UNITED NATIONS UNIVERSITY
UNU-WIDER
World Institute for Development Economics Research

Research Paper No. 2006/44

Globalization and Rural Poverty

A Perspective from a Social Observatory in the Philippines

Yujiro Hayami*

April 2006

Abstract

Using a rice village in the Philippines as a social observatory, the impacts of modernization forces under globalization on rural poverty are assessed based on data collected from recurrent household surveys over the past three decades. After cultivation frontiers closed in the early 1950s relentless population increases continued to press hard on limited land resources in this village. This pauperizing force was counteracted to some extents by the development of irrigation systems followed by the diffusion of modern high-yielding varieties of rice. However, the much more important factor that prevented poverty incidence from increasing and income inequality from worsening was identified as the expansion of non-farm employment opportunities resulting from the increased integration of this village with wide urban and foreign markets. This finding does not lend support to the popular assertion that the encroachment of markets into traditional agrarian communities tends to result in greater inequality and misery of the poor.

Keywords: globalization, poverty, Philippines, agriculture

JEL classification: O33, Q13, Q15, Q16

* The Foundation for Advanced Studies for International Development, Tokyo; mail: hayami@grips.ac.jp

This is a revised version of a paper originally prepared for the UNU-WIDER project conference on The Impact of Globalization on the World's Poor, directed by Professors Machiko Nissanke and Erik Thorbecke, and organized in collaboration with the Japanese International Cooperation Agency (JICA) in Tokyo, 25-26 April 2005.

UNU-WIDER acknowledges the financial contributions to its research programme by the governments of Denmark (Royal Ministry of Foreign Affairs), Finland (Ministry for Foreign Affairs), Norway (Royal Ministry of Foreign Affairs), Sweden (Swedish International Development Cooperation Agency—Sida) and the United Kingdom (Department for International Development).

ISSN 1810-2611 ISBN 92-9190-812-6 (internet version)

Acronyms

CPI consumer price index
IRRI International Rice Research Institute
MVs modern rice varieties
MV1 first-generation modern varieties susceptible to damage by brown planthoppers
MV2 rice variety resistant to planthoppers
MV3s rice variety with better grain qualities

UNU World Institute for Development Economics Research (UNU-WIDER)
Katajanokanlaituri 6 B, 00160 Helsinki, Finland

Camera-ready typescript prepared by Liisa Roponen at UNU-WIDER

1 Introduction

Waves of modernizing forces under globalization, such as commercialization and new technology, have been pressing major changes upon rural communities in the third world. Fears have often been expressed that these forces are destroying the traditional community institutions based on the principles of mutual help and income sharing, thereby creating greater inequality and higher incidence of poverty in the rural sector (Griffin 1974; Scott 1976; Lipton with Longhurst 1989). This paper aims to give a microscopic perspective on this concern by means of an intensive case study of one village (*barangay* or *barrio*) in the Philippines, which has been used as a social observatory over the past three decades by social scientists at the International Rice Research Institute (IRRI) including myself.

This village is located in the Province of Laguna lying along the coast of Laguna de Bay (the largest lake in the Philippines), south of Manila. At IRRI we called it East Laguna Village, because it faces the east coast of Laguna de Bay. A survey on this village was first conducted in 1966 by Hiromitsu Umehara (1967). Subsequently, the Social Sciences Division of IRRI conducted eight surveys covering all the households in the village in 1974, 1976, 1980, 1983, 1987, 1992, 1995 and 1997, and additional two surveys covering farmers' households only were carried out in 1996 and 1997.

Based on data collected from these surveys, as compiled in Hayami and Kikuchi (2001), this paper aims to assess the possible impacts of modernization forces under globalization on rural communities in developing economies. The four major forces focused in this study are: (i) rapid population growth continuing to press on limited farmland available to villagers, (ii) diffusion of modern high-yielding varieties of rice associated with increased application of fertilizers, which is popularly called 'the green revolution', (iii) land reform programmes aimed at transferring land cultivation rights from landlords to tenant farmers, and (iv) expansion of non-farm economic activities resulting from the increased integration of this village with wide urban and foreign markets.

How those forces are related to globalization may need explaining, with the exception of the fourth factor. First, it is important to recognize that major acceleration in population growth in this study site as well as developing countries in general starting from around the 1920s-30s is considered a product of globalization, because it was resulted mainly from sharp declines in death rates due to the importation of advanced medical and public health technology from developed countries and, also, from the expansion of markets to developing economies with the result of preventing local crop failures from turning into famines (Hayami and Godo 2005: 64-73). Second, it is well-known that the green revolution was essentially a transfer of advanced agricultural technology from temperate to tropical areas through adaptive research (Hayami and Ruttan 1985). Third, redistributive land reform may be considered a cure to the inequity that was brought about by earlier globalization. Particularly important in the Philippine context is that land reform was geared to correct the extremely inequitable land distribution that was resulted from Spanish colonialism.

Since these four factors have commonly been operating in developing economies, though their strength differs each across countries, the intensive observations on the transformation of this village are expected to shed lights on the mechanism of how the forces of globalization may interact in influencing poverty and inequality in the rural sector.

All the figures presented hereafter are drawn by the author based on the data collected for Hayami and Kikuchi (2001).

2 Population pressure on land

East Laguna Village began to be settled in the 1880s. In a marshy lowland area adjacent to Laguna de Bay, initial settlers opened land and practised rain-fed rice monoculture under sharecropping contracts with landlords mainly living in local towns. Because of specialization in rice with no alternative crop suitable to the marshy lowland, together with the nature of the colonial Philippine economy based on the export of primary commodities, villagers were involved in market transactions from the beginning, though their income was predominantly produced from rice cultivation with virtually no cottage manufacturing activity as well as few non-farm employment opportunities available. Villagers were poor as they had to submit a half of their rice harvest to landlords but they were largely homogeneous with no significant class differentiation within the village.

The most fundamental and sustained force to press on change in such a community structure was population growth. In this village the frontier of opening new land for cultivation had been closed by the late 1950s, but population continued to increase at rates higher than three per cent per year, tripling the number of villagers from about 400 in 1966 to about 1,200 in 1995, associated almost parallel increases in the man/land ratio (Figure 1). The effect of importation of advanced medical and public health technologies on population growth was especially strong in this area. Not only natural growth was accelerated through reductions in the death rate but also immigration was encouraged because this marshy lowland area became less susceptible to contagious diseases, thereby encouraging immigration from surrounding hills and mountains where people had settled earlier for their better hygienic environments

As the availability of rice field per capita decreased, it became progressively more difficult for children of farmers in this village and more so for migrants from other villages to acquire lands for establishing themselves as farmers. Thus, class segmentation between farm operators and agricultural labourers began to emerge in the hitherto homogeneous peasant community consisting mostly of sharecroppers. The share of agricultural labourers who held no land to cultivate but earned subsistence from hired farm work increased sharply relative to farmers (Figure 2). As the village became closely integrated with the urban economy, a new class of ‘non-farm workers’ was created in East Laguna Village. Typically, they commute from their residence within the village to permanent salaried jobs in nearby towns.

