration of the role of small firms in developing countries we give the following data for Indonesia (around 1980). The share of industry (excluding the oil sector) in GDP is 9 % whereas its share in employment is 12 %. These figures show that Indonesia did not yet proceed far on its industrialization process. In most other Asian countries, these percentages are much higher (McCawley, 1981). Agriculture is still the dominant sector in Indonesia with a share of 26 % in GDP and 58 % in employment.

Indonesian data on the size distribution of firms are relatively scarce, since national data on household and small scale firms are not collected very regularly. For 1979 some key figures are represented in Table 1. The table shows tremendous differences in labour productivity among the size

size of industry	number of workers	share in value added (%)	share in employment (%)
large & medium	≥ 20	77.6	19.4
small	5-19	8.8	18.4
household	1- 4	13.6	62.2

Table 1. Size distribution of industrial firms in Indonesia (1979).

Source: BPS (1983) (processed).

groups. The share of large and medium sized firms in value added is 4 times as large as the share in employment. A main reason why the productivity in household and small industry is so low is that work is mainly done by unpaid family workers on a part-time basis, many workers having multiple jobs. Besides, seasonal variations may be large in these firms. Consequently, if labour productivity would be computed in terms of value added per manday, the differences between large and small scale industry would be smaller, although even then quite pronounced differences remain (cf. Poot, 1981).

The conclusion is that the main part of Indonesian industrial employment is in small scale and household industry where productivity is low. On the basis of these figures one might wonder whether these firms can really contribute in a positive way to economic development. This will be the main topic of this paper.

In Table 2 some data are given on the changes in the composition of the industrial sector according to size before 1979. Although one must be aware that the quality of these data is to some extent questionable (there are indications that the employment share of household industry is overestimated for 1974/5), it is interesting to note that the pattern displayed in



size of industry	share in industrial employment	
	1974/5	1979
large & medium	13.5	19.4
small	7.0	18.4
household	79.5	62.2

Table 2. Changes in the size distribution of Indonesian industry.

Source: BPS (1983) (processed)

displayed in Table 2 is reasonably in agreement with the general trends shown in Figure 1. Indonesia experiences a decline in the share of household industry, and an increase in the share of small, medium and large firms, where especially the employment share of small firms is growing very fast.

In the following sections an investigation will be made of the role of household and small scale <sup>1)</sup> firms in the industrialization process of developing countries, especially in Indonesia. We will focus on rural industry since it is here that the large bulk of small scale and household industry is found (see Poot, 1981). In section 2 the place of industry in the rural economy will be analyzed. In section 3 a more detailed discussion of various subsectors in rural industry will be given, whereas in section 4 the equity aspects of rural industry will be considered. Policy conclusions will be drawn in the final section.

## 2. Industry and the Rural Economy

In most developing countries rural industry is predominantly household or small scale industry. Some notable exceptions may exist such as larger

scale agricultural processing activities (e.g. mills, sugar) or large labour intensive firms attracted to low wage regions, usually located near main roads going through the rural area. In general, it may be safely said, however, that large scale industry has a strong urban bias (see Lipton, 1977).

Hymer and Resnick (1969) have addressed the role of nonagricultural activities in general and industry in particular in rural areas. Two sectors are distinguished in the rural economy: agricultural and nonagricultural activities. Agricultural goods are exported to urban areas; nonagricultural goods are assumed to be nontradeable. Manufactured goods are imported from urban areas. An implication of the model of Hymer and Resnick is that as productivity in agriculture increases or the transport system improves, the rural economy can gain by increasing specialization: towards agricultural and at the expense of nonagricultural activities, industry being one of them. Thus, industry would become predominantly an urban activity, most probably large scale.

The Hymer and Resnick model can be criticized for various reasons. First, no attention is paid to activities directly linked to agriculture such as processing agricultural products, production and repair of agricultural tools, etc. It is probable that an important part of these activities will be located in rural areas given the high transport costs involved. In the context of broadly based agricultural growth, this sector has a favourable perspective (see Johnston and Kilby, 1975).

