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Trade Networks for Flexible Rural Industry

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Faculteit der Economische Wetenschappen en Econometrie

SERIE RESEARCH MEMORANDA

Trade Networks for Flexible Rural Industry

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amsterdam

TRADE NETWORKS FOR FLEXIBLE RURAL INDUSTRY

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1. RURAL INDUSTRY AND THE QUEST FOR INDUSTRIAL FLEXIBILITY

According to recent studies on industrial organization, modern industry increasingly has to face changes in demand and technology which erode the economies of scale derived from standardization and mass production. Consequently, large enterprises in the more dynamic sectors are suffering from rigidities stemming from their established indivisibilities incorporated in their large fixed assets and ossified, one-dimensional organizations. On the other side, networks of smaller enterprises are starting up and finishing production much faster than their larger competitors [Best 1990]. Thus, after a century of industrial concentration and large-scale monopolization, the pendulum is swinging back towards fragmentation and competition.

Development literature duly has reported progress in small industry during the eighties [Anderson 1982; UNDP et al. 1988; Levitsky 1989; Haggblade et al. 1989]. All these studies report increasing profitable employment in urban small industry, but they have little faith in rural small-scale industry, which is badly documented, but supposedly stagnating due to lack of local demand and limited access to finance and technology. One may distinguish three categories of small-scale enterprises [Farbman and Lessik 1989]: (i) home-based, intermittent survival-oriented activities of individuals or a few relatives, (ii) micro enterprises with "roughly 10 or fewer full-time workers [ibidem: 109], and (iii) small-scale enterprises with ten to fifty workers. This paper analyses 'Rural Cottage Industry' (RCI hereafter), the smallest and poorest category. It intends to put this marginal category in a new light, connecting its future with the new trends in modern industrial organization. It stresses RCI's function in a flexible industrial organization, and the role middlemen play to enhance this function. The notion that RCI is increasingly connected to global industrial development struck the author at the on-site evaluation of rural industry projects in Asia. As the project data were classified, evidence for the argument had to be culled from official sources, and they were found in the census and survey statistics of rural population and cottage industry in the Indonesian provinces [BPS 1987; 1989A; 1989B; 1989C; 1989E; World Bank 1990];

¹ The paper has benefitted from the contributions of M.Klapwijk, P.Knorringa and A.Leliveld.

The official survey data confirmed that Indonesia's RCI includes the world's most deprived manufacturing workers, with low literacy rates and very low incomes². They are working in villages, often far away from the nearest market place, and hardly ever meet any of the consumers of the products they sell to their middlemen. Some fifty years ago, when development studies still emphasized modern-traditional dualism in the style of Lewis [1954], it would have been absurd to state that such primitive enterprises could be incorporated in modern, large, complex, international production networks. However, since the advent of theories on the Informal Sector and 'Petty Commodity Production' [Moser 1979], incorporation has become a focus of analysis, albeit that this new functional approach of traditional small enterprise has been fixed on exploitive aspects. This paper then proceeds to study the more favourable side of incorporation, contending that many poor producers might have gained by the unequal alliance with the modern sector, and even have been aided by the traditionally despised middlemen.

As the paper intends to show how RCI fits in with flexible industry, it first has to identify the special characteristics that make it a useful partner in a flexible organization.

In general, flexibility can be achieved in various ways through internal and external changes:³

1. Technological process innovation: introduction of (parts of) machinery and equipment that facilitate flexible production methods. Examples are electronic programming and steering devices.
2. Increasing the variety of skills a given labour power can master (functional flexibility of labour)
3. Internal re-organization: e.g. creating divisions for products or processes with cheaper or numerically more flexible labour. So, in pursuit of flexibility, large enterprises may disintegrate into a multiple of interlinked units or functionally separated divisions which perform better as they operate with shorter runs of output and less cost of capital and labour.
4. Tapping labour power reserves outside the firm (numerical flexibility of labour)
5. External organization in networks of co-operating specialized firms yielding qualitatively and/or quantitatively more flexible (and cheaper) flows of output.
6. Formation of industrial districts which facilitate innovations, networking and tapping of reserves through increasing communication stemming from proximity.