3 Impacts of the green revolution

The impoverishing effect of increased land scarcity was counteracted to some extent by the extension of a national irrigation system to this village in 1958 that converted rice production from rain-fed single cropping to irrigated double cropping. On this infrastructure, the dramatic diffusion of modern high-yielding varieties began from the late 1960s. Because of its close location to IRRI within about 30 km, farmers in this

Figure 1
Growth of population and riceland, East Laguna Village, 1918-97

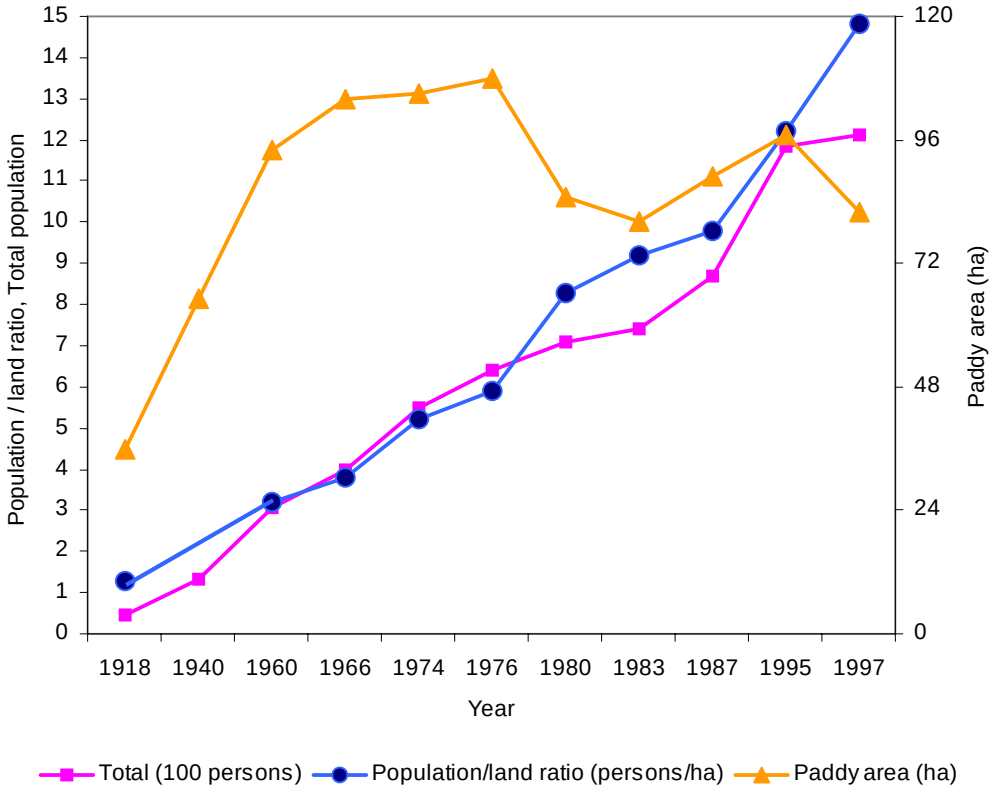
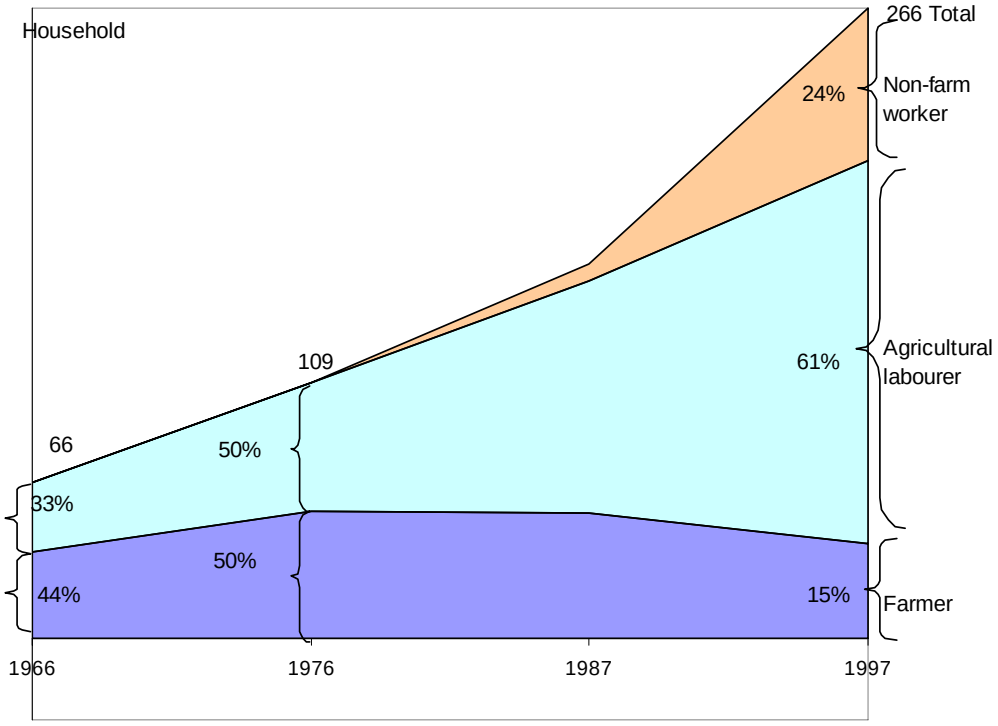


Figure 2
Distribution of households by type, East Laguna Village, 1966-67



area were the earliest to adopt modern rice varieties (MVs), not only in the Philippines but also among tropical rice-producing areas of the world. They were also quick to shift from the first-generation modern varieties susceptible to damage by brown planthoppers (MV1) to MV2s resistant to the planthoppers, and further to MV3s having better grain qualities (Figure 3: panel I). Correspondingly, rice yields per hectare per cropping season in this village more than doubled, from the level of about 2 tons to 5 tons in less than 30 years (Figure 3: panel II). Such quick turnovers of rice varieties, to some extent, reflected the advantage of this village being located close to IRRI. However, this pattern was common among irrigated rice villages in the Philippines as well as in other Southeast Asian economies such as Indonesia and Malaysia, even though some timelags were involved.

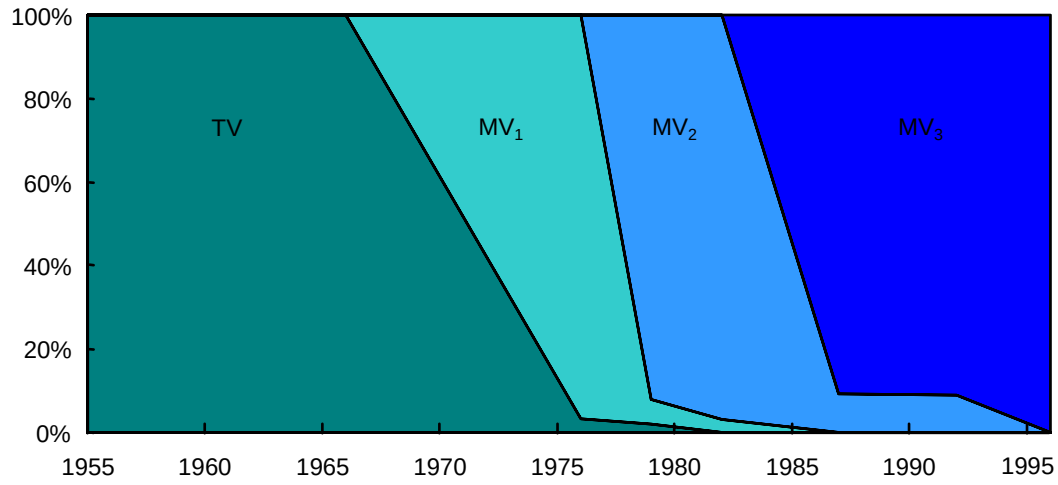
Despite the sharp increases in rice yields, it is doubtful how much farmers gained from this innovation. The successful green revolution not only in the Philippines but also in major rice-growing areas in Asia significantly increased global rice supply, resulting in large declines in rice prices in the world rice market. This global effect was transmitted to this village also, resulting in a reduction in the real price of rice received by farmers from about 20 pesos to about 7 pesos per kg of paddy, at the pace slightly faster than the pace of rice yield increase (Figure 3: panel III). This means that the gains from new rice technology were mostly transferred to consumers, leaving little benefit to farmers. This adverse price effect should have been especially serious to large farmers and landlords whose marketable surplus ratios were high, while marginal farmers and agricultural labourers could have been better off to the extent that they were net buyers of rice (Hayami and Herdt 1977).

