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# AGRICULTURE IN A TURBULENT WORLD ECONOMY

PROCEEDINGS  
OF THE  
NINETEENTH  
INTERNATIONAL CONFERENCE  
OF AGRICULTURAL ECONOMISTS

*Held at Málaga, Spain*  
26 August–4 September 1985

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INTERNATIONAL ASSOCIATION OF  
AGRICULTURAL ECONOMISTS  
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1986

Gower

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*Poverty and Beyond: the Forces Shaping  
the Future in Asia*

In the first session of the last IAAE Meeting held in Jakarta, V. S. Vyas (1983) characterised good agricultural production performances in South and Southeast Asia relative to other developing regions as follows:

In most countries of this region agricultural production outstripped population growth; in a number of countries the rate of growth in production was higher than that of the growth in domestic demand; the food self-sufficiency ratio for the region and for the majority of countries improved; the growth of agricultural exports outpaced the growth of agricultural imports ...

He went on to say, 'An equally remarkable feature of development during the past decade is that it made very little impact on the extent of poverty in this region.'

Indeed, persistent poverty despite high rates of agricultural and economic growth is and will continue to be the core problem in the rural sector of South and Southeast Asia. In this paper I will focus on the forces influencing this problem. I will then make a prediction on the problem of a very different nature to emerge, if successful economic development is able to reach a stage to solve the poverty problem, drawing on the experience of East Asia.

#### ECONOMIC GROWTH AND POVERTY

First, we will try to have an overview of the Asian economy. Viewed from macro statistics (Table 1), the economic performance of the Asian Region has been impressive. Emergence of Japan from a developing-country stage to one of the major industrial powers in the world, within only two decades since the 1950s, is a well-known story. A decade later, Asian NICs (Newly Industrializing Countries) such as Korea, Taiwan (China) and Singapore began to take off in industrialisation and economic growth at a rate even faster than in Japan. This was followed by ASEAN countries. During the 1970s, despite the slow-down in the growth rates of advanced industrial economies after the first Oil Crisis, the annual

TABLE 1 *Indicators of industrialisation and economic growth in selected countries*

	GNP per caput (1980 US\$)	GDP growth rate (%/year)				Share of manufactures in merchandise exports (%)		Debt-service ratio (%)		
		Total		Manufacturing		1970	1980	1970	1980	1982
		1960-70	1970-80	1960-70	1970-80					
India	240	3.4	3.6	4.7	5.0	45	59	21	9	7
Pakistan	300	6.7	4.7	9.4	4.0	27	50	24	11	9
ASEAN:										
Indonesia	430	3.9	7.6	3.3	12.8	1	2	7	8	8
Thailand	670	8.4	7.2	11.4	10.6	2	29	3	5	8
Philippines	690	5.1	6.3	6.7	7.2	4	37	8	7	13
Malaysia	1620	6.5	7.8	na	11.8	6	19	4	2	5
Korea (Republic of)	1520	8.6	9.5	17.6	16.6	14	90	19	12	13
Brazil	2050	5.4	8.4	na	10.3	3	39	13	34	42
Mexico	2090	7.2	5.4	9.0	5.9	12	39	24	32	30
Developed countries (av.)	10320	5.2	3.2	5.9	3.2	66	72			
Japan	9890	10.9	5.0	11.0	6.4	79	96			

Source: World Bank, *World Development Report 1982, 1983 and 1984*.

average growth rate of national income in the ASEAN region exceeded 7 per cent and that of GDP from the manufacturing sector exceeded 10 per cent. The share of manufactured commodities in total commodity exports in Malaysia, Thailand and the Philippines rose sharply from less than 5 per cent in the early 1960s to more than 20 per cent in the early 1980s. Judging from increases in the domestic saving rate and improvements in the quality of industrial manpower and know-how, ASEAN's development seems to have reached a self-sustaining stage.

