

**DYNAMICS OF RURAL DEVELOPMENT:  
LINKAGES, POVERTY,  
AND INCOME DISTRIBUTION**

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# DYNAMICS OF RURAL DEVELOPMENT LINKAGES, POVERTY, AND INCOME DISTRIBUTION\*

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## I. INTRODUCTION

Rapid increases in agricultural productivity have been viewed a superior strategy in substantially reducing poverty and achieving rapid overall economic growth (Adelman 1984; Mellor 1986; Bautista 1988). Such increases expand employment opportunities and incomes of rural households which comprise in the Philippines nearly two-thirds of its population. The growth in agricultural productivity stimulates nonagricultural activities in industries supplying inputs to agriculture (i.e., backward production linkage) as well as in industries depending on agriculture for raw materials (i.e., forward production linkage).

More importantly, the increases in incomes of farm households enlarge demand for consumer goods and services produced outside the farm (i.e., consumption linkage).<sup>1</sup> The supply of these goods and services generates employment which, at the early stage of economic development, tends to concentrate in rural areas. The kinds of goods and services demanded are typically produced by small labor-intensive firms. They are, for example, focused on such sectors as light transportation, restaurants, trading, housing and residential construction, health, personal services, and entertainment. These sectors, in turn, generate their own demand and

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1. Consumption linkages can account for over 80 percent of indirect income increments associated with technological advance (Haggblade and Hazell 1989).

supply linkages with other sectors of the economy, thereby setting in motion a sequence of employment and income multiplier effects on the farm rural, regional, and national economy

In this view, for many low income countries, rapid agricultural growth represents an efficient path or road to industrialization (Mellor 1986) as well as a superior strategy *vis á vis* food security concerns of least developed countries (Adelman and Berck 1991)

The above depiction of a dynamic rural economy fuelled by agricultural growth draws empirical support from development records. In East Asia (particularly Japan and Taiwan), the relatively fast and sustained growth of agriculture occurred hand in hand with expansion of rural nonfarm employment and incomes, reduction in rural poverty, and sustained increases in overall economic activity. The same association can be found in recent development records in Thailand, Malaysia, Ivory Coast, the Punjabs of India and Pakistan, and to some extent, other parts of South Asia. The Philippines presents a contrasting picture. Its agricultural growth proceeded at an unusually fast pace during 1965-80 (see section 4 below). However, the ranks of the unemployed and underemployed continued to swell, real wages persistently fell, the incidence of rural poverty remained high and seemed substantially unaffected by the rapid agricultural growth then taking place. Distribution of income became less egalitarian. Overall economic growth also faltered. What went wrong?

The present paper provides a survey of selected topics and issues in the economics of rural development. This includes concepts and empirical regularities concerning rural growth linkages, poverty, and income distribution, determinants of income source diversification, and demand and supply factors constraining rural growth linkages in the Philippines. The aim is to draw implications for public policy and further research on the dynamics of rural development.

## II LINKAGES: THEORETICAL CONSIDERATIONS

The literature on the determinants of rural growth has evolved largely from the seminal paper of Hymer and Resnick (1969) on an agrarian economy where rural households confront a set of alternatives including traditional nonagricultural activities producing so-called Z goods. Generally labor-intensive, these activities, inside the household or small-scale service and artisan establishments in the village, include processing of food and fuels, spinning, weaving of textiles, as well as investment in house building, fence repairing, and services such as recreation, protection, transport, and distribution.<sup>2</sup> The opening of profitable trade opportunities (i.e., the linking of the rural economy with the world economy) induces a reallocation of rural labor from production of inferior, nontraded Z goods to cash (export) crops. The export earnings from cash crops enable the economy to import manufactured goods, deemed to be of higher quality and fulfill a wider range of needs than Z goods. The production of food for domestic consumption is assumed bereft of any potential for dynamic growth and broadly unaffected by trade. An improvement in the terms of trade (i.e., an increase in price of the export crop relative to that of the manufactured import) permits an expansion of cash crop activities, the increase in income

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2 Hymer and Resnick (1969: 493)

in terms of manufactured imports in turn raises consumption of manufactured goods and further reduces consumption of inferior Z-goods. Thus, rural nonfarm activities tend to shrink and become extinct in the course of economic development.<sup>3</sup> Resnick (1971) observes the pattern of continuous shrinkage by the Z-goods sector in the Philippines, Burma, and Thailand during the early part of this century.