Second, the assumption that rural industrial goods cannot be traded to cities because urban products are superior, does not always hold true. The quality of low wage industrial products in rural areas is not necessarily worse than those produced in urban areas. Besides, the urban poor may for a long time remain users of cheap low quality goods. Further, one must take into account the possibility of subcontracting, already mentioned in section 1.

Third, agricultural development would create demand for consumer goods, part of which can be provided most efficiently by rural industry, such as industrial services (repair) and various kinds of construction materials.

Fourth, Hymer and Resnick assume that in rural areas there is a considerable trade-off between the production of agricultural and non-agricultural

goods because of limited labour supply. Thus, they do not regard as probable that in the off-crop season the opportunity costs would be near to zero. However, in countries with high agricultural density such as Indonesia, there is not much to do in agriculture during the dry season, so that work in rural industry during this period does not really hurt agricultural production. These workers may be willing to accept non-agricultural work in the off-crop season even if its return would be extremely low, giving rise to multiple jobs (see Rietveld, 1985). This surplus on the labour market is increased every year by the continuing population growth in most rural areas in developing countries, although one must be aware that (circular) migration may be a way-out. Thus, (circular) migration and rural industrial work may be close substitutes for many rural workers.

We conclude that several objections can be raised against the Hymer and Resnick model. The consequences of agricultural transformation and improved transportation on rural industry will vary considerably per type of industry. Specialization tendencies leading to a decline of rural industry as described by Hymer and Resnick may be more than offset by the countervailing factors mentioned above.

Systematic research on the influence of agricultural transformation and transport development on rural small scale industry is scarce for Indonesia. Yet, it is clear that both factors have changed considerably in Indonesia during the last two decades. For example, the rise in agricultural production has been on average 4 % per annum during this period so that Indonesia could become a net exporter of rice. Also the transportation network has undergone large improvements and extensions. Road length, number of cars and number of motorcycles all have grown with average yearly rates of more than 10 %. What have been the effects on rural industry?

In this section some results will be presented based on village level data. Two qualifications must be made, however. First, time series data are not available for longer periods at the village level so that use must be made of cross-section data. Second, the data only allow one to study non-agricultural activities as a whole, rural industry being one of them.

As a theoretical background for the analysis the economic base approach

is used: agriculture is treated as a basic sector; the incomes generated in this sector lead to effective demand for non-agricultural goods and services. In addition to demand, supply conditions play a role. The supply side will be represented by agricultural density since a high density means that many workers are pushed out of agriculture, implying an extensive labour supply for non-agricultural activities. Further, a land distribution index is added to investigate the influence of distributional aspects in the village on non-agricultural activities. Finally, non-local conditions are taken into account by an accessibility variable: distance to the nearest large city.

The data (observed in 1981/2) relate to a set of 14 villages, mainly located on the densely populated island of Java. The precise definitions of the variables read as follows (for more details, see Rietveld, 1986b):

Y: non-agricultural income per household (in Rp. 1000 per year per household)

X<sub>1</sub>: agricultural income per household (in Rp. 1000 per year per household). The distribution between agricultural and non-agricultural incomes was on average about 50:50, which means that non-agricultural activities are much more important for rural regions than is sometimes thought.

X<sub>2</sub>: agricultural density (persons per ha). A correction has been made for the intensity of labour use for various types of land. The average agricultural density in the sample is 12.6 persons per ha which reflects the extremely high population density in Java.

X<sub>3</sub>: Gini index of land ownership. The average value is .52, which is considerably lower than in countries characterized by landlordism.

X<sub>4</sub>: distance to nearest large city (in km). The average distance is 43 km, which reflects that Java has a rather well developed system of cities.