Similar rates of industrialisation and economic growth have been experienced by Latin American NICs such as Brazil and Mexico. yet the process by which the Asian NICs and the ASEAN economies grew seems much healthier and more genuinely self-sustaining than Latin American counterparts. Take, for example, the debt-service ratio (debt service/exports) as an indicator. From 1970 to 1980, the debt-service ratio in the Asian NICs and the ASEAN countries remained at about the same level in the order of 5 to 10 per cent. This implies that the imported capital was successfully converted into the productive assets which increased the productivity and international competitive position of industry at a rate sufficient to pay for the accumulating external debt-service. In contrast, the debt-service ratio in Brazil and Mexico rose sharply from a level of 20 per cent in 1970 to above 30 per cent in 1980. Contraction of developing countries' exports due to the world recession, following the second Oil Crisis, coupled with the high interest rate policy in the United States, has raised the debt-service ratio in most developing countries. In some ASEAN countries it has been reported to approach a 'critical threshold' of 20 per cent. Yet, it is still incomparably lower than in Latin American NICs.

A disquieting aspect is that, aside from the NICs, the impressive records of industrialisation and overall economic growth in most developing countries in Asia have not accompanied increases in the real wage rates of labourers except for the urban organised sector. Data collected by the Asian Development Bank (1978, p. 54), for example, show that the real wage rates of agricultural labourers have declined or, at best, stayed stagnant for the past two decades. What do the declining wage rates imply in the economies where the average income per caput has been rising as fast as 5 per cent per year? It means that the property income rose at the expense of the labour income; poor labourers owning no property have been immiserised relative to the property-owning class.

One of the basic forces underlying the declining wage rates is the population pressure on agricultural land. Developing countries throughout the world, Asia not excepted, have experienced explosive population growth since the Second World War. The increase in industrial employment has been grossly insufficient to absorb the increased labour force. Meanwhile, the possibility of opening new land for cultivation has been exhausted. The man-land ratio has been deteriorating rapidly at a rate of doubling the number of agricultural workers per hectare within a half century. As the larger number of workers seek employment in a

limited land area, the wage rate will be bid down and many of them become unemployed or underemployed, whereas the land rent will increase – a widening income gap between landlords and landless tenants/labourers.

In order to illustrate the situation, let me report my study conducted on a rice village in West Java (Hayami and Kikuchi 1981, ch. 8). In this village, owing to continued population pressure for the past several decades, the man-land ratio has become extremely unfavourable. The average farm size is only 0.3 hectare and as much as 40 per cent of villagers own less than 0.1 hectare of land. For the past decade the real wage rate declined by more than 10 per cent from 9.5 kg of paddy per day to 8.5 kg. Meanwhile, the land rent increased by about 40 per cent.

The wage decline involved a change in rural community institutions. A traditional rice harvesting system in Java is called *bawon*; in which every villager can participate in harvesting and receive a certain share of the harvest crop. This system represents the traditional community principle of mutual help and income sharing. The system has recently undergone change. First, stronger limitations have been placed on the participation in harvesting (Table 2); the purely open (PO) *bawon* was successively replaced by the system limiting the participation to villagers only (OV), by another system which placed a limit on the maximum number allowed (OM) and, further, by a stronger limitation to those received specific invitations from farmers (LI).

TABLE 2 *Changes in rice harvesting system in a village in West Java (% of farmer adoptees)*

	<i>Bawon</i> <sup>a</sup>				<i>Ceblokan</i> <sup>b</sup>					Total
	PO	OV	OM	LI	1/6 (T)	1/7 (T)	1/7 (T + W)	1/7 (H + T)	1/7 (H + T + W)	
1950s	35	29	18	18						100
1960–61	29	31	21	19						100
1962–63	16	34	33	17						100
1964–65	9	16	16	32	27					100
1966–67	3	10	8	27	52					100
1968–69	1	4	6	19	44	24	2			100
1970–71			2	10	33	51	4			100
1972–73				8	17	67	8			100
1974–75				7	15	67	10	1		100
1976–77				4	7	67	18	2	2	100
1978				4		72	19	1	4	100

<sup>a</sup> *Bawon* system: PO-purely open, OV-open for villagers only, OM-open with maximum limit, LI-limited to invitees.

<sup>b</sup> *Ceblokan* system: 1/6, 1/7-harvesters' share; T, W, H-obligatory works to establish the harvesting right (T-transplanting, W-weeding, H-harrowing).