The dark shadow cast over rural industries by the Hymer-Resnick model perhaps partly explains the neglect of the rural nonfarm sector in the economic development literature (Fabella 1990). This is reinforced by the continued popularity of dual-economy type models (e.g., Lewis 1954; Fei and Ranis 1964) that virtually assumed away the heterogeneity of rural (as well as urban) economy. The rural nonfarm sector is subsumed in the backward sector, usually identified with agriculture. In these models, the technologically stagnant agriculture sector is viewed as the passive supplier of surplus fuelling the more dynamic sector commonly associated with the urban or industrial sector.

In the empirical strand of the economic development literature, an increasing number of observations pointed out the growth of rural nonfarm activities in dynamically growing economies (Anderson and Leiserson 1980; Shand 1986; Islam 1987; Liedholm and Kilby 1989). This can be inferred from the development experience of East Asian economies, particularly Japan and Taiwan, with nonfarm income taking an increasing proportion of the total income of farm households as industrialization proceeds apace (Oshima 1985). Moreover, the Z-goods retain their importance in the rural economy or became dominant in the course of industrialization.

What strains the Hymer-Resnick model to its conclusions, contrary to the abovementioned observations, are the model's restrictive assumptions (Ranis and Stewart 1990).

First, assuming the Z-goods sector as broadly homogeneous, composed of *traditional* nonagricultural activities carried out in the household or village, glosses over the enormous heterogeneity of these goods, both in terms of labor intensity and demand responsiveness to changes in household income (Ranis and Stewart 1990; Fabella 1986). At one end of the spectrum are the "traditional household products and processes" (e.g., handloom weaving) which probably shrink in the course of rural income growth. At the other end are "nontraditional or modernizing rural nonagricultural products and processes" (e.g., mechanized rice mills and garment-making for exports) which may respond positively to the growth in rural income. The latter, as demonstrated by the East Asian experience, may likely respond to productivity-raising technological change, have higher quality, and be located in rural towns rather than in households or villages. The growth in rural incomes stimulates growth in these goods and can possibly substitute for imported manufactured goods.

Second, the treatment of domestically oriented food production sector as having no potential for dynamic growth implies its weak growth linkages. No compelling reason can be

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3. Extending the idea of Z-goods to a two-sector, small, open-economy model, Bautista (1971) showed shrinkage of the Z-goods sector does not depend on inferiority of Z-goods.

found in support of this treatment. On the contrary, the development record of East Asia and many developing Asian countries demonstrates that relative land scarcity can lead to land-saving, yield-increasing biological innovations (Hayami and Ruttan 1985). In areas where this occurred and their macroeconomic environment favored broad-based growth, such change in the food sector was accompanied by a dynamic rural nonfarm economy.

Third, the Hymer-Resnick model glosses over basic structural features (initial conditions) of post-colonial economies--the distribution of operational landholdings, spatial concentration of industries, rural infrastructure, and other factors. A rapidly growing agriculture taking place in an economy with highly skewed size-distribution of agricultural landholdings hardly draws hopes for strong linkages with the rural nonfarm sector. The consumption pattern of large farmers most likely gears on goods with high import (or urban) content. Similarly, where the (public) provision of infrastructure is biased in urban centers or where public policies create incentives for large-scale, capital-intensive, urban-based industries at the expense of small, rural industries, technological change in agriculture (whether in domestically oriented food sector or in cash crop export sector) is not expected to have a strong stimulative effect on the growth of the rural nonfarm economy. In these cases, rural nonfarm activities can shrink, but not because of the inherent tendency of the development process to be Z-immiserizing.