² In Indonesia Cottage Industry is defined as family enterprises with less than 5 workers

³ Most of the given examples are taken from Asheim [1992: 47-9]

Although RCI can contribute little to the upper three processes as these require large enterprises and sophisticated management, it is increasingly involved in the lower three of the list, (i) yielding a labour reserve, (ii) becoming part of industrial trade networks, and (iii) forming special types of rural industrial districts ('clusters'). The following section describes these three processes and argues that in Indonesia small traders can play a central role as initiating and stimulating middlemen. Next, the paper investigates the preconditions for the processes of flexible incorporation in Indonesia, followed by an assessment of the effects of middlemen's activities on employment and earnings in RCI.

2. FLEXIBLE INCORPORATION

2.1 Flexible Rural Labour Power and Production Regulations

Densely populated rural areas in Third World countries are known for their flexible labour reserves. This can be an important economic factor, especially if one considers that rural labour may not be only flexible but also very cheap. Rural areas usually are defined as dominated by agricultural production conditions. Rural villages have many non-farm RCI activities linked to the agricultural production cycle, and their production patterns are often complementary to the seasonally and daily varying activities in farming, forestry and fishing [*Haggblade et al., 1989: 1177*]. For these micro-industries not only labour but also equipment, housing and land can be shared with agrarian activities. This flexibility in resource allocation ensures optimal use, reflected by low cost of working power and capital. So agricultural seasonality favours the supply of cheap industrial labour, and indeed, since time immemorial, rural areas have served as the cheapest sources of unskilled labour for manufacturing [*Oshima 1983*]. Rural workers have been known to accept below-subsistence earnings in adverse times or during the slack periods of their primary employment, so they could be hired by subcontracting middlemen to do piecework in their cottages for large urban enterprises and trade houses. This was common practice in the early stages of industrialization in Europe as well as in Asia, but while the system expired in Europe, it remained operational in Asia. The oriental carpet industry is a well-known example of such a putting-out system. Similar practices have been in use in Indonesia since pre-colonial times [*Alexander and Alexander 1991:84-88*], and there is evidence that they are reviving in stead of fading away with the tide of modern industrial growth [*White, 1992*]. Meanwhile, the logic of subcontracting and putting-out systems has remained the same, and the goods traded by these systems have kept the same characteristics. They are typically light consumer goods or intermediary goods, such as finished garments and materials for garments (woven, embroidered, dyed or knitted), footwear, sports articles, household utensils, small metal tools, and small products of leather, feather and wood.

Apart from flexible cheap labour and accessible raw materials, the countryside offers other

attractions for manufacturing enterprises. Relocation in sparsely populated areas usually guarantees more flexible or even non-existent rules and regulations concerning labour conditions, land use and environmental damage. Thus the introduction of formal regulations on minimum age, working time and working conditions have led to ruralization and fragmentation of many industries. The tanning industry presents an example of activities which have been banned out of urban areas in most countries.

Empirical studies on a world-wide scale show that high employment rates in rural industry are often attained by high participation of women and children. Poor women tend to participate with their children in the most irregular and least gainful activities [*Haggblade et al. 1989: 1177, 1179*]. As they volunteer to work for very long hours at irregular intervals whenever money has to be paid to repair sickness or some other family crisis, they would constitute the most flexible work force in poverty stricken areas. This hypothesis is corroborated by the official Indonesian cottage industry statistics, which show that female participation in RCI varies from some 30 percent in the richest provinces to 60 percent in the poorest ones (see Table 1, Row 15). Child labour is not recorded for obvious reasons, but even the official records of female labour are dubious, because cultural factors often hinder correct enumeration, so that in some very poor provinces the statistics of female participation are surprisingly low. In such places it is likely that convention dictates that women remain unseen and uncounted.

Having established that poor rural areas are often good suppliers of cheap flexible labour power, one may wonder why modern industry and trade has not tapped this source more consistently. One probable reason is that the very nature of RCI labour power implies that it usually lacks specialized skills and capital. So it can perform only simple tasks and produce simple goods. Simple in this sense means small product size, short production process, low degree of complexity, little precision, and no standardization. Thus far, most studies on RCI have supposed that such simple RCI goods can be sold only in small quantities in local poor markets, and that RCI therefore is bound to decline with growing rural welfare [*Anderson 1982; Haggblade et al. 1989*]. Another reason for ignoring RCI's potential could be that it has yet another serious handicap, namely isolation. Geographic isolation incurs high cost of market incorporation, which include the cost of transport, monitoring, and technical and financial services. These cost tend to rise with distance, dispersion, smallness, and cultural discrepancies, which make the work force in isolated villages inaccessible.