Source: Hayami, Yujiro and Kikuchi, Masao, *Asian Village Economy at the Crossroads*, University of Tokyo Press and Johns Hopkins University Press, Baltimore, 1981, p. 184.

Later, the *bawon* system was replaced by a new system called *ceblokan* in which the participation in harvesting is allowed only to those who performed the additional service of rice planting without pay. More recently, their share of output was reduced to one seventh, and weeding and harrowing were added in the list of obligatory duties required for harvesters. Through those changes the implicit wage rate per hour of labour employed under the output-sharing contract has been reduced to the same level as the market wage rate of labourers employed under the fixed-wage, time-rate contract. Large farmer employers gained from the wage cost reduction under the guise of fulfilling the traditional obligations of village élites who are expected to share work and income with poorer members in the same community. Through such a process the share of labour wage in agricultural income declined and the share of land rent rose.

### FORCES AND COUNTERFORCES

Growing poverty and inequality demonstrated in the case of this village is not unique but rather common in South and Southeast Asia under the surface of rapid economic development. This process will likely continue for some time to come. Even though population growth itself began to decelerate in the 1970s, the growth rates of the labour force will remain high for the next couple of decades because a large percentage of the population has not yet reached the working age. Partly because the industrial sector is still a minor sector of the economy and partly because the industrial technology imported from developed countries has a bias towards high capital intensity, the increase in employment in this sector will be insufficient to absorb the increment of the labour population in the dominant agricultural sector. The increment of population unable to find productive employment in agriculture and industry flows into urban slums, as reflected in the 'pathological' growth of the service sector from the early stage of economic development.

How to cope with the situation? The answer seems simple – it is infertile or even counterproductive to deal with the problem of growing poverty and inequality without assaulting the underlying economic forces. If the core of the problem is the population pressure to reduce the return to labour relative to the returns to land and capital, the maximum effort must be allocated for the expansion of demand for labour. Two obvious fronts are agriculture and small (and medium) scale industries.

The historical experience of Japan as well as Taiwan (China) and Korea has proved the development of labour intensive, small scale industries to be the most effective way to achieve the dual goals of growth and equity. Even today, Japan's industrial strength is, to a large extent, based on a large number of small-scale industries. In order to foster the labour-intensive small-scale industries, it is vital to correct the intervention policies designed to protect capital intensive, large-scale industries by such means as tariff and foreign exchange licensing, so that the labour

intensive industries can enjoy the comparative advantage in the free market. I wonder whether relatively poor economic growth performances in countries in South Asia compared with those of East and Southeast Asia might be explained, at least in part, by excessive government intervention and regulations on private economic activities. The government must support the small-scale industries by providing education and training services for workers and management as well as information services about new technology and market conditions. As the standard theory of welfare economics tells, the government would be better to specialise in the provision of public goods such as information, while leaving private resource allocation to the market.

Since agriculture is still the dominant sector, the unemployment/underemployment problem cannot be solved without increasing its labour absorptive capacity. The development of land saving and labour using technologies such as more intensive cropping systems combined with higher yielding varieties is the key to achieve both growth and equity in agriculture under labour-surplus condition, as the East Asian experience shows. A precondition for the introduction of such technologies is the development of irrigation systems. The need for government provision of public goods such as irrigation infrastructure and agricultural research and extension services is even greater for agriculture than for industry because of the very small scale of peasant production in Asia. Of course, such efforts should not be limited to irrigable lowland areas. Developments of soil conserving agro-forestry management systems in hills and mountains and of drought resisting varieties and water conserving practices in arid and semi-arid areas are vital to the increase in rural employment and income.