It is important to recognize that the adverse price effect of the green revolution on farmers was neither specific to this village nor to the Philippines but was global, as is evident from the close correlation in rice price movements between the domestic price in the Philippines and the Bangkok fob price of Thai rice that is considered to be represent the world rice market situation. It should also be recognized that it had the effect of reducing public supports to the rice sector, especially on irrigation systems. In this village the maintenance of a national irrigation system deteriorated as the result of reduction in foreign aid to the National Irrigation Administration of the Philippines, forcing farmers to supplement water by installing private pumps (Kikuchi, Fujita and Hayami 2000). The new biological technology in the green revolution itself was considered to be neutral with respect to scale since no statistically significant yield difference was observed between large and small farmers throughout the 1970s and 1980s, but large farmers' yields became significantly higher in the 1990s when it became necessary to use private pumps (Hayami and Kikuchi 2000: 101). In this way, foreign aid agencies' response to rice price declines as the very result of the successful green revolution should have worked as a force to increase inequality in this village.

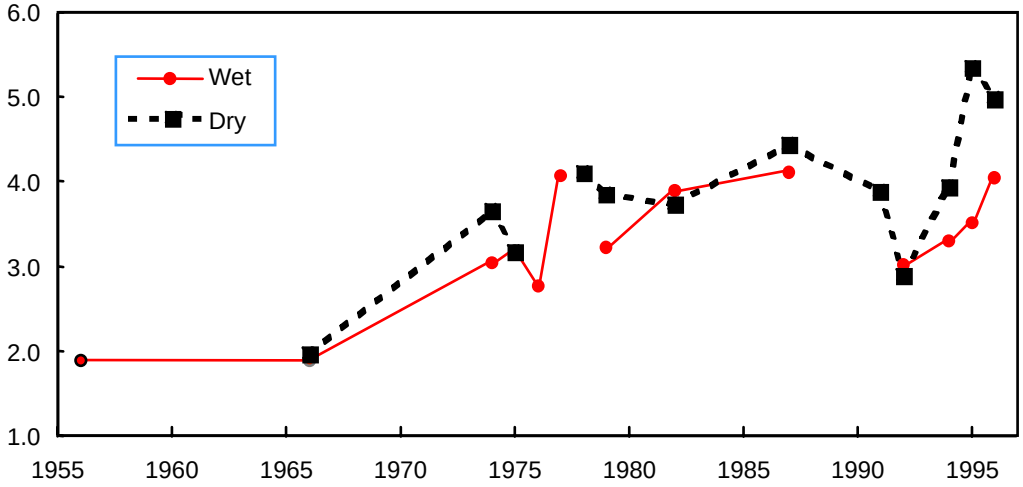
A major factor determining the impact of the new rice technology on poverty reduction should have been its ability to increase farm employment for agricultural labourers who belonged to the lowest income strata. As observed in Figure 4, in the initial stage of MV diffusion the average amount of labour used for rice production per hectare, including both family and hired labour, increased by nearly about 20 per cent from the pre-MV level of 89 person-days in 1966 to 105 days in 1976. The increase occurred mainly in weeding and harvesting/threshing activities, reflecting high-yielding and fertilizer-using characteristics of MVs. From 1976 to 1995, however, the labour use decreased by as

Figure 3
Distribution of rice varieties adopted by farmers, average yield per hectare,
and rice prices received by farmers, East Laguna Village, 1965-95

Panel I: Distribution of rice varieties (% of farmers adopted)



Panel II: Rice yields per hectare



Panel III: Rice price deflated by CIP (p/kg)

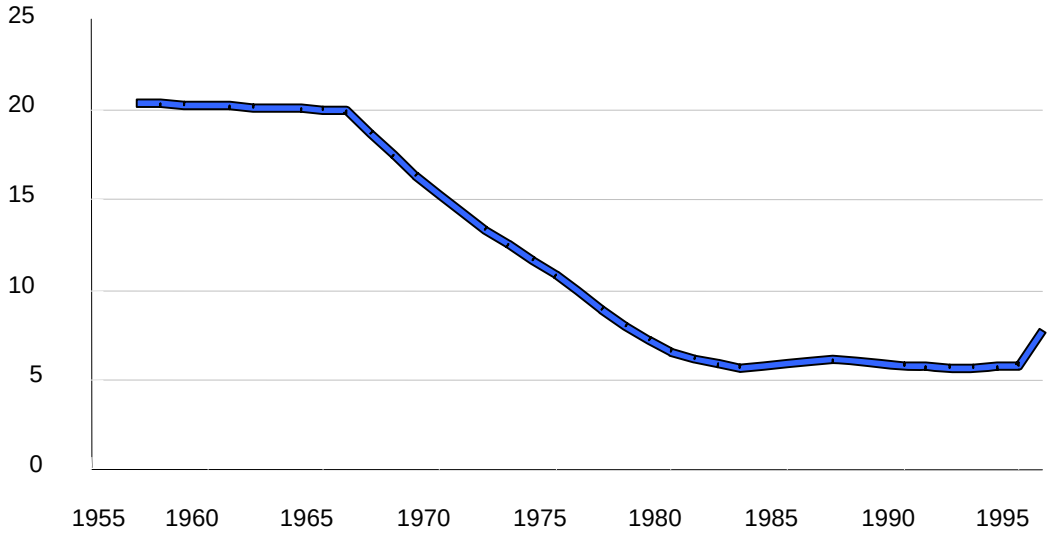
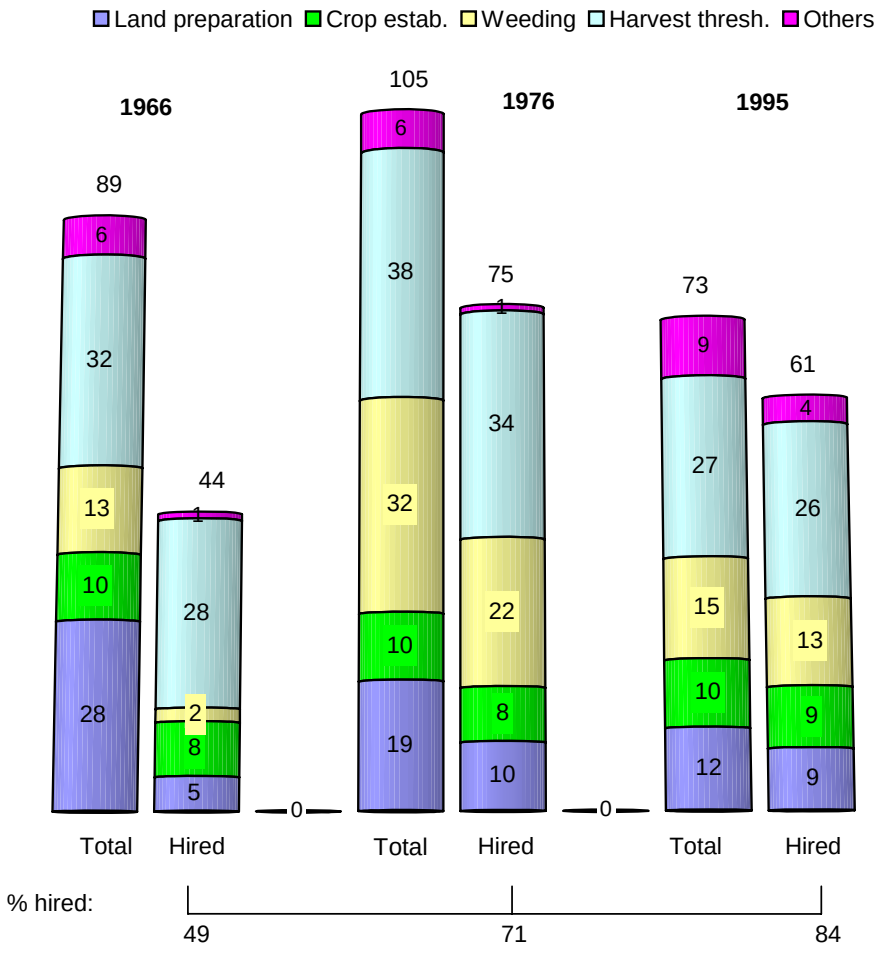


Figure 4
Labour utilization in rice production per hectare (wet season),
East Laguna Village, 1966-95



much as about 40 per cent to the level lower than that of 1966 due to the diffusion of labour-saving practices such as herbicides and portable threshers. Despite this sharp decline in total labour use, hired labour employment in 1995 was 61 days or nearly 40 per cent higher than the pre-MV level of 44 days, implying that the share of hired labour in total labour use increased from about 50 per cent to about 80 per cent. This bias toward the greater use of hired labour is considered one of the results from changes in income distribution owing to interactions between the green revolution and land reform programmes to be discussed in the next section.