To come to know about the contribution of each of the independent variables with respect to Y, a multiple regression has been carried out. In addition to a linear specification also a loglinear form is estimated to be able to interpret the coefficients in terms of elasticities (see Table 3). The t-values obtained indicate that the estimated coefficients for X<sub>1</sub> to X<sub>3</sub> are significant at the level of 5 %. The coefficient for X<sub>4</sub> is only

significant at the 20 % level. It is agricultural income and agricultural density which are the most important independent variables (as can be seen from the t-values). The influence of land distribution and distance is (somewhat) smaller.

	agric.inc. per househ.	agric. density	gini index landowner- ship	distance to city	constant	R <sup>2</sup>
	X <sub>1</sub>	X <sub>2</sub>	X <sub>2</sub>	X <sub>4</sub>		
Linear	.811 (4.54)	15.8 (5.76)	-327 (2.41)	-.691 (-.99)	75.1	.891
log- linear	.520 (2.62)	.495 (3.09)	-.721 (-2.40)	-.152 (-1.04)	1.557	.743

Table 3. Results of multiple regression on non-agricultural income per household (t-values between parentheses).

The regression coefficient obtained for X<sub>1</sub> indicates that agricultural income has very substantial effects on non-agricultural incomes. One would expect a lower value than .811, however, since leakages in the village economy must be large due to its small scale, so that considerable part of incomes generated in agriculture will be spent outside the village. One must be aware, however, that agricultural incomes do not only play a role via the demand side. Indirectly, there will also be effects via the supply side. For example, agricultural products may be used as inputs for processing activities. In addition, incomes obtained in agriculture are not seldomly used for investments in non-agricultural activities. For example, in rural Java, many succesful farmers invest in minibuses for public transport. The conclusion is that the level of agricultural income plays a main role in determining the possibilities of expanding non-agricultural activities in a village.

The elasticity of non-agricultural income with respect to agricultural density is rather high (.495). It suggests that the opportunities for those being pushed out of agriculture (given the high density) to switch to non-agricultural activities is considerable. One must be aware that there may be a cause and consequence problem here. On the one hand, non-agricultural activities depend on agricultural density via the process of labour being pushed out of agriculture. On the other hand, a high level of non-agricultural incomes may allow for a strong population growth which in turn leads to a high agricultural density. With the given data set it is not possible to estimate a more complete model to take this interdependence into account. Therefore, one must not draw overly optimistic conclusions on the absorption capacity of non-agricultural sectors. The general impression is namely that market satiation is an important problem for many non-agricultural activities.

For land distribution the conclusion reads that the more equal the distribution, the higher the non-agricultural income per household. This is in agreement with conjectures in the literature (see e.g. Weijland, 1984). Spending patterns of big farmers are unfavourable for local activities since their consumption is usually more oriented towards urban products compared with small farmers.

The last explanatory variable is distance to the nearest large city. Non-agricultural incomes in villages do experience a number of influences from cities, the strength of which depending on distance. Some of the influences are negative (e.g. competition by urban products), others are positive (e.g. possibility of commuting). As explained in Rietveld (1984), the balance of the two influences may be expected to be positive. Thus, non-agricultural income near cities will be higher than further away from cities. Indeed, a negative sign is obtained for  $X_4$ , although its level of significance is lower than for the other variables.

One would prefer the use of travel-time data in  $X_4$ , but these data are not available. Thus, although  $X_4$  is only a rather poor indicator of accessibility of villages, a result is obtained which makes sense: the lower the accessibility of a village, the lower non-agricultural incomes. In a dynamic sense, the result would mean that non-agricultural incomes in villages benefit from improvements in accessibility, as took place in

Indonesia during the 1970's.

We draw the conclusion that non-agricultural incomes depend strongly on the agricultural conditions in a village. Demand generated by agricultural income plays a main role; also agricultural density and land distribution are important. Finally, accessibility to a main city appears to play a role. The important function of demand deserves attention; it is often overlooked in analyses and policies with respect to non-agricultural activities. E.g. most government policies stimulating non-agricultural activities are directed to the supply side (credit, skill improvement).

The above analysis shows the overall effects of agricultural and locational conditions on rural non-agricultural incomes. For the effects on rural industry, a more detailed analysis is necessary. One would have to compare the relative attractiveness and availability of industrial work with work in trade, services (including the government sector) and work in the city, etc. Given the rather poor performance of household industry which is the dominating type in rural areas (see Table 2), one gains the impression that in rural areas, industry is not the most vital one in the group of non-agricultural activities. In the next section, a more detailed discussion will be given of rural industry.