The effectiveness of public investment in irrigation and agricultural research to counteract the problem of growing poverty and inequality may be illustrated by a comparison between a village referred to earlier and another village also located in West Java (Hayami and Kikuchi 1981, ch. 9). In the first village agricultural technology was stagnant because no improvement in irrigation systems was made in recent years and no modern high-yielding variety effective in its environment was made available. Gains in rice yields were not significant. The increase in the labour force against limited land resources resulted in the decline in the economic return to labour. The real wage rate declined, inducing the substitution of hand hoeing for animal ploughing, and labour's income share decreased relative to land's share. The dismal process in this village approximates to the world of classical economists like David Ricardo. As the growth of population presses hard on limited land resources under constant technology, cultivation frontiers are expanded to more marginal land and greater amounts of labour are applied per unit of cultivated land; the cost of food production increases and food prices rise; in the end, the real wage rate will be lowered to a subsistence minimum and all economic surpluses will be captured by landlords in the form of increased land rent. This was exactly what happened in this village.

In contrast, in the second village dramatic improvements in irrigation



systems resulted because this village was covered by one of the major government irrigation projects and, also, because modern high-yielding varieties were made available through an experiment station located nearby. Both the double-cropping ratio and the average yield per hectare of crop area increased. Labour demand increased and the real wage rate rose, despite the large inflow of migrant labourers and farmers' effort to substitute animal power for human labour. The relative income share of labour did not decline and the income of labourers increased absolutely if not relative to farmers. The comparison of these two village cases suggests that it is critically important for countries in South and Southeast Asia to strengthen the efforts to improve land infrastructure and agricultural technology in the labour using and land saving direction in order to escape from the Ricardian trap of stagnation with poverty and inequality.

It is important to recognise that government regulations and institutional reforms aimed at preventing widening income disparity without assaulting its basic cause often prove to be counterproductive to the equity goal itself. What would have happened, for example, if the *ceblokan* contract quoted earlier had been banned for its apparent 'exploiting' role of reducing the implicit wage rate for hired labourers? Given the fall in market wage rates due to changes in labour demand and supply relations, employer farmers would have abandoned the traditional output-sharing contract with neighbours in the same community and would have begun to employ labourers through the market at a fixed daily wage contract. The shift from a patron-client relation in the rural community to an impersonal market relation would have increased the labour transaction cost, especially the cost of supervising the work of wage labourers; this could have encouraged the adoption of labour-saving practices and discouraged substitution of hired labour for family labour, altogether resulting in a reduction of the employment and wage earnings of landless labourers.

In fact, I have encountered a large number of cases in which government regulations and reform laws resulted in loss to the poor, despite their original intentions; land reform regulations, such as rent control, resulted in the eviction of tenants in order to establish landlords' direct management; minimum wage laws induced the shift from labour-intensive crops, such as rice, to extensive crops, such as coconuts; and the prohibition of usury increased the effective rate of interest for the poor by the amount of increased risk premium for private money lenders, while the rich managed to receive a disproportionate share of subsidised institutional credit through their pull with government agencies. It is easy to point out loopholes in the laws and regulations and to advocate a stronger political will in order to close these loopholes. Yet the real problem is the economic and social conditions in developing countries that allows the loopholes to exist.

It is common to refer to the success of drastic redistributive land reforms in Japan and the Taiwan area of China in the post-Second World War years as a model for developing countries in Asia. However, major

differences in socio-economic conditions severely limit the likelihood of reproducing the East Asian experience in South and Southeast Asia today. It should be recalled that Japan's reform was executed under the authority of US occupation forces and Taiwan's executed by the Nationalist Government which was exiled from the continent and, therefore, alienated from the landed interests of the island. Equally important was the huge backlog of data and administrative experience with landownership and tenure systems accumulated in this area since long before the Second World War. In addition, Japanese tenants had learned how to organise themselves through the long history of co-operative and tenant union movements since before the War. More importantly, the critical difference that should be recognised is the economic conditions specific to East Asia that have preserved the results of the land reforms. In both Japan and Taiwan, rapid expansion of non-agricultural employment has resulted in reduced population pressure on land; the agricultural labour force has declined absolutely and real wage rates have risen. If Japan and Taiwan had continued to be subject to population pressure on land similar to that being experienced in South and Southeast Asia today, the results of the land reforms would have been seriously undermined by such developments as illegal tenancy arrangements similar to those we now observe in Philippine villages.