4 Income redistribution under the land reform programmes

Compared with the independent effects of the MV technology alone on income distribution, as examined in the previous section, much greater impacts were produced when this technological progress interacted with land reform programmes.

Land reform programmes aimed to correct extreme inequality in land ownership distribution, as the legacy of Spanish colonialism had been implemented strongly in this village and its surroundings under President Ferdinand Marcos' martial law regime for

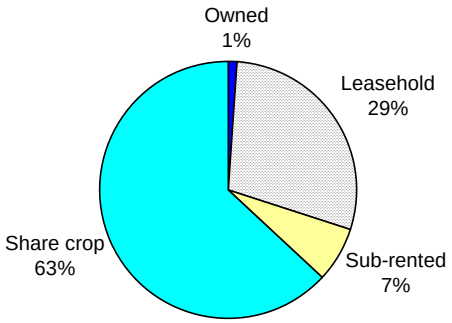
1972-81. The programmes began with ‘operation leasehold’ converting traditional sharecropping tenancy to leasehold tenancy with land rent fixed at lower-than-market rates, to be followed by ‘operation land transfer’ transferring to tenants the ownership of lands under tenancy above landlords’ retention limits (Hayami, Quisumbing and Adriano 1990). Their outcomes in East Laguna Village are clearly observable in Figure 6. In 1966 before the start of land reform, about two-thirds of the paddyfields in the village were under shared tenancy and one-third under leasehold tenancy, whereas land owned by villagers was only 1 per cent of their farming area. With the progress of ‘operation leasehold’, leasehold tenancy became dominant with its share rising to about two-thirds in 1970, while the share of sharecropping land decreased to less than one-third, but the share of owner-farming area was still only 2 per cent in 1976. Further progress in operation leasehold, together with the beginning of operation land transfer, increased owner-farming area to 29 per cent of village land by 1995, while sharecropping area decreased to only 15 per cent.

Initially, operation leasehold resulted in an income transfer from landlords in towns to tenant farmers in this village of about 15 per cent of rice output, because land rent under the traditional 50:50 output- and input-sharing contract was about 40 per cent of output, while the leasehold rent stipulated by the reform was fixed at 25 of normal rice yield at the time of programme implementation. The same applied to the beneficiaries of operation land transfer because their amortization payments to land purchase were usually set about equal to leasehold rents. Later, however, their benefits rose sharply with the progress of the green revolution. Since the rent or amortization payments were fixed in kind, all the increases in rice yields went to tenants. Corresponding to more than twice the increases in rice yields during two decades from the early 1970s, landlords’ share went down from initially stipulated 25 to only about 10 per cent, resulting in major income gains to former sharecroppers.

Such a large income transfer resulting from the concurrent progress of the green revolution and land reform, no doubt, contributed greatly to the reduction of disparity between tenants and landlords, which had been the major woe in rural Philippines. Ironically, however, it became the source of major disparity within the village community, because this benefit of land reform was captured by tenant farmers alone, while no direct benefit accrued to landless agricultural labourers. Moreover, land reform regulations resulted in an inactive land-rental market and closed opportunities for agricultural labourers to ascend to farm operators because, if new leaseholders or amortizing owners were to sub-rent their holdings to agricultural labourers, their rights to continue cultivating the lands would be forfeited and transferred to sub-tenants as ‘the actual tillers of the soil’. Thus, sub-tenancy was practised within only the narrow circle of relatives and close friends. This, together with rapid inflows of labourers from surrounding hills and mountains, resulted in sharp increases in the number of agricultural labourers’ households relative to farmers, as earlier observed in Figure 2.

How the problem of traditional disparity between tenant farmers and landlords was replaced by that of newly emerged disparity between farmers and labourers can be observed in Figure 6. In 1966 under traditional technology and land tenure systems, landlords received land rent amounting to as much as 44 per cent of income produced from rice production, while 23 per cent was paid to hired labourers and the remaining 33 per cent only accrued to farm operators. By 1982 farmers’ income share rose to 50 per cent at the expense of landlords, while labourers’ share increased only marginally. In 1995, farmers continued to receive a high share at the same level as in 1982, while

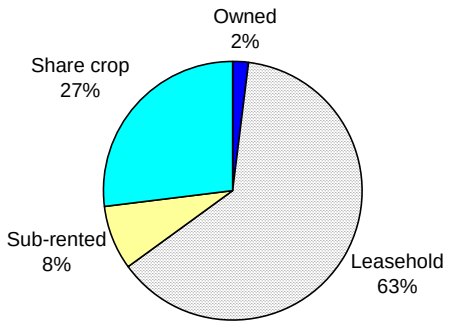
Figure 5
Distribution of riceland by tenure status
East Laguna Village, 1966-95



1966

1970 ▶

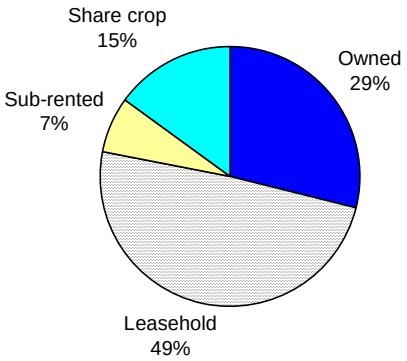
Operation leasehold



1976

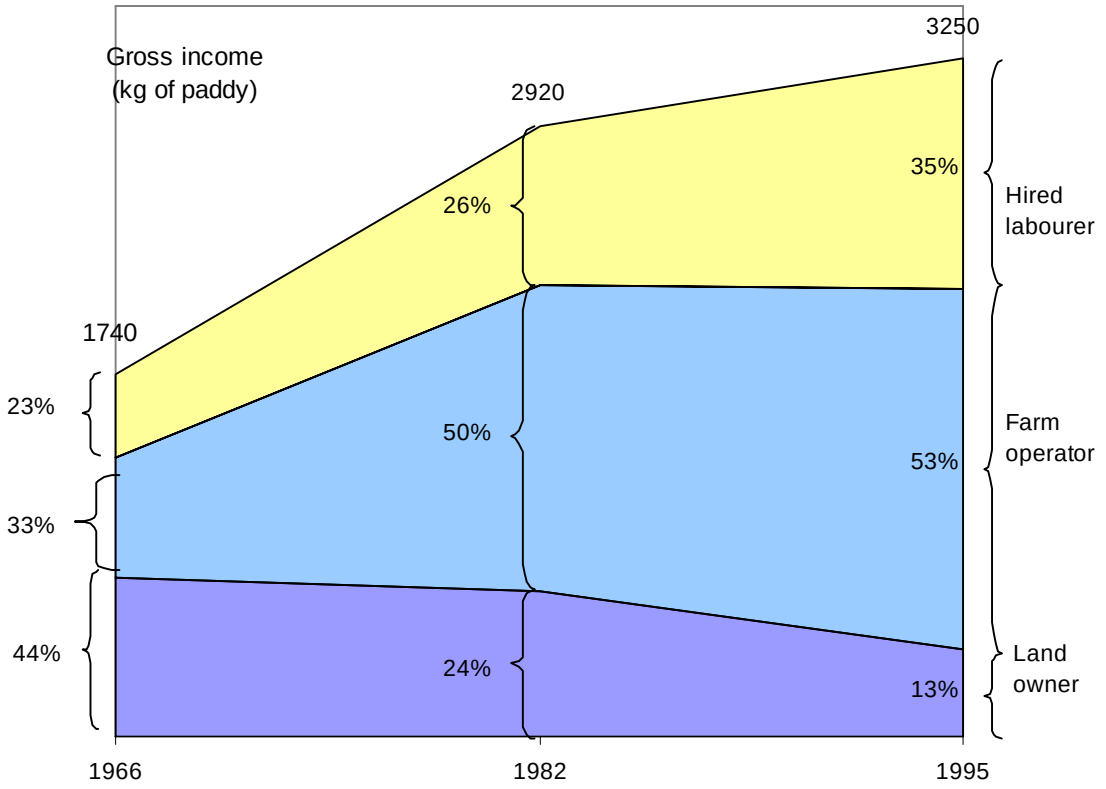
1980 ▶

Operation land transfer



1995

Figure 6
Shares of income from rice production per hectare (wet season)
East Laguna Village, 1966-995



the further decrease in landlords' share went to labourers, reflecting the increased use of hired labour relative to family labour as observed in Figure 4. In terms of the distribution of income from rice farming, it is obvious that the disparity in per capita income widened between farmers and labourers, since the population of the latter increased much faster than the former. Among farmers, income gains were larger for those holding larger lands covered by land reform programmes.