Ranis and Stewart (1990) demonstrate compellingly that relaxing the restrictive assumptions of the Hymer-Resnick model--especially allowing for dynamic domestic food production and the modernization of the Z-goods sector--will yield alternative scenarios different from said model. Their demonstration puts in perspective how certain macroeconomic and sectoral policies can likely influence the pattern and composition of rural nonfarm activities, and hence, the strength of linkages of agricultural growth on the local, regional, and national economy.

Analysis of the impact of economywide and sectoral policies on Philippine agriculture has increasingly received attention in recent years (David 1983; Bautista 1987; Intal and Power 1990). Substantial research gaps exist, however, in certain areas. Most glaring is the scant attention on the influence of public policies on the distribution of income gains from agricultural productivity increases and the response of domestic supply--especially rural supply--to growth in domestic demand.

### III. ASPECTS OF INCOME SOURCE DIVERSIFICATION

The absolute and relative size of rural nonfarm employment (RNE) in low-income economies varies substantially, even assuming away data comparability problems owing to, among other things, differing definition of "rural" by various national census and statistics organizations. This hardly evokes surprise, considering marked differences exist in their institutional setting, economic structure, geo-physical location, and policy environment. Nonetheless, available estimates of RNE reveal that nearly one-fourth of the total rural employment in Asia are found in nonfarm enterprises (NFEs) (Haggblade and Hazell 1989). If rural towns are included, NFE's share increases appreciably, rising to slightly more than one-third. The estimate for the Philippines appears to be in the same order of magnitude (Fabella

1986). Moreover, the share of NFE remains fairly robust against seasonal change, suggesting rural nonfarm activities are largely complementary rather than competitive with agriculture.

The growth of the modernizing rural sector has, however, been unusually slow in the Philippines. Rural manufacturing industries, the hub of this sector, almost stagnated, even in 1965-80 when rapid agricultural growth took place (see section 4). This sector grew at a mere 0.6 percent per annum between 1967 and 1975 (Ranis and Stewart 1990). The growth of the urban manufacturing sector was a bit higher, 1.4 percent per annum. In contrast, when Taiwan was in the same stage of economic development rural manufacturing industries grew not only substantially faster (about 10 percent annually) but also more brisk in pace than the growth of urban manufacturing industries. The rural growth in the latter country successfully transformed rural nonfarm activities from traditional, low-productivity to modern, high-productivity Z-industries.

Estimates of the share of nonfarm incomes in total rural household incomes are also high. Various rounds of the Family Income and Expenditures Survey (FIES) show that rural nonfarm incomes account for 44-55 percent of total rural household incomes. The share has fluctuated considerably, partly reflecting measurement problems in the FIES data. In contrast, the rural industrialization experiences of Japan and Taiwan saw a consistently rising share of rural nonfarm incomes in farm household incomes.

Significantly, rural households--even if poor and/or located in poor-resource regions--do not always have farming as their main occupation. Even if they do, they have in addition a variety of off-farm and nonagricultural sources of supplementary incomes.<sup>4</sup> Among farm households, off-farm and nonagricultural incomes account for 20 percent of total household incomes (Table 1). Households headed by landless farm workers--the poorest of the poor--have several income sources. In rice, corn, sugarcane, and coconut farming, incomes obtained by these households from sources other than farm wages represent 30-40 percent of their household incomes. This may be partly explained by the need of landless workers (and the small farmer operators) to augment their farm incomes. The diversity of income sources may be linked to their attitude toward risk (e.g., in attempting to maintain food security via their off-farm income) as well as economic incentives (e.g., productivity in off-farm production), households' preferences and opportunity costs. An association is likely between the intensity of poverty and the share of off-farm income in the total household income of the poor. In certain village surveys in South Asia, the incidence of malnutrition among landless and small owner-cultivators is found to increase with the share of off-farm income in total household income (von Braun and Pandya-Lorch 1991: 35).