I am not at all saying that equity-oriented policies and reforms are unnecessary or undesirable. I am saying that the direct importation of the equity-oriented policies from the developed countries without due recognition of major differences in underlying economic forces and in social and institutional environments is often counterproductive, not only to the efficiency goal but also to the equity goal itself. It is important to recognise that institutions are viable only when they are consistent with the traditional norms in society. For example, I have observed sharecropping tenancy still widely practised in Philippine villages even though it is illegal under the land reform laws, because the cropsharing contract is consistent with the traditional moral principles of work and income sharing in rural communities in addition to other merits such as risk sharing. Institutional reforms cannot be viable and effective unless they are considered fair and legitimate in terms of traditional norms ingrained in the mind of people in the society. It is therefore necessary to make positive use of indigenous community institutions and organisational principles in designing modern development institutions that can promote both growth and equity.

One might argue that the growing poverty and inequality in South and Southeast Asia is a transitory phenomenon along the rising phase of the Kuznets inverted U-curve in the changes in income distribution in the process of economic development. But, the real concern is whether the cumulative frustration in the rural sector and the urban unorganised sector might result in social unrest and disruption that induce capital flights and jeopardise industrialisation and economic growth before the declining phase of the inverted U-curve will be reached. Thus, South and

Southeast Asian economies are at the crossroads en route either to growing poverty and inequality which may end up with political disruption and the abortion of economic development or to sustaining economic growth up to the point of eradication of mass poverty. Which route to follow depends critically on the efforts to develop appropriate technology and institution in the rural sector.

### BEYOND POVERTY

If the present rates of economic growth can be sustained, most countries in South and Southeast Asia will eventually reach a threshold beyond which the real wage rates begin to rise sharply and inequality to decline; this has been the case of Japan since the 1960s and of Korea and Taiwan since the 1970s, and will likely be replicated relatively soon by the ASEAN countries. In that stage of economic development East Asian countries have had to experience an agricultural problem diametrically different from that of South and Southeast Asia today.

Economic growth in East Asia has been accompanied by a rapid decline in comparative advantage in agriculture. During this period of Japan's most rapid industrial growth, 1955 to 1970, labour productivity in agriculture in Japan grew at a similar pace to that in North America and Western Europe, whereas Japan's labour productivity in manufacturing grew at more than twice the average rate of other industrial countries. A similar but even more extreme contrast occurred for Korea and Taiwan during the 1970s. The chief restraint on raising labour productivity at a faster pace has been East Asia's small farm size. In all three countries, the average farm size is still only a little above one hectare and that severely limits the scope of mechanisation to substitute capital for labour. Indeed by 1980 the level of farm mechanisation as measured by tractor horsepower per hectare of cultivated land area had risen to 8 hp in Japan, compared with 4 hp in France and 7 hp in West Germany. But, because the average cultivated land area per worker in Japan was only about one-tenth that of France and one-fourth of Germany, tractor horsepower per worker in Japan remained only about one-fourth that of France and Germany. As a result, Japan's labour productivity was less than one-fourth that of France and Germany, even though Japan's land productivity was about twice and three times higher than France and Germany, respectively.

Thus, how to adjust the agrarian structure to the new labour-saving and scale-biased technology that is consistent with the high-wage economy seems to be the most serious problem in agricultural adjustment in East Asia. A major impediment to this adjustment has been land tenure regulations since the successful postwar land reforms. Tenancy rights have been so strongly protected in the land reform laws that it has been almost impossible for landlords to evict tenants. In addition, land rent has been controlled at a level so low as to give land owners little incentive to lease out their holdings. Thus non-farmers who inherit land tend to hold

on to it and farm it on a part-time basis, even very inefficiently, rather than lease it out. Ironically, the relatively egalitarian agrarian structures and institutions in East Asia that facilitated the development and diffusion of the labour using (and land saving) and scale neutral technology consistent with the low-wage economy in the earlier stage of development are now turning into the major constraint against structural adjustment.