The increasing inequality within the village community was reflected in widening differentials in the level of education across social classes. Figure 7 shows that in 1966 no significant difference was observed in the average number of schoolyears per adult across the households of agricultural labourers, small and large farmers who operate farms above and below 2 hectares, respectively. However, significant differences emerged in 1976 and widened further in 1997 with the education levels of large and small farmers' family members becoming higher than that of labourers by 80 and 60 per cent, respectively.

Correspondingly, inter-class differentials also emerged in family size. Before land reform programmes closed the 'agricultural ladder' for labourers to ascent to the status of farm operators, agricultural labourers mainly consisted of newly married couples with one or two babies if any. Typically, as they accumulated farming experiences and small savings, they became sharecroppers on a small plot of land. Later, as their children increased in number and grew to be able to help farm work, they rent in more lands. In fact, differences in family size observed for 1976 in Figure 8 seem to reflect

Figure 7
Average number of school years per adult male (21-64 years old)
East Laguna Village, 1966-97

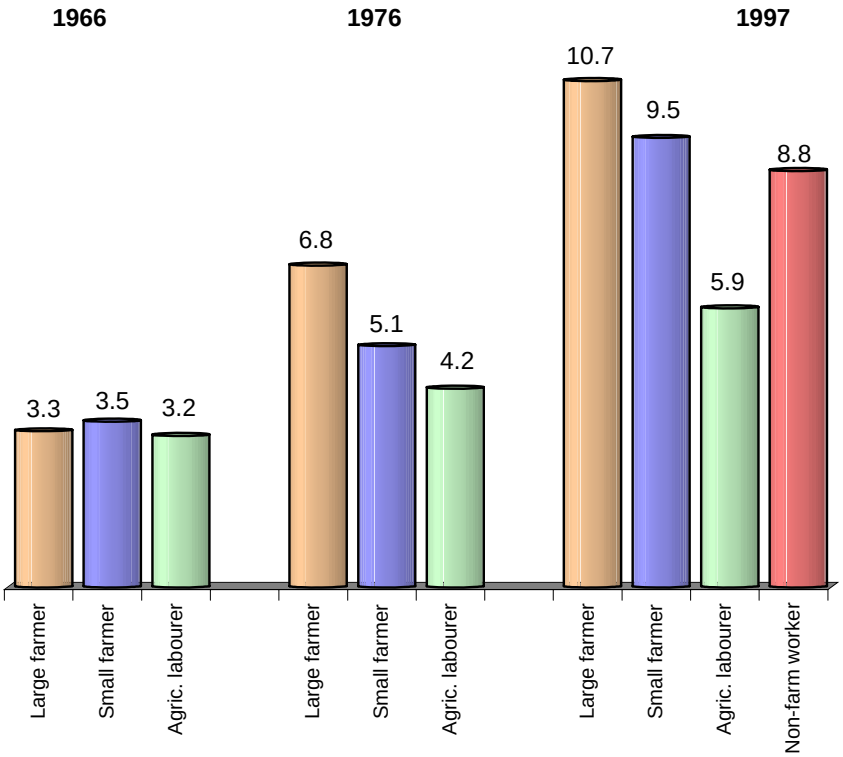
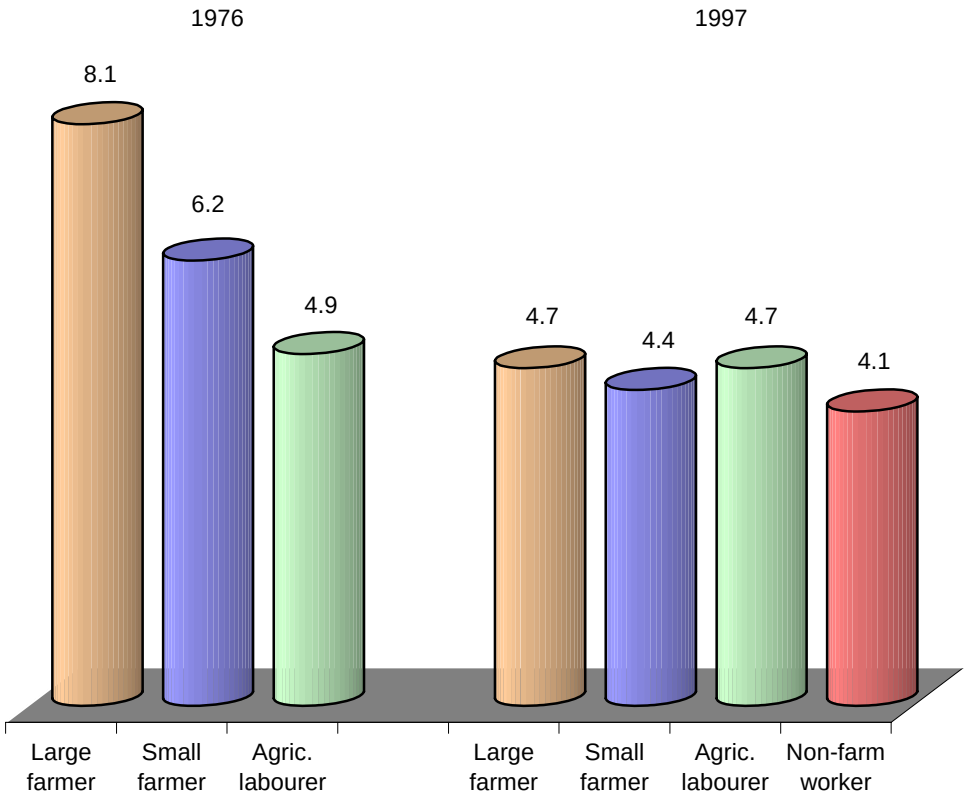


Figure 8
Average family size, East Laguna Village, 1976-97



the lifecycle of villagers associated with the ascension of agricultural labourers to small farmers, and further to large farmers. However, such differences in family size disappeared from the 1997 observations. The family sizes of farmers decreased because many of farmers' children who received high education moved out to urban areas for non-farm occupations. This reduction in farmers' family sizes tended to increase their per capita income relative to labourers. Furthermore, farmers' income was further augmented by remittances from children working in urban areas as well as abroad. In short, the income disparity that was created in this village community through the combined effects of population pressure, new rice technology and land reform continued to widen further over time through differential changes in education and family size.

5 Expansion of non-farm economic activities

Despite the sharply increased population of agricultural labourers under apparently unfavourable conditions, they were able to subsist because of expansions in wage employment opportunities. As already observed, employment creation for them by the green revolution was modest at best, even when counting the effects of substitution of hired labour for family labour by farmers who benefited from land reform. It was the expansion of non-farm employment that helped landless labourers to maintain or even improve their subsistence.

Non-farm employment opportunities for villagers began to expand rapidly especially after the late 1970s when major improvements in highway systems were accomplished, through which the major pulses of globalization were transmitted to rural areas. The west coast of Laguna de Bay adjacent to Metro Manila quickly turned to be an industrial zone with many modern factories being built on the basis of foreign direct investment, to which villagers could commute daily or stay there working in weekdays and coming back on weekends. Even though permanent employment in the modern formal sector was limited mainly to farmers' children who received higher-than-primary education, landless labourers were able to access casual employment in such activities as construction, informal transportation, petty trades and small manufactures, which spilled out either directly or indirectly from the formal-sector activities.