### 3. Subsectors in Rural Industry

Following Weijland (1986), three potential locational advantages for rural industry can be mentioned: market orientation, resource availability and cheap labour. These factors determine the competitiveness of rural small scale industry against urban large scale industry. Note that the three advantages are not necessarily mutually exclusive.

First, rural industry has an advantage of market orientation, if it is oriented towards the rural market and transport costs from urban producers are prohibitive, which is for example the case with non-tradeable goods. Competition by urban industry will not be severe in this case. The implied disadvantage of this type of industry is of course that its market is limited: penetration of urban markets is very difficult. Thus, the size of

the market depends strongly on the incomes from agriculture. Examples of these non-tradeable goods and services are: repair activities, tailoring, furniture making and to some extent construction activities (see Weijland, 1986).

Second, rural industry has an advantage in resource availability if its main inputs come from rural areas. Agriculture-related industries are an important subgroup: rice milling, dairy production, tobacco drying, sugar refinery, etc. Other examples in this group are bamboo weaving, production of charcoal, mining (of sand and stones) and producing construction materials like bricks and tiles. Since in most cases the distribution of the resources is dispersed and the transport costs of the goods concerned are high, a dispersed pattern of small-scale production activities will usually arise.

The third kind of advantage occurs with labour-intensive firms using cheap local labour. Many of these firms produce light consumer goods. Examples are handi-crafts such as weaving, knitting, embroidering and the production of light household equipment (see Weijland, 1986). It is especially in this type of industries that subcontracting takes place.

What will be the effects of increasing transportation possibilities on these industries? Will small scale rural industry be able to stand the competition of urban large scale industry? For strictly non-tradeable goods, no great problems will arise, although increased accessibility may lead to spatial shifts in the provision of services towards higher order rural centres. The situation is of course much worse with locally oriented firms formerly protected by isolation which find that their isolation is removed by improvements in the transportsystem so that urban located firms penetrate into their markets.



Resource based rural industry, and also low wage industry will usually benefit from increased transportation possibilities since distribution to urban markets becomes easier. If economies of scale play a role, improved transportation may give rise to a growth of the average scale of operations.

In addition to these direct effects, also indirect effects have to be taken into account. Improved transport facilities imply that work in the city becomes a feasible alternative of commuting or circular migration. Since urban wages are usually much higher than rural wages, the effect would be that many marginal activities in rural industry would come to a silent end. This effect will also occur if improved accessibility leads to higher returns in agriculture giving rise to a specialisation of the rural economy towards agriculture. This is essentially the mechanism analyzed by Hymer and Resnick (1969) which we already discussed in section 2.

An important shift in the urban-rural industrial balance may occur because of capital intensive labour saving technological progress. The investments involved usually take place in urban areas (see Rietveld, 1986a). The reduction of urban production costs may strongly influence rural low-wage industry. A similar situation arises when investment subsidies become part of government industrial policy. Such subsidies are typically biased towards urban large scale industry. The competition may assume the form of large scale industry producing approximately the same product formerly produced by small scale industry. An example is the textiles sector where in many countries handlooms have almost completely been replaced by mechanized weaving mills. In other cases, the same product is made by large and small scale industry, but different materials are used. This happens for example on the furniture industry where wooden products made in the small scale industry faces competition of large scale industry using metal. Similarly, many kinds of household utensils formerly made of wood, clay or traditional metals such as copper have been replaced by plastic or aluminium products. In other sectors (e.g. food and beverages) the modern products may be rather different from the traditional ones. A well known example are bottled drinks produced by big companies replacing a large variety of locally produced drinks.

Of course, technological progress may also take place in sectors which only produce on a large scale basis (e.g. radios, television sets, motorcycles, motorcars, etc.). In this case there is often no small scale industry directly hurt, but of course, the share of large scale activities in the industry as a whole increases. On the other hand, one must not forget that such products often entail various small scale activities in the sphere of the production of parts and industrial services.