The formal characterization of the determinants of household income diversification in rural areas is a recent development in applied economic research. To date, the most useful approach to explaining income diversification is the explicit modelling of agricultural households

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4. The Philippine nonfarm rural households represent about one-third of total rural households, and account for nearly one-fifth of total rural poverty (Balisacan 1991d). Both incidence and intensity of poverty are, however, slightly lower for nonfarm rural households than for their farm counterparts.

Table 1  
 POVERTY INCIDENCE AND SOURCES OF INCOME OF FARM HOUSEHOLDS, PHILIPPINES  
 (In Percent)

	Poverty Incidence		Sources of Income					Total
	Head- Count a/	Poverty Gap b/	Farming	Farm Wages	Nonfarm Wages	Sustenance Activities	Other Sources	
Rice Farmers	66.21	26.00	70.81	5.72	4.03	9.61	9.84	100.00
Corn Farmers	83.49	41.00	69.08	7.72	2.12	12.48	8.61	100.00
Sugarcane Farmers	60.73	18.00	75.93	10.44	4.56	6.05	3.03	100.00
Other Crop Farmers	84.40	36.00	65.84	7.65	2.57	12.12	11.81	100.00
Coconut Farmers	75.46	31.00	67.76	8.09	2.66	10.27	11.21	100.00
Fruit Tree Farmers	56.29	15.00	57.30	19.68	0.93	8.60	13.50	100.00
Livestock and Poultry	61.38	21.00	70.40	4.09	3.18	7.48	14.85	100.00
Other Farmers	73.04	28.00	76.86	1.54	7.00	7.56	7.04	100.00
Rice and Corn Workers	81.07	36.00	8.76	63.75	3.93	13.32	10.24	100.00
Sugarcane Farm Workers	93.81	41.00	4.24	70.34	2.99	14.04	8.40	100.00
Other Crop Farm Workers	84.69	36.00	9.74	54.89	6.29	11.99	17.08	100.00
Coconut Farm Workers	83.70	35.00	11.50	62.89	5.64	9.79	10.18	100.00
Livestock and Poultry Workers	62.69	21.00	12.02	66.20	5.47	6.90	9.41	100.00
Other Crop & Animal Husbandry	51.42	18.00	18.83	62.18	3.47	10.22	5.29	100.00
Forestry workers	82.60	33.00	58.83	20.96	1.96	7.26	10.98	100.00
Fishermen	76.70	31.00	52.86	27.39	2.27	6.87	10.60	100.00
Other Occupation	61.74	22.00	5.65	77.11	1.83	6.47	8.94	100.00
All Agricultural Households	72.86	30.13	50.33	27.05	2.94	9.63	9.77	100.00

Source: Balisacan (1991b). Basic data based on the 1985 Family Income and Expenditure Survey of the National Statistics Office.

a/ Proportionate number of households with incomes below poverty line.

b/ Average of the income shortfall (expressed in proportion to the poverty line) over the whole population of the group.



as both producers and consumers.<sup>5</sup> A basic component of this type of models describes the household's decision concerning allocation of resources, particularly time, among home production (i.e., the Z-goods in the Hymer-Resnick sense), farm production for sale (commercial agriculture), and off-farm activities, including household members' participation in the labor market. The underlying causal determinants of the household resource allocation include prices and wages, technology in farm and off-farm production, objective risk and the household's behavior to risk, and the household's tastes and habits influencing its preference for goods (including leisure) and services, both home and market produced.

Consider Figure 1, a Beckerian time allocation model of an agricultural household (von Braun, de Haen and Blanken 1991). The vertical axis is a composite home or Z-good (either food, nonfood, or both); the horizontal axis measures the working time, with the remainder of the full-time capacity being leisure. Curve OH is the production function for home goods. Curve OC is the combined production function of the household, where agricultural production is added on to home goods production. Line dd reflects the opportunities offered by the labor market, i.e., the market wage expressed in terms of the composite good.<sup>6</sup> The household's indifference curve for the composite good and leisure is given by curve u. Given the constraints on production technology, household preferences, and market participation opportunities, the household's optimal allocation of time is  $OL_0$  for home goods production,  $L_0L_1$  for commercial agriculture,  $L_1L_2$  for off-farm labor, and  $O'L_2$  for leisure. Total household consumption of the composite good is  $L_2E$ . Note that the solution to this optimization problem is characterized by equality of the wage rate and marginal productivity of time in all activities inside and outside the farm.