From the late 1980s, a new surge began in the expansion of non-farm employment opportunities through the spread of small manufactures in local towns and even inside villages. They engaged in the production of labour-intensive commodities, such as garments, shoes, toys and Christmas ornaments for export, under various subcontracting arrangements. Typically, a trader in Manila who received a large bulk order from a foreign buyer representing a supermarket chain in the United States would send orders in small lots to these informal manufacturers under various subcontracting arrangements, because of advantages such as access to cheap labour and evasion from labour codes. Inside East Laguna Village traditionally characterized by virtual absence of manufacturing activities, seven workshops were opened during 1991-95 for Christmas ornaments from tin plates and wires with the result that the share of village income from manufacturing jumped from only about 1 per cent before the mid-1980s to as much as 12 per cent in 1995-96 (Hayami and Kikuchi 2000: 237). Much income from such local manufacturing went to the households of agricultural labourers and marginal farmers, as their family members were employed in these workshops or received

payments for doing certain tasks at home under putting-out contacts with the workshop operators.

This kind of rural-based industrialization was one of the bases of export-oriented industrialization in Japan to be followed by Asian NIEs in the past. As NIEs advanced to a higher stage of development with their wage rate sharply rising in the 1980s, demands from high-income economies for labour-intensive, low-technology products were shifted to ASEAN and other low-wage Asian economies (Hayami 1998). An important condition for Asian countries to be able to capture such opportunities in a 'flying geese' pattern should have been wide diffusion of elementary education and development in communication and transportation infrastructure, as clearly illustrated with the case of East Laguna Village.

6 Patterns of income growth

What would have been the net result of complex interactions of the four modernization forces under globalization on economic growth in East Laguna Village? The household income data prepared from our recurrent surveys may shed lights on this question.

6.1 Database

Although full-enumeration surveys were conducted nine times in East Laguna Village, we were able to collect sufficiently comprehensive data for estimating the incomes of all the village households for six years only (1974, 1976, 1980, 1983, 1987 and 1995). For those six years, we estimated the incomes of all the individual households by adding (i) incomes from self-employed activities such as rice farming, (ii) earnings from hired employment, capital and land rentals (including rent from sub-tenancy contract), and (iii) transfer incomes such as remittances from family members living outside the village (minus transfers to the outside). The income from self-employed activities is obtained by subtracting from output values all the paid-out costs. The values of self-employed products used for home consumption are imputed by market prices and included in income, whereas those used for production purposes such as seeds, feeds and payments in kind to inputs are deducted as costs. The data are not available to apply the same estimation procedure before 1974. We tried, however, to estimate total village income in 1965/6 (1965/6 dry season and 1966 wet season) through extrapolations mainly based on the available data of rice production, though it is not possible to estimate incomes for different classes of households separately

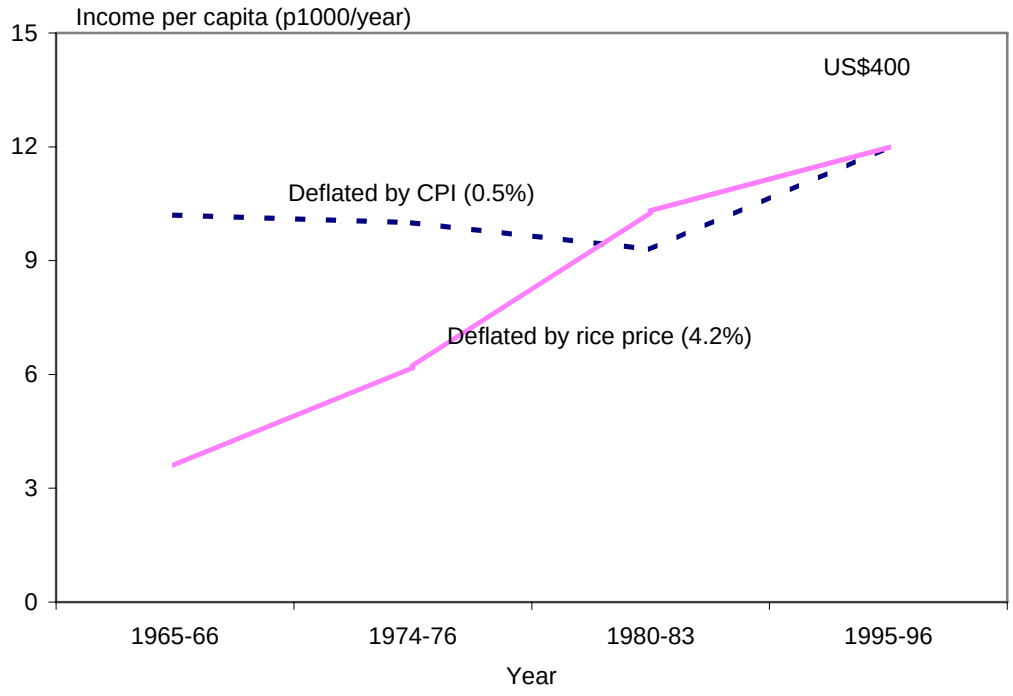
Although we have relatively reliable data for the six survey years, a major problem in ascertaining the trend of real income growth from the surveys in such a small number of years is the influences of weather and other ecological variations on rice yields that resulted in major fluctuations in rice incomes. In order to mitigate the effects of random shocks such as weather and market fluctuations, our comparisons over time is based on the averages of 1974 and 1976 data and of 1980 and 1983 data. For 1995, the average rice income for 1995 and 1996 is added to the non-rice income in 1995, because the 1996 survey covered farmers' households only.

6.2 Growth of average per capita income

The first question is if East Laguna Village was able to achieve positive economic growth under strong population pressure on limited land. The answer depends, to a large extent, on what deflator to use for the conversion of nominal to real incomes. As a measure of economic welfare enjoyed by villagers, the consumer price index (CPI) outside Manila, prepared by the National Statistics Office (formerly National Census and Statistics Office), may be relevant. As a measure of product or value added by village factors, however, the farm-gate price of rough rice might be a more appropriate deflator, considering the dominant weight of rice production in the economy of East Laguna Village, particularly in earlier years. The problem is that the movements in CPI and the price of rice were very different, as already observed in Figure 3.

As is evident from Figure 9, the real income growth patterns are very different between the cases of using the price of rice and CPI as deflators. For the whole period from 1965/6 to 1995/6, CPI-deflated per capita income remained largely stagnant, while that based on rice price deflation recorded a high growth rate of 4.2 per cent per year. While it is certain that the rice price deflation overestimates welfare gains to villagers as it eliminates the adverse price effect of the green revolution, the CPI deflation may result in underestimation because a significant share of rice output was consumed within village without being sold to the market and, also, because the weight of rice in villagers' consumption expenditure is higher than the average of households outside Manila, including not only rural villages but also urban towns. In any case, one certain conclusion we can draw is that East Laguna Village was somehow able to prevent per capita real income from decreasing during the past three decades under strong population pressure on limited land resources as well as the backwash of deterioration in the terms of trade for rice.

Figure 9
Income growth per capita, East Laguna Village, 1965-96



6.3 Per capita income growth by type of household and by type of economic activity

How did relative income positions change across different classes of households? Figure 10 compares average per capita incomes deflated by CPI across different categories of households. The per capita income growth of agricultural labourers was slower than that of farmers, resulting in declines in their relative incomes to large and small farmers from 35 and 67 per cent, respectively, in 1974-76 to 23 and 44 per cent, respectively. Nevertheless, agricultural labourers were able to achieve net growth in per capita real income by 13 per cent during these two decades. This may not be an insignificant achievement, considering the sharply increased population of agricultural labourers competing for employment in a limited farmland area. It was only possible with major increases in incomes from non-farm sources as well as earnings from hired employment.