2.2 Trade Networks for Small Villages.

As dispersion and isolation put such high barriers to trade, the size of villages has been found a

crucial factor. Many studies on rural industry therefore distinguish between small villages and larger rural centres. In Haggblade's survey the borderline was drawn at 20,000 inhabitants [Haggblade et al. 1989: 1182], and according to this classification small villages would have only some basic crafts and simple processing activities, while the larger centres have more and increasing RI employment, concentrated in more sophisticated manufacturing activities such as metal working, furniture, textiles and footwear [ibidem:1182-86]. So it would seem that village size is indeed a powerful determinant for rural industry, and this for various reasons. For one, larger centres would have the critical minimum scale of local demand required for full specialization in the manufacturing subsectors. Furthermore, they would have better transport facilities for export-oriented production and could offer the other infrastructural services needed for more advanced manufacturing activities. The Indonesian industrial records, however, do not always corroborate this reasoning, and show that in certain regions RCI has developed in small villages without the support of a local market. This anomaly can be explained when we consider the economic functions of middlemen. Case studies and anthropological surveys report that Indonesia's populous rural regions are covered by various trade networks which link RI with distant markets [e.g. Alexander and Alexander 1990 and 1991; Sandee, this issue]. Such networks are typical for densely populated areas with ancient trade cultures as can be found in many Asian countries, where trade channels often reach RCI in isolated villages, which then receive essential technical information, advances for labour, and provision of materials and equipment through middlemen.

Rural trade networks can be very wide and complex, and stretch far into the countryside, especially when they involve small traders with simple vehicles that can manage bad roads. At the lowest echelons many of these middlemen are in fact 'middlewomen', who are living in the neighbourhood of their clients and therefore are well acquainted, which enhances stable relationships and mutually benefitting transactions [Knorringa and Weijland 1992, Rasmussen 1992:23]. Based on local traditions of trust and mutual dependence between traders, farmers and artisans, rural industries can develop even in small and distant villages [see Sandee, this issue]. According to industrial census and survey data, an increasing part of Indonesia's RCI is in this way connected to wider markets. Only the most isolated industries with prohibitive transaction cost have to be confined to their small local markets. Thus, less than 50 percent of RCI is selling to local markets (Table 1, Row 12), and this percentage is still decreasing. Urban CI, on the other hand, shows the opposite tendency with an average of 75 percent selling in the local market [BPS 1989A, Table 10.2, p. 101]. Urban cottage industry need not be so export-oriented as it has better local alternatives. With a sufficiently wide local market, small urban enterprises obviously prefer to produce non-tradable, personal goods or services that are fitted to local tastes and personal producer-client contacts. Such branches yield more stable and fairer incomes. Rural workers, however, do not have such good market niches, and must be continually on the look-out for the less stable jobs offered by passing

traders or local middlemen.

2.3 Clustering

In addition to establishing relations with trade networks, rural workers in Indonesia since time immemorial have found another remedy for their isolation and corresponding scale and transaction cost problems by clustering. Of the total of 67,979 Indonesian villages [BPS 1989D,3], some 10,000 have been identified as industrial clusters⁴. Especially if their markets are extended beyond the direct environment, small cottage industry tends to flock hamlet-wise in groups of some 10 to 100 more or less individually operating workers and family enterprises, producing mostly for traders, subcontractors or small middlemen. Clustering does not necessarily imply co-operation. In the most primitive clusters where technology is limited to rudimentary equipment, workers may not find any technical reason for collaboration, and so keep operating independently, without sharing labour, housing or equipment. But even in such primitive clusters the external agglomeration economies may be substantial, for the proximity of similar enterprises facilitates information sharing and innovation, and also attracts traders and suppliers of materials and equipment. These agglomeration effects broaden and intensify with the advent of more advanced technology with more indivisibility aspects, giving ample technical reasons and opportunities to collaborate by hiring each other's labour and equipment, subcontracting work from each other and selling each other's products. Thus the more developed clusters may form almost untractable, densely structured organizations with frequent contacts and tight social control. Through co-operative organization, cluster members can obtain capital, raw materials and services that otherwise would remain inaccessible. In this way the indivisibility problems that are conventionally associated with small enterprise can be overcome, and through this 'collective efficiency' RCI can become more viable and competitive [Best 1990: 205-8; Schmitz 1989].