Two main subsectors stand out in Indonesian household industry: bamboo weaving and making coconut sugar. According to official data these two subsectors accounted for no less than half of total employment in household industry (McCawley, 1981). Both subsectors are characterized by very low returns to labour, even according the already very modest standards of household industry. Therefore there is not much reason to regret the declining share of this type of industry in the Indonesian economy. Regions with a high share of household industry in total employment are among the poorest and most densely populated ones in Indonesia (cf. Poot, 1981). In such regions (e.g., the provinces of Central Java and Yogyakarta) employment in rural industry is strongly stimulated by a large excess supply of labour in agriculture (cf. variable  $X_2$  in section 2), giving rise to an overcrowding in rural industry. As more remunerative jobs become available in other sectors one may expect a decline in rural industrial employment in the least remunerative subsectors.

From the above results one might easily get the impression that household industry is a sign of poverty, which is bound to disappear when agricultural development becomes a success. In section 2 we have already indicated that this is not a right impression for various types of subsectors, however. Certainly, rural household industry may become an insignificant phenomenon, but only in the very long run. In the mean time, household industry will continue to play an important role in rural industry, not only as a last resort for the poor, but also in a much more positive way.

A fact that is often overlooked when dealing with the fast growth of small scale industry (compared with the stagnating household industry) is that an important part of the growth of small-scale industry must stem from growing household industries crossing the cutting point of 5 workers per

firm. Thus, household industry is loosing in two directions. At the lower side of the spectrum, marginal activities may simply disappear when other better paid work becomes available. At the other side of the spectrum, the more succesfull firms may soon enter the category of small scale industry (the number of firms going the reverse way is probably much smaller).

Thus, household industry has at least two important, but entirely different functions. On the one hand it provides the poor with a source of income, albeit lowly paid. On the other hand, it is the starting point of many firms which prove to become successfull small and medium scale firms at a later stage.

A similar pattern can be expected to exist for the group of large firms. Part of their growth is owing to the successfull growth of medium sized firms crossing the cutting point between "medium" and "large".

#### 4. Equity and Rural Small Industry

In Figure 2 some important features of rural non-agricultural activities are shown in relationship with equity. The figure is based on Indonesian village data (for more details see Rietveld, 1986b). Figure 2a shows that as the land owned by households increases, the share of non-agricultural incomes in total household income decreases. This can easily be understood given the clear positive relationship between agricultural income and land owned. Figure 2b may be more surprising at first sight; a U-shaped relationship is found between land owned and non-agricultural income. For the group of small farmers a negative relationship exists between land owned and non-agricultural income. Such a negative relationship can be explained by a micro-economic analysis in which labour supply for both agricultural and non-agricultural work is taken into account (see Rietveld, 1985). The more the time spent in agriculture on the own land, the less the urgency to do non-agricultural work. Several reasons can be mentioned why this negative relationship only holds true for small farmers. Big farmers usually have larger households than average, which means that the potential number of workers outside agriculture is larger. Further, big farmers may decide to invest their agricultural profits in non-agricultural activities. Also