With this simple model, it is relatively easy to trace the effect of a change in market opportunities (reflected in prices), technological possibilities, and resource endowments. An increase in the wage will, for example, likely reduce the absolute time for home goods production. Whether the *absolute* time allocated to off-farm labor increases or decreases depends on the strength of the income effect *vis-à-vis* the substitution effect. However, at low income levels, it is unlikely that the income effect will dominate the substitution effect. There is ample evidence in the empirical literature showing that in poor agrarian societies, especially among the poorest households, the labor supply response to wage is positive (Singh *et al.* 1986b; Rosenzweig 1988). Although studies of time allocation in rural Philippines are scanty, the available evidence likewise indicates that rural household labor supply tends to be positively related with wage (Evenson and Roumasset 1986; Haddad and Bouis 1991).

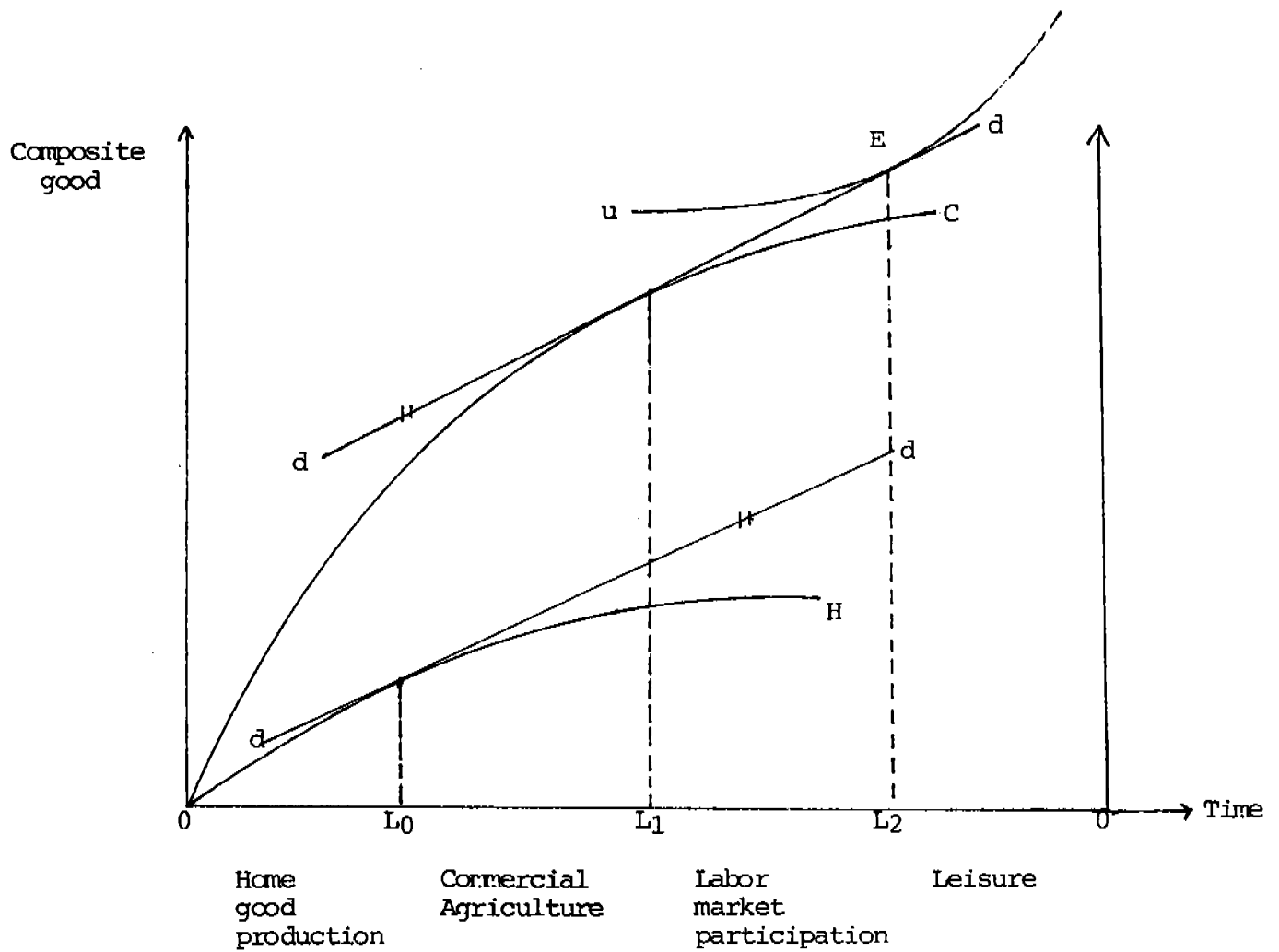
Similarly, technological change in agriculture shifts up the household production function and thus tends to increase time use in farm production for sale and decrease participation in the labor market. To the extent curve OH is unaffected, time use in home goods production remains constant. On the other hand, if the increase in productivity occurs in the home goods