Indeed, as shown in Figure 11, the income of farm origin (aggregate of self-employed farm incomes and earnings from hired farm employment) decreased rapidly over time, whereas the income of non-farm origin increased. As the result, the share of the latter increased in the average household income from 13 per cent in 1974-76 to 64 per cent in 1995-6. The initial increase in the share of non-farm income from 1974-76 to 1980/83 resulted mainly from increased hired employment in both permanent employment in modern factories in the west coast of Laguna de Bay and casual employment in construction and transportation activities. The former opportunities were mainly captured by the educated youth in the farmer households, whereas a large share of the latter was captured by marginal farmers and agricultural labourers. On the other hand,

Figure 10
Average per capita income (CPI deflation) by type of household
East Laguna Village, 1974-76 to 1995-96

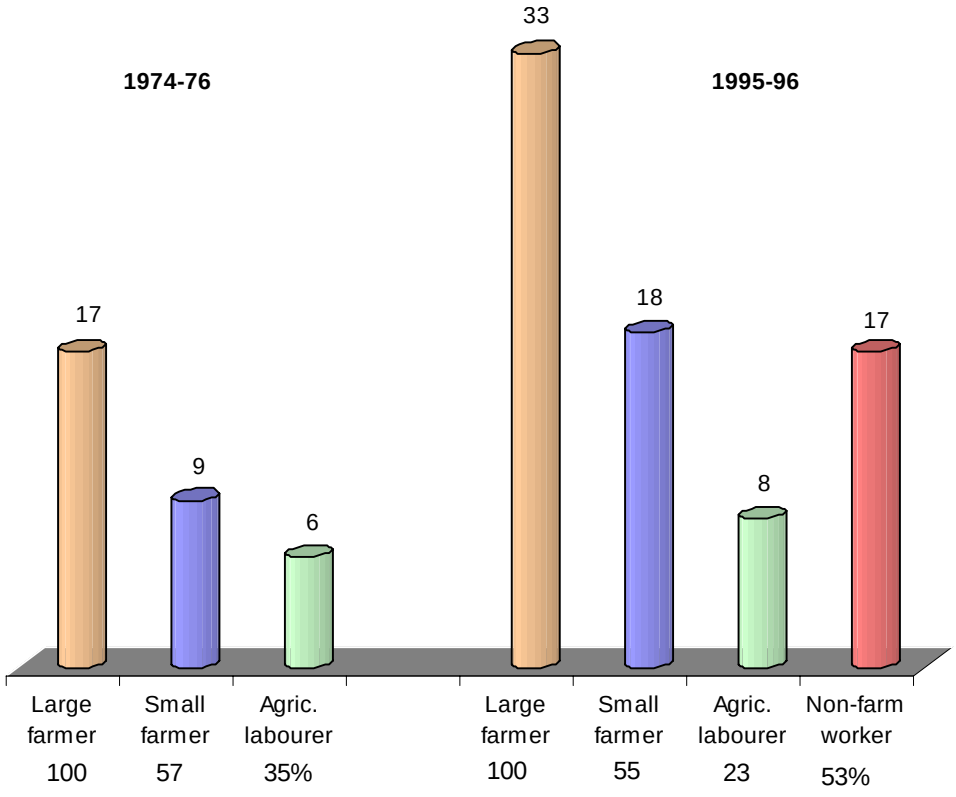


Figure 11
Percentage composition of average household income
East Laguna Village, 1974-95

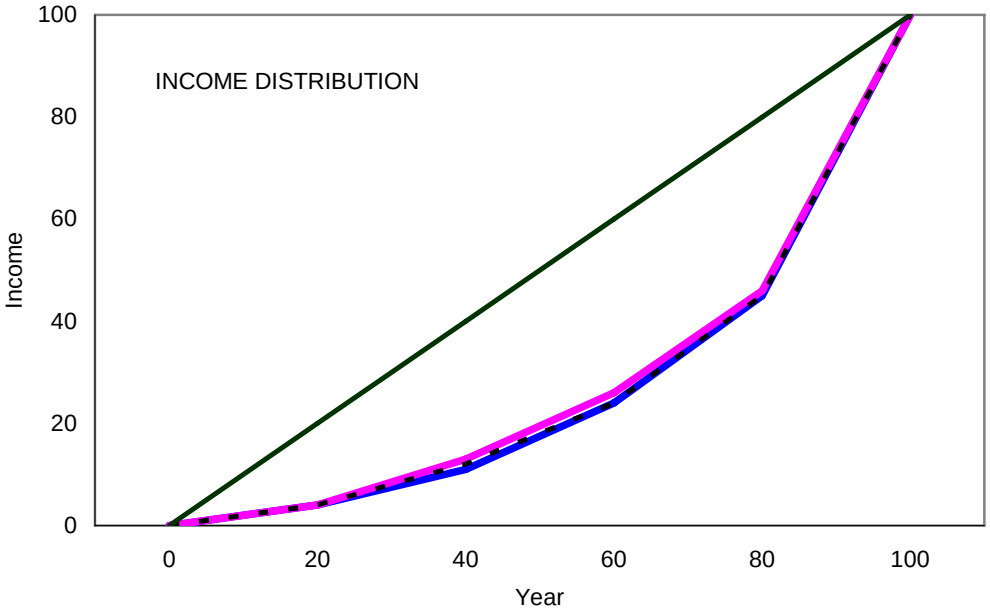
from 1980-83 to 1995-96, the share of the income from non-farm self-employment increased faster than that of hired employment because of increases in cottage industries under subcontract arrangements as explained in the previous section.

The increased integration of East Laguna Village with urban labour markets was especially evident starting from the 1980s in the emergence of non-farm workers as a new social class. Their average household income, earned mainly from permanent salaried jobs in local towns, was about the same as that of small farmers and was more than double than that of agricultural labourers whose earnings were based mainly on casual daily-wage employment. These non-farm workers and small farmers together composed the village middle class, comprising about a third of he population and earning nearly a half of total village income in 1995-96.

7 Changes in income distribution and poverty incidence

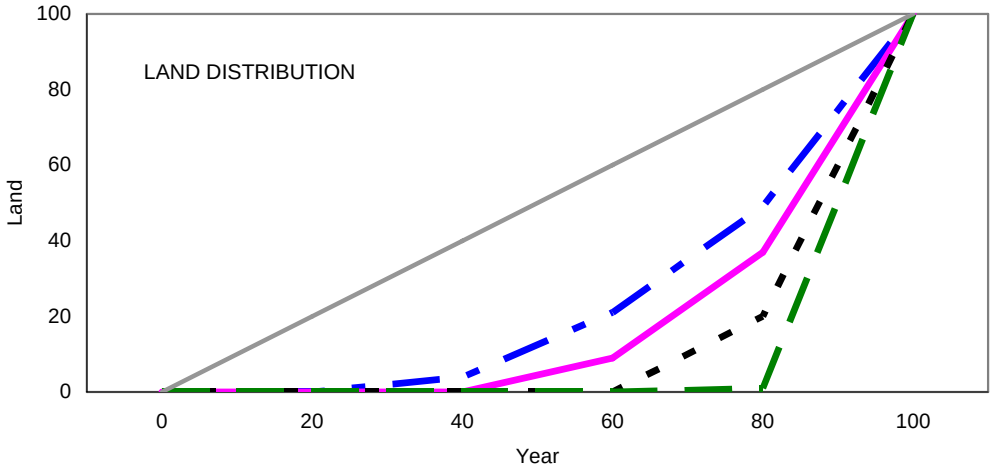
How did the distribution of income and the incidence of poverty change in East Laguna Village? Figure 12 compares changes in the Gini coefficients measuring inequality in the distribution of both income and operational landholdings together with changes in the percentage of people below the poverty line (the so-called headcount index) measuring the incidence of poverty in this community.

Figure 12A
Changes in income distribution, East Laguna Village, 1966-95



Income distribution:		% Gini	% Poor
	1974	45	68
	1983	45	67
	1995	51	56

Figure 12B
Changes in land distribution, East Laguna Village, 1966-95



Land distribution:		% Gini		% Gini
	1966	54	1983	77
	1974	62	1995	89

Notes: % Gini: Gini coefficient calculated across individuals under the assumption that household income is distributed equally among the members of each household.

% Poor: Percentage of population with incomes below the poverty line. The poverty line is defined as the annual per capital income required to satisfy basic nutritional requirements (2000 calories) and other basic needs. The poverty line for respective years are estimated by deflating the 1994 poverty line by CPI estimated by the NSCB (1996) for the rural sector of the Philippines.