Clustering may lead to specialization of entire villages [Smyth 1990], and it can extend to all kinds of linked activities. Large specialized villages offer considerable transaction cost reductions to the various subcontractors and trading middlemen as the clusters' inhabitants still tend to observe the village norms and values, so that transaction risks and monitoring cost are relatively low. Another advantage is that they offer better choice in product quantity and quality. But specialization can be dangerous as it makes the villagers too vulnerable for market fluctuations, and therefore one often finds that most RCI workers and craftsmen still have some secondary source of income that can safeguard survival [Sandee and Weijland 1989].

3. ENABLING ENVIRONMENT FOR REGIONAL INCORPORATION

In the previous sections we have argued that RCI can be linked to wider industrial systems, and

⁴ Number obtained from Ministry of Industry

that in Indonesia this incorporation process is well on its way. But the international literature on rural industry suggests that outward orientation of rural industry is not so common in Third World countries, and also in Indonesia it does not occur everywhere. The Indonesian archipelago includes thousands of islands with a wide variety of economical, cultural and natural endowments, creating such different entrepreneurial milieus for rural industry that RCI abounds in some provinces while it is almost absent in others. So there are conditions that favour or hamper outward orientation. In the standard literature on small scale industry it has become common practice to distinguish between **demand pull** and **supply push** factors determining RCI development [UNDP *et al.* 1988: xvi-xvii]. Demand pull factors include increasing incomes of existing markets, decreasing relative RCI prices and consequent increasing demand, and geographical extension of markets. So demand factors include phenomena that manifest themselves on various levels, ranging from international to local, such as general macro developments (e.g. growth of national and regional income), and policies that raise the country's export potential (e.g. devaluation), policies that favour labour intensive industry (e.g. higher interest rates and higher prices for machinery), and policies that favour small industry (e.g. non-discriminatory credit policies). Within an unfavourable macro environment RCI cannot compete in wider markets and consequently it will stagnate [Stewart and Ranis 1990]. Like in other countries, the macro context for RCI has improved considerably in Indonesia since the introduction of more liberal trade policies. Unfortunately, this cannot be demonstrated in the empirical part of this paper, as it is limited to cross-section analysis at a single point of time. So the general macro context is given only a modest role, being represented by variations in provincial product. The study is better suited to highlight the effects of various local **demand pull** and **supply push** conditions of RCI, and differences in **entrepreneurial environment**. Local demand pull factors have been given much emphasis in the literature on rural industry. This is consistent with the standard assumption that it is a primarily inward oriented activity, located mostly in the larger rural centres where it serves mainly local rural households and enterprises. RCI's prospects then are related to the development of forward and backward linkages with other rural activities [Ranis 1990: 46-49]. The latter linkages are associated with agricultural prosperity and rural equality [UNDP *et al.* 1988: xvi; Ranis 1990: 47]. But we have argued before that the local markets in the countryside often are too small for the sustenance of RCI, and in that case agricultural prosperity would not have the supporting effect emphasized in the aforementioned studies. To the contrary, it could imply that agriculture and other primary activities would offer better employment opportunities than RCI could, or that the village workers would be drawn to the nearby larger centres to establish larger enterprises or find better jobs [UNDP *et al.* 1988: 18-19]. In that case we are left with **local supply push** and **entrepreneurial milieu** to explain the existence and further outward development of RCI. Local supply push factors would include low agricultural incomes stemming from land fragmentation, low productivity, and high poverty

incidence, which would represent the push factors for non-farm activities. Such activities would be stimulated in a favourable entrepreneurial milieu, implying proximity of large urban market outlets, the existence of trade networks, high rural population density, and adequate rural infrastructure [UNDP *et al.* 1988: 17-18; Rasmussen 1992]. In Indonesia the prevalence of the wet rice system would be another milieu indicator proxying traditional rural organization, which can be associated with social control, stability, and, consequently, low transaction costs.

In an analytical model the above mentioned factors would account for RCI employment intensity, defined as the total of enumerated RCI workers as a percentage of rural economic active population, corrected for the part of total work hours in RCI. As the paper intends to highlight the outward orientation of RCI and the function of middlemen, something more should be said about RCI's marketing practices, the use of middlemen services, and RCI earnings. The argument then runs as follows. It is assumed (and empirically verified) that middlemen connections are the more easily found the more traders are living in the countryside. Moreover, it is verified that, in a traditional Asian environment, middlemen services are needed more by poor women than by poor men. Consequently, easy access to middlemen would raise female participation, but as the rural female workers are found to be more illiterate and poor, they are assumed to purchase less inputs, which would depress their earnings. But it also has been argued that an important middleman function would be to provide for information and inputs. So, on the one hand, middlemen can be assumed to raise RCI employment by drawing poorer labour categories into RCI, which could have a negative effect on RCI productivity, but on the other hand this effect might be compensated by provision of information and inputs.