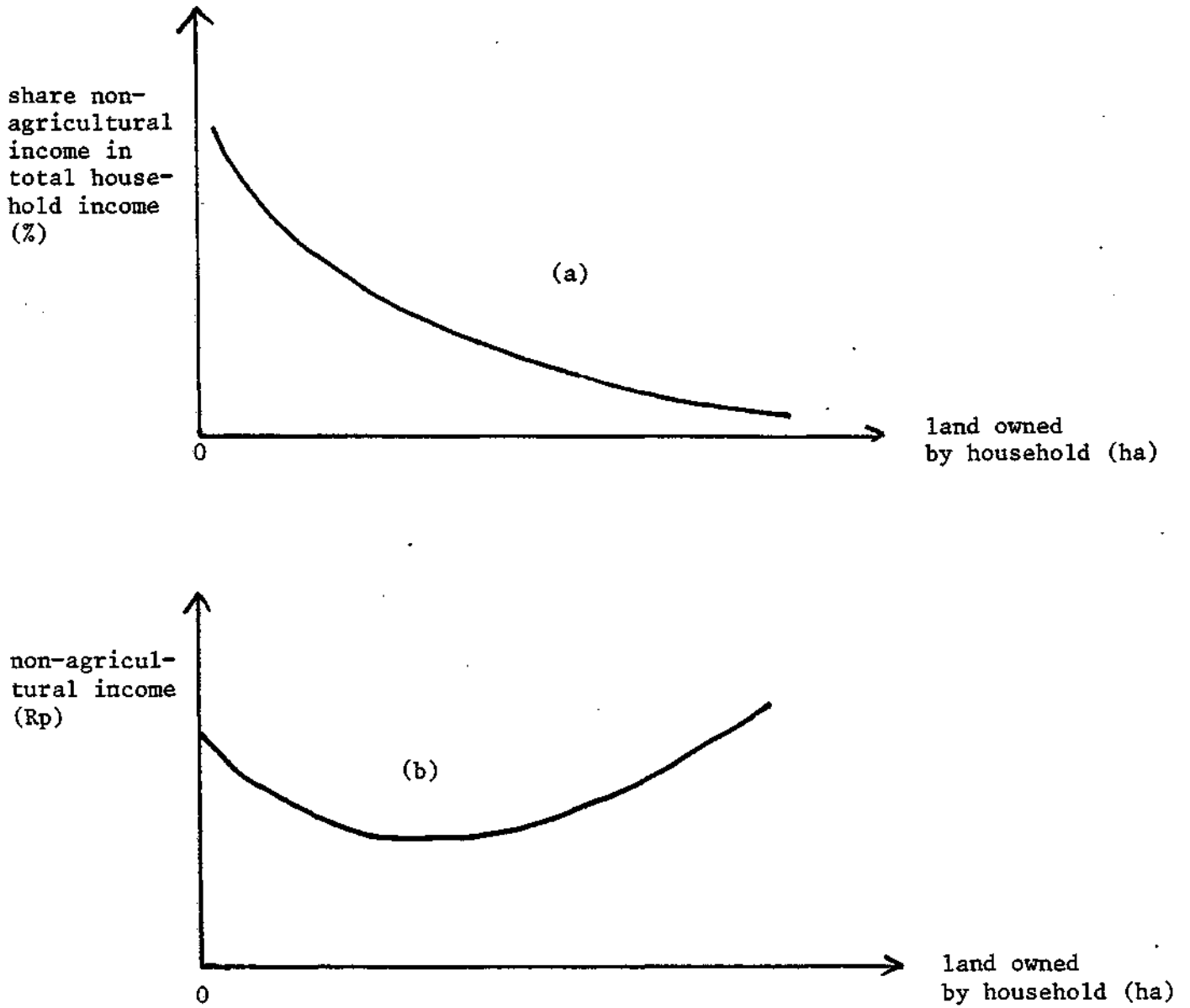


Fig. 2. Landownership and involvement in non-agricultural activities.

educational attainment will on average be higher in the households of big farmers, so that well paid non-agricultural jobs can be obtained more easily. This implies among others that it may become more profitable for big farmers to reduce the involvement in agricultural work as much as possible by using agricultural labourers and tenants, so that the time available for non-agricultural work is increased.

Do non-agricultural activities contribute to equity in the rural economy? The main source of rural inequality in developing countries is usually the inequality in the ownership of land  $I(\ell)$ . Several mechanisms exist which make that that inequality in agricultural income  $I(Y_a)$  is smaller than  $I(\ell)$ . For example, by share-cropping and agricultural labour the value added created on land owned by landlords partly flows to low income households. Also, the value added per ha in small farms is often higher than in large farms. Thus we may conclude:  $I(Y_a) < I(\ell)$ . The second step is from agricultural income to total income. Given the U-shaped relationship between non-agricultural income and land owned, a considerable mitigation of income inequality occurs when total income inequality  $I(Y_t)$  is compared with agricultural income inequality:  $I(Y_t) < I(Y_a)$ . Thus, in rural regions, total income inequality  $I(Y_t)$  will usually be much lower than inequality in the distribution of land  $I(\ell)$ , a major role in this inequality reduction being played by non-agricultural incomes.