It is important to observe that the income Gini coefficient did not rise significantly in the past two decades. Indeed, changes in the Lorenz curve drawn from the household income data are almost not discernible over the years of 1974, 1983 and 1995 (Figure 12 upper section). During this period large farmers achieved significantly faster per capita income growth than small farmers and agricultural labourers, as observed in Figure 10. Yet, large farmers' share of village income did not rise but declined from about 45 per cent in 1974-76 to only about 20 per cent, owing to a sharp decline in their household members' share of the village population (dropping from 26 per cent in 1976 to mere 8 per cent in 1975). Meanwhile, the income share of the village middle class, consisting of small farmers and non-farm workers, rose from about 30 to 40 per cent.

Such movements in the income distribution represent a sharp contrast to those in the distribution of landholdings. The land Gini coefficient increased rapidly over time (Figure 12 lower section), progressively diverging from the income Gini. In contrast to the changes in income share, large farmers' share of operational landholdings was maintained about the same at the level of nearly 70 per cent, despite the sharply reduced shares in the number of households as well as population. As long as East Laguna Village was a purely agrarian community relying mainly on rice production (as was the case before the 1970s), the major determinant of income distribution across households should have been the distribution of operational landholdings. However, as non-farm income earning opportunities increased, the power of land distribution to bind income distribution was progressively weakened; this should have been the main reason why the Gini coefficient of income inequality was prevented from rising significantly, despite the sharp increase in the Gini coefficient of land concentration from 0.54 in 1966 to as high as 0.89 in 1995.

Similar to other rural villages in the Philippines as well as other developing economies, East Laguna Village was characterized by the high incidence of poverty. If we use the National Statistical Coordination Board's (1996) poverty line, percentage of villagers being poor was 56 per cent in East Laguna Village in 1995, whereas it was 53 per cent in the rural sector of the Philippines in 1994 (28 per cent in the urban sector). The incidence of poverty, however, has not increase but rather decreased in the last two decades. The share of population below the poverty line in East Laguna Village was as high as 68 per cent in 1974, remained about the same in 1987, and then dropped to 56 per cent in 1995, reflecting the increased non-farm employment opportunities in the 1990s.

It must be recalled that even though the basic factor underlying the increased inequality in the distribution of landholdings in East Laguna Village was strong population pressure on the limited land available for cultivation, a more immediate cause was the land reform regulations that made the land-rental market inactive. This closed the opportunity for landless agricultural labourers to rent land for own cultivation. Ironically, the land reform programmes that aimed to achieve greater equity in the rural sector contributed to greater inequality within the village community, although the programmes were able to achieve the intended goal of transferring income from rich landlords living in towns to poor tenants in villages. The direct contribution of the green revolution to the wellbeing of the landless poor through added employment in rice production was minor at best. It was the increased employment in non-farm economic activities that prevented the incidence of poverty from increasing sharply among marginal farmers and agricultural workers. These non-farm activities were made accessible to villagers through closer integration of the village economy with wide markets available under the wave of globalization.

From Thomas More's *Utopia* to Russian Narodniks and US Populists in the nineteenth century, and further to the recent 'moral economy school' (Scott 1976), a popular perception has repeatedly been asserted that the encroachment of market into traditional agrarian communities tends to result in greater inequality and misery for the rural poor. Such a view does not seem to find a support in the history of East Laguna Village. Instead, the experience of East Laguna Village in the past three decades, as observed in Figure 12, strongly suggests that the misery of the poor would have been magnified further by the rapid population growth under closed land frontiers if the village had continued to rely on traditional agriculture while being isolated from urban market activities.

8 Globalization in a historical perspective: a concluding remark

Finally, I will try to give a historical perspective to the nature of current globalization and its impact in East Asia with reference to the case of East Laguna Village.

Baldwin and Martin (1999) characterize the current wave of globalization beginning in the twentieth century in comparison with the earlier wave in the nineteenth century. According to these authors, the 'first globalization wave' in the nineteenth century was generated by the rise of industrial power in western countries, which resulted in the de-industrialization of the third world under the dictate of comparative advantage. In contrast, the 'second wave' currently in progress has been generated by the shift of comparative advantage in advanced economies from the industrial production of standardized commodities to the production of knowledge and information, having the effect of promoting manufacturing activities in developing economies.

While the above characterization of the two waves seems valid, it would be useful to specify the earlier wave that surged from the western to the tropical world in the fifteenth-seventeenth centuries. This wave was provoked by 'merchant capitalism' (Kuznets 1966: 3-8) or mercantilism under the support of absolutism in western Europe, first led by Spain and Portugal and followed by England, France and the Netherlands. Unlike in the wave of the nineteenth century in which western traders collected tropical cash crops and minerals in exchange for manufactured commodities under the free trade system, merchant-adventurers in the mercantilist regime relied more heavily on plundering of the natives through tax and tribute as well as forced labour for monopoly export to their home countries under the charters of absolute monarchies.

Thus, it seems appropriate to consider that tropical economies have been integrated with the western world over the three globalization waves induced, first by merchant capitalism in the fifteenth-eighteenth centuries, second by 'industrial capitalism' a la Marx in the nineteenth-early twentieth centuries, and third by what may be called 'knowledge capitalism' currently in progress. The impacts of these three waves are clearly observable with respect to East Laguna Village. The two traditional characteristics of this village were pervasive landlordism and rice monoculture, which were commonly shared by rural communities in the Philippines. The former was clearly the legacy of Spanish colonialism established through plundering the rights of natives under the system of merchant capitalism backed by absolutism in a process similar to that of Latin America (Phelan 1959; McLennan 1969; Larkin 1972). On the other hand, rice monoculture with virtual non-existence of manufacturing activities until the 1970s

would have been the reflection of the second wave that caused de-industrialization in the third world, especially in Southeast Asia (Resnick 1970; Bairoch 1975).

The third globalization wave has surged to this village in several ways. Explosive population growth through a reduction in the death rate from the importation of modern medical and public health technologies, application of land reform programmes, and the green revolution may be considered the outcomes of international knowledge transfer, which is the major characteristic of knowledge capitalism. However, the more obvious and stronger impact of the third wave on the life of villagers was its effect in promoting industrialization in developing economies, as manifested in the rapid expansion of non-farm employment opportunities. The impact of this effect in reducing poverty and inequality, as observed with for East Laguna Village, should have been shared among high-performing economies in the East Asian Miracle (World Bank 1993).

The question is: how have these East Asian economies been able to achieve faster industrial growth by taking advantage of the third globalization wave than other developing regions? Our village study has shown that East Laguna Village and its surroundings were able to capture a fair share of the global demand for labour-intensive manufactures, partly because of public investment in transportation and communication infrastructure as well as industrial extension activities. Another major factor would be the increased school education among villagers. The same would have been the case among all the high-performing economies in East Asia.

Indeed, the current globalization wave has created a great opportunity for rural communities in developing economies to reduce poverty and inequality. However, whether this opportunity can be captured by the rural poor depends on how wise public investments are allocated in their support for infrastructure including education and extension services. The needed support should include improvements in the efficiency of markets by building institutions to protect property rights and enforce contracts, while the government should refrain as much as possible from direct intervention into markets.

A major hypothesis suggested but not confirmed by this village study is that technological progress in agriculture as represented by the green revolution might have provided a basis for the remarkable success of labour-intensive manufacturing in East Asia. As observed from the village data, major increases in rice yields resulting from the diffusion of modern varieties were associated with equally large reductions in real rice prices received by farmers. While this adverse market effect deprived the farmers in Asian villages of much of the direct gains from new rice technology, it would have worked to reduce industrial workers' cost of living and wage rates, thereby making Asia as the attractive location for labour-intensive manufacturing. Considering this indirect effect, the success of the green revolution could have been a decisive factor underlying the East Asian miracle as compared to the economic growth and poverty reduction performance in other developing regions, especially Africa. This hypothesis—as well as many others—needs to be confirmed by studies larger than the micro village study as reported in this paper.

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