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5. See Singh *et al.* (1986a) for a collection of useful approaches to agricultural household modelling.

6. It is assumed the composite good can be produced at home or purchased in the market. Purchased goods may not be identical with home produced goods, but they are assumed to be close substitutes to one another. For an application of the Beckerian model of time allocation, see Evenson (1978) and von Braun *et al.* (1991).

Figure 1  
TIME ALLOCATION OF AN AGRICULTURAL HOUSEHOLD



production, the home goods production function shifts up (and hence also the household production function), thereby increasing time use in home goods production and decreasing off-farm labor market participation.

Increases in productivity can be brought about by (public and private) investments in research and extension, infrastructure, human capital formation, and institutional development (including financial market development). Both the level and the type of investments partly determine the relative changes in marginal productivities of time in various farm and off-farm activities. Moreover, these investments--and relevant policies--influence the degree to which the various markets can interact efficiently. They are likely to reduce transaction costs and the risk associated with market access to food as well as to expand insurance, financial, and labor markets. This tends to shrink home goods production but expand commercial agriculture, services, and manufacturing. Market development provides incentives for households to exploit their comparative advantages in production. Specialization is thus enhanced.

The household's resource endowment (e.g., household work force) also affects the diversity of household income sources. Large-size households operating small farms--as when population pressure on limited land is intense and/or access to operational holdings of productive land is not broadly based--tend to engage in off-farm activities to supplement farm income. For these households, the expansion of labor market opportunities directly enhance economic welfare. The pressure to diversify their income source is even stronger if the household faces--and is averse to--production (and/or market) risk with respect to basic sustenance.

The demographic characteristics of the household (size, and age and sex of household members) are another aspect of income source diversification. It is widely known that intra-household division of labor is not uniform. This is likely because household members have different opportunity costs of time; specialization within the household is thus expected. For example, household members with the lowest opportunity cost of time tend to engage in subsistence agriculture, while those with high opportunity cost of time tend towards off-farm activities, especially outside of agriculture. Unfortunately, the simple model presented above disregards the variation in opportunities for different members of the household. It assumes that all members face the same market wage.

The rice belt of Laguna illustrates the major forces of income source diversification at work. The province, known as the "heartland of the green revolution," experienced dramatic social and economic changes over the past two decades: intense population pressure resulting in continued reduction in farm land area per villager; rapid diffusion of high-yielding rice varieties; and penetration of urban economic activities, resulting in productive employment opportunities for villagers.

Table 2 drawn from Hayami *et al