## 5. Policy Conclusions

Although most developing countries have formulated policies to stimulate small scale enterprise, it is remarkable that in general the weight given to small scale industry in national development plans has been very limited. One of the backgrounds seems to be the high priority given to the objective of economic growth. Given the low amount of value added per worker in small scale industry, large scale industry becomes the natural point of gravity if priority is given to production growth. Of course, if priority would be given to employment creation, small scale industry would be the evident point of entry of government policy (cf. McCawley, 1981). On the other hand, Anderson (1982) is right by pointing out that employment

creation per se is not the most urgent objective, since what the rural poor usually are lacking is not so much work as such, but work which is sufficiently yielding. Thus, a more appropriate objective would be the creation of work with reasonable returns for persons having no access to well paid jobs. Especially the creation of jobs in the upper spectrum of small scale rural industry would fit this objective.

Before discussing various policy measures specifically addressed to rural small scale industry, it is important to note that indirect policies may have a favourable effect on this industry which is much more decisive than the direct policies.

First, broadly based agricultural development will be of high importance for rural small scale industry. As shown in section 2, such a development will especially stimulate agriculture related industries, but also the rise of agricultural incomes in general will stimulate rural industry via the demand side. At the supply side, profit made in agriculture may be invested in industry. Even though a considerable part of this stimulus may leak towards urban areas (see e.g. Bell and Hazell, 1980), the ultimate effect on rural industry will usually still be strong.

Second, a close inspection of general industrialization policies reveals that these often have both an urban bias and a scale bias (cf. Lipton, 1977, Anderson, 1982, and Richardson and Townroe, 1986). In many countries, general industrialization policies have been in favour of large capital intensive industries. For example import substitution policies have the effect that large scale industry is protected against foreign competition, but often also against domestic small scale industry. Conditions to obtain credit are much more favourable for large firms than for small firms. Overinvestment in capital intensive industry means underinvestment in agriculture, thus reducing the speed of agricultural development, exactly the area where small scale industry has the strongest interests. It is notable that even with this scale bias in favour of large industry, it is small scale industry which has recorded the highest industrial growth rates in most countries during the earlier phases of industrialization (see Fig. 1). Without such a bias the position of small scale industry would even have been more prominent.

The conclusion may be that agricultural development and a scale-neutral industrialization policy would favour rural small scale industry. Then the question arises what else can governments do for rural small scale industry? There are essentially three approaches: 1. non-policy, 2. protection and 3. stimulation.

Non-policy is obviously a modest approach. Yet it may be appropriate for several subsectors in rural industry, especially in the lower spectrum. The problem with stimulation programmes in many countries is that - despite good intentions - they may give rise to an additional burden for small scale and household industry. Registration, bureaucratic procedures, corruption, licensing, etc. may become a heavy burden for rural entrepreneurs doing marginal activities. It is not without reason that many of these entrepreneurs try to keep away from government as much as possible.

Protection of rural small scale industry is another alternative. This will usually occur in the form of constraints on urban large scale industry or on imports. An example is a constraint on large beer factories so that rural household industry can remain on the market. Other examples relate to the production of bottled drinks, cigarettes, textiles and cement.

How must protection policies be evaluated? Obviously, they are favourable for rural producers, but not for the consumers since price could be lower. The money which could be saved by consumers, would partly be used for other expenditures, including rural produced industrial goods. Thus, a negative side-effect of protection for rural industry can be expected although the positive primary effect is most probably much larger.