Aside from these complex interactions, yet another, more traditional economic determinant for RCI productivity and earnings has to be taken into account, namely the alternative earnings in larger scale enterprises and other competing rural activities, such as agriculture. As was mentioned before, prosperous agriculture would pull the marginal workers from RCI towards agriculture, and this exodus would lead to a rise in the productivity of the remaining more viable RCI.

Resuming, we list the afore mentioned quantifiable variables and relationships:

RCI Employment, RCIE

RCI Productivity, RCIP

Female Participation, FEM

Inputs value per worker, INP

Percentage of enterprises using middlemen, MID

RCI Employment determinants (with assumed signs):

Macro demand pull variable: High Gross Regional Product per worker, GDP(+)

Local demand pull variable: High Agricultural product per worker, AGP(+)

Local supply push variables: Low Agricultural product per worker, AGP(-)

Entrepreneurial Milieu: High Poverty Incidence, POV(+)
 Urbanization degree, URB(+)
 Rural Traders per economically active, TRD(+)
 Rural Population Density, RPD(+)
 Sawah land proportion, SAW(+)

Productivity determinants:
 Literacy rate of RCI workers, LIT(+)
 Value of Inputs per worker, INP(+)
 Agricultural Productivity, AGR(+)

Inputs determinants:
 Poverty incidence, POV(-)
 Use of Middlemen services, MID(+)

Female participation determinants:
 Poverty incidence, POV(+)
 Access to traders, TRD(+)

The above interrelationships are shown schematically in Figure 1, below.

Figure 1. *Model of RCI and Middlemen*

Table 1. *Rural Cottage Industry and its Environment in Indonesia, 1986*

	Regions			
	DPC	SOIP	RRP	IP
Regional Indicators				
(1) GRP (Gross Reg.Prod.per ACT)(000Rp)	1180	1353	1694	964
(2) AGP (Agric.Prod.per act.) (000Rp)	606	735	944	589
(3) URB (Urbanization rate) (%)	21	19	18	10
Rural Employment				
(4) ACT (Rur.Econ.Act.Population) (000)	29277	9648	4153	3447
(5) RCIE (Rur.Cot.Ind.Empl.) (% of ACT)	6.5	4.0	2.3	4.5
(6) TRD (Trade employment) (% of ACT)	11.9	7.7	5.5	6.2
Rural Milieu				
(7) RPD (Rural Pop.Density per km2)	281	29	9	20
(8) SAW (Wet rice land) (%)	38.4	31.2	18.6	18.1
(9) POV (Poverty incidence)(%)	32.6	14.0	5.9	29.1
Cottage Industry Characteristics				
(10) RCIP (RCI val.add.per act.) (000Rp)	332	508	610	401
(11) INP (Inputs per est.per year)(000Rp)	1329	1888	1508	900
(12) DIR (Direct sales to cons.) (%)	27	29	42	57
(13) MID (Use of Middlemen) (%)	40	36	25	22
(14) LIT (Literacy of entrepreneurs) (%)	36	56	52	48
(15) FEM (Female participation) (%)	48	42	27	35

Sources

- GRP Gross Product (excl.oil) per worker by province, 1986. *BPS 1989E: 90-124; BPS 1987: 338*
 AGP Agricultural product per worker, 1986 *BPS 1989E: 90-124; BPS 1987: 338*
 URB Urban population percentage of total, 1985, *BPS 1987*
 ACT Rural active population 1985, *BPS 1987: 335*
 RCIE Rural cottage industry employment 1986 (%ACT), *BPS 1989A: 48; 1987:333*
 TRD Workers in wholesale and retail trade 1985, *BPS 1987: 333*
 RPD Rural population density. Population statistics 1985 excluding townships
 SAW Wetland area as percentage of cultivated land, 1986, *BPS 1989D: 210-11*
 POV Rural poverty incidence 1980, percentages, *Hill 1989: 42-43*
 RCIP Cottage industry value added per worker, 1986 and 1987 (000Rp) *BPS 1989A: 149, 111; BPS 1989B: 134*
 INP Intermediate inputs per cottage establishment per year, 1986 and 1987 (000Rp) *BPS 1989A: 148; BPS 1989B: 146*
 DIR Percentage of RCI units selling directly to consumers, *BPS 1989B: 113*
 MID Percentage of RCI units selling to middlemen 1986, *BPS 1989A: 102; BPS 1989B: 110*
 LIT Literacy rate of RCI workers, *BPS 1989B:29*
 FEM Female participation in RCI 1986, *BPS 1989A: 108*