Rapid shifts of comparative advantage away from agriculture in Japan, Korea and Taiwan in the process of very fast industrial development have required major adjustment in intersectoral resource allocations. If this adjustment were left to the market mechanism, its cost should have been shouldered mainly by the agricultural population in such forms as rural-urban income disparity and depopulation in rural communities. Increases in the adjustment cost have induced agricultural producers to demand agricultural trade protection and farm price and income support programmes. Concurrently the resistance of the non-agricultural population against the agricultural protection policies has declined. The share of food costs in urban household expenditure declined appreciably owing to rises in wage rates and income per caput, thereby reducing the influences of food prices on the cost of living. The secular decline in the share of agriculture in national income, employment and consumption made it less burdensome for the nonagricultural population to shoulder the cost to support domestic agricultural producers in the form of either high food prices or direct subsidies.

The increasing demand for and the decreasing resistance against agricultural protection policies have resulted in sharp increases in the level of agricultural protection in East Asia as measured by the rates of difference of domestic prices from international prices (nominal rates of protection) in Table 3. The nominal rate of agricultural protection of Japan in 1955 was only 18 per cent which was considerably lower than the average of the countries that later formed the EEC. It rose rapidly, reaching the EEC level in 1960 and the Swiss level in 1965, which is known to be exceptionally high for reasons of national security and environmental conservation for Alpine tourism. Similar but more dramatic changes occurred in Korea and Taiwan (China) from 1965 to 1980. Until 1965, the NRPs of Korea and Taiwan had been negative, reflecting agricultural exploitation policies that are typical of economies in the early stage of economic development. During the subsequent decade and a half their agricultural protection levels rose sharply, surpassing the EEC level and reaching a level comparable with Japan and Switzerland by 1980.

Such high rates of protection do not only result in significant loss in domestic welfare but also create serious international friction. It is well known that Japan has been under very strong pressure for agricultural trade liberalisation not only from major food exporters in North America and Australasia but also from developing countries with respect to sugar, silk, pineapple and other tropical products. The

TABLE 3 *Comparison of the nominal rates of agricultural protection between East Asian countries and twelve other developed countries, 1955 to 1980*  
(per cent)<sup>a</sup>

	1955	1960	1965	1970	1975	1980
East Asia:						
Japan	18	41	69	74	76	85
Korea	-46	-15	-4	29	30	117
Taiwan (China)	-17	-3	-1	2	20	52
European Community:						
Denmark	5	3	5	17	19	25
France	33	26	30	47	29	30
Germany, FR	35	48	55	50	39	44
Italy	47	50	66	69	38	57
Netherlands	14	21	35	41	32	27
United Kingdom	40	37	20	27	6	35
Average <sup>b</sup>	35	37	45	52	29	38
Non-aligned Europe:						
Sweden	34	44	50	65	43	59
Switzerland	60	64	73	96	96	126
Food exporters:						
Australia	5	7	5	7	-5	-2
Canada	0	4	2	-5	-4	2
New Zealand	na	2	0	5	7	-3
United States	2	1	9	11	4	0

<sup>a</sup> Defined as the percentage by which the producer price exceeds the border price. The estimates shown are the weighted averages for 12 commodities, using production valued at border prices as weights. The 12 commodities include rice, wheat, barley, corn, oats, rye, beef, pork, chicken, eggs, milk and sugar.

<sup>b</sup> Weighted average for all six countries shown for 1975 and 1980, but excluding Denmark and the United Kingdom for earlier years.

Source: Anderson, Kym and Hayami, Yujiro, *The Political Economy of Agricultural Protection: East Asia in International Perspective*, Allen and Unwin, London, 1986.

pressure will increase on Korea and Taiwan as their weights in the world economy continue to rise.

An important point is that the agricultural protection of countries in East Asia has been raised to the highest level in the world not because they have a unique bias for preserving domestic agriculture but because their comparative advantage shifted from agriculture to industry at such a rapid rate that social and political difficulties involved in intersectoral resource adjustments may have become unbearably large in the absence of protection (Anderson and Hayami, 1986). This suggests that East Asia's experience is likely to be duplicated in future in densely populated, resource-poor developing countries in South and Southeast Asia as they follow East Asia in their economic development and overcome the present overriding problem of poverty. At that stage, the diffusion of

agricultural protectionism in Asia might grow to be a major disruptive element in the international economic order.

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