Protection measures come near to the concept of selective spatial closure (Stöhr and Tödtling, 1977). The integration of the rural economy in the national economy is not taken as a self-evident goal or trend. Diffusion of new technology is controlled in such a way that it does not hurt rural industry. Indeed, it must be admitted that (especially in the short run) technological change may have strongly differentiated effects on rural and urban areas, urban areas usually experiencing net benefits and rural areas experiencing net disadvantages (cf. Nijkamp and Rietveld, 1986). However, protection of rural industry will negatively affect the skills of the labour force in rural areas so that its prospects for future industrialization may become worse. In addition, the various arguments of Little et al.

(1970) against import substitution policies must be taken into account.

Less rigid forms of protection may be more easily defended, however, for example in the form of a negotiated stepwise introduction of a new technology to prevent all too sudden disturbances of the rural economy. Even if government accepts the introduction of large scale plants there are still ways to mitigate the pains for the rural economy. An effort could be made to locate such plants in suitable rural areas so that rural areas also experience some of the employment benefits of the new plants.

A survey of stimulation programmes for rural small scale industry in various developing countries is given by Chuta and Sethuraman (1984). It is not easy to develop effective stimulation programmes. The number of small scale firms is so large that it is not easy to approach a sufficient number. Also they tend to be widely dispersed and their accessibility is usually bad. The possibilities for effective programmes are better for firms which are concentrated in space. Poot (1981) gives several examples of branches where a striking spatial concentration of firms in particular villages can be observed.

From a spatial viewpoint, the marketing opportunities for rural industry can be improved by the emergence of small and medium sized cities in rural areas. Also at the input side, rural industry can benefit from agglomeration economies generated by such cities. Thus, policies aiming at reinforcing the lower segment of the central place hierarchy may have beneficial effects on rural industry and rural development in general (cf. Johnson, 1970 and Rondinelli, 1983).

Stimulation programmes usually focus on the supply side in the form of training, provision of credit and inputs. An important problem is that many branches in rural industry are so crowded so that stimulation of certain firms may endanger the existence of other firms, not served by the programme. This problem indicates how difficult it is to evaluate the effectiveness of stimulation programmes: evaluations must not be confined to the firms covered by the programme, but also other firms must be taken into account. Their disappearance may be a consequence of the 'success' of the firms involved in the programme.

Clearly, supply oriented stimulation policies are most effective in



branches not characterized by chronic excess supply. The supply of a scarce input may for example be ensured via the creation of co-operatives. Training programmes are another example. Technical training may lead to the introduction of new products so that broader markets can be served (Sudarno, 1986) and to higher quality so that the competitiveness of small industry is improved. Also, training in the sphere of accounting and organization design may help entrepreneurs of rapidly expanding firms to prevent the occurrence of large inefficiencies (Anderson, 1982). Given the often very high interest rates people have to pay to money lenders in rural areas, also credit programmes may be good tools to stimulate rural industry (Poot, 1981 and Anderson, 1982; see also OECD, 1986) although it must be mentioned that such credit programmes are often plagued by low repayment rates.

Demand oriented policies are not easy to implement (Poot, 1981). For example, the creation of co-operatives to strengthen the marketing of industrial goods produced by rural industry often appears ineffective. This is a pity since such co-operatives could also play an important role in the exports of certain products of rural - small - scale industry. Other marketing possibilities for small scale rural industry exist in the direction of large firms, e.g. in the form of subcontracting. The most direct way of demand stimulation by the government consists of purchases by the government itself of products from small scale industry.

The conclusion is that one must not be overly optimistic about the effectiveness of specific stimulation policies addressed to rural small scale industry. General policies aiming at agricultural development and scale-neutral industrialization will most probably be more effective.

### Footnote

1) The reader will find that in this paper the term small scale industry sometimes relates to all firms with less than 20 employees, whereas in other cases household industry is explicitly excluded. It will be clear from the context which of the two meanings is at stake. Further, data limitations usually do not allow one to separate small scale rural industry from rural industry in general. In Indonesia more than 90 % of industrial employment in rural areas is in the small scale category. In some cases, data will be used on non-agricultural activities in general, rural industry being one of them, since more disaggregated data are not available.

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