4. REGIONAL INCORPORATION PATTERNS IN INDONESIA

In order to demonstrate regional differentiation of trade incorporation of RCI in Indonesia, regional data are presented in Table 1. RCI data were taken from the industrial census and two subsequent cottage industry surveys from 1986-87, which give data on labour, output, inputs, marketing and finance of the enterprises⁵. The above hypothesized tendencies have been verified cross-section wise with provincial data [Weijland 1991]. Here we present a general picture of the tendencies for four regions grouped according to criteria that correspond with the variables found essential for RCI development, namely population density, trade networks, agrarian system, and resource endowment [UNDP *et al.* 1988; Haggblade *et al.* 1989]⁶. Thus we have the following regions:

- 1) **Densely Populated Centre Provinces (DPCP):** Java (West⁷, Central, and East Java, Yogyakarta); Bali.
- 2) **Settled Outer Island Provinces (SOIP):** part of Sumatra (North, West and South Sumatra, and Lampung); Part of Sulawesi (North and South Sulawesi); South Kalimantan
- 3) **Resource-Rich Provinces (RRP):** the remaining part of Sumatra (Aceh, Bengkulu, Jambi, Riau); part of Kalimantan (West, East and Central); Irian Jaya
- 4) **Isolated Provinces (IP):** Nusa Tenggara (East and West); the remaining part of Sulawesi (Central and South-East); Maluku

With a rural economic active population of 30 millions (ACT, Row 4), the DPC provinces represent densely populated rural areas with almost 300 persons per km² (RPD, Row 7) and an ancient agrarian organization (*sawah* irrigation, SAW, Row 8), which favoured trade employment (TRD, Row 6) and traditional rural industry (RCIE, Row 5). The Settled Outer Island Provinces, with a total of 10 million rural workers, have population densities averaging at only one tenth of those in the Centre. But they have similar agrarian systems and industry and trade traditions. The Resource-Rich Provinces, on the other hand, have very low rural population densities and little industrial tradition, but naturally they are favoured by their manifestly abundant resources, which, even when oil is excluded, is boosting their regional products and urbanisation (Row 1, 2, and 3). Only the Isolated Provinces, consisting of small isolated and mountainous island economies, are lacking in all possible favourable conditions for RCI. So DPCP scores highest with its favourable

⁵ See data sources attached to Table 1

⁶ This grouping follows a leading study on economic diversity in Indonesia [Hill 1989]. Two provinces were excluded: DKI Jakarta because of its city characteristics, and East Timor because of data deficiencies.

⁷ Excluding the province of Jakarta

preconditions, SOIP and RRP are in a medium position, while IP scores lowest. It would follow that RCI employment as a percentage of rural active population would be highest in the Centre and lowest in the Isolated Provinces, but this is not supported by the statistics of RCIE, showing first an expected fall from 6.5 percent RCIE in DPCP to 4.0 percent in SOIP and 2.3 in RRP, but then a rise again to 4.5 percent in IP (Row 5). The latter rise can be due only to rural poverty, which has pushed poor workers and especially poor women towards some home industry⁸. The rural people in IP are very poor by any standard - whether regional product (GRP, Row 1), farm income (AGP, Row 2) or poverty incidence (POV, Row 9), so that the push towards cottage industry employment is high in spite of unfavourable market conditions.

Indications for market access are offered by the rural trading population (TRD, Row 6) and the part of RCI enterprises using middlemen services (MID, Row 13). MID shows a consistently declining trend, from 40 percent for DPCP, 36 for SOIP, 25 for RRP, to 22 for IP. So the use of middlemen services tend to correspond more with the demand pull factors for RCI than with RCI's need for employment. The obvious conclusion would be that in places like IP, where enabling environment is lacking, cottage industry is driven by local labour supply and poor local markets only. This tendency can be further demonstrated by the consistent increase of the share of output marketed directly to local consumers as the aforementioned favourable conditions are decreasing (DIR, Row 12). The IP situation differs structurally from that in the Centre, where excessive supply of labour may be equally evident, but where trade networks are dense (TRD, Row 6), and middlemen very active. The table shows that 11.9 percent of the rural population is active in trade in DCP, whereas this percentage falls to 6.2 in IP. Doubtlessly trading in the Centre is stimulated by low transaction and transport cost, associated with high rural population density. In addition, DPC enterprises can exploit cheap labour because of high rural poverty incidence (POV, 32.6 percent, Row 9). Moreover, the Centre has a vast reservoir of dependent women workers with the lowest rate of literacy (Rows 14 and 15). All this results in high RCI employment with low earnings in DPC, falling to Rp 332,000 value added per worker per year, or less than a dollar a day (RCIP, Row 10). So it turns out that 'favourable conditions' do not necessarily imply high earnings for RCI. They even do not imply easy access, for in spite of their more accessible markets, poor workers find it hard to respond to market opportunities as they can purchase hardly any inputs (INP, column 11) and therefore create correspondingly small added values. Their only luck is that, under certain conditions, middlemen can solve some of their financial problems. The trade sector

⁸ Poverty incidence data are taken from a 1980 survey. Data from 1987 are rejected to avoid circular reasoning: poverty affects inputs, but low inputs again lead to poverty! It therefore was assumed that persistent poverty as reflected by 1980 data would cause high participation in RCI.

in general and middlemen in particular appear to abound in the Centre. About 40% of the RCI enterprises in the Centre use middlemen, while only 27 percent of them sells directly to local customers.

The Settled Outer Island Provinces present an interesting case. Here rural population density is much lower than in the Centre, so one might expect less RCI potential. However, the SOIP people are less poor, and their higher regional productivities would imply stronger demand pull forces. But they also could imply better alternative employment opportunities and consequently less supply of the lower labour categories. And indeed, compared to the Centre, RCI employment is lower (4 percent, Row 5). According to other sources it is also less specialized and provides less primary incomes (*BPS 1989A: 48, 135*). But the higher incomes for the RCI workers allow for more purchased inputs (INP, Row 11), which contribute to higher RCI earnings. It is noteworthy that even under these favourable circumstances RCI still tends to sell more to traders than to local customers.

Compared with SOIP, the Resource-Rich Provinces with higher incomes theoretically should offer even better opportunities for RCI. It is clear, however, that the regional demand pull factors, GRP and AGP, have no visible positive influence on total RCIE. To the contrary, they apparently depress RCIE, presumably through offering better employment opportunities outside RCI. And considering population densities around 5 persons a km², traders will soon find it unattractive to visit the interior. So RCI would have to orient itself more to its local market. But low population density narrows the local markets, and consequently RCIE falls to some 2 percent (Row 5). However, it is rather prosperous compared to RCIE in the other regions, and with low poverty incidence and low female participation, middlemen services seem to be less needed.

The Isolated Provinces, finally, give the most dismal picture. Isolation may hinder competition, but it also prohibits marketing, and with very small local markets the marketing problems are most serious. Given the long distances it is not plausible that middlemen can be very active here, and the statistics show that direct selling in the poor local markets remains predominant in IP.

4. CONCLUSIONS

RCI in Indonesia has been shown to depend heavily on wider market networks and middlemen who help to make these accessible. Its prospects seem to be limited in isolated regions with few natural resources. Such places do not attract traders, so RCI remains a poverty-driven activity bound to decline when other sources of income are offered. In regions with relatively abundant resources a typically resource-based industry can develop if access to distant markets can be gained and communication channels improved. Densely populated areas with good trade networks are likely the most favourable seedbeds for rural industry.

Statistical analysis⁹ suggests that a substantial and increasing part of employment and income in RCI would be related only indirectly to local economic growth, as RCI appears to depend primarily on intermediaries for the marketing of outputs and financing of inputs. Policy implications would be that demand oriented policies of a macro nature might not suffice for the very small enterprises, as they would need additional measures to remedy their weak financial position and poor access to markets. These findings as such are not new, but the data on middlemen suggest that, in addition to the conventional policies of a macro and micro nature, regional policies addressing subcontracting producers and traders might deserve consideration as a special instrument to reach the poorest rural workers.

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⁹ A more rigorous statistical analysis including two independent sets of data for 25 provinces is presented in Weijland 1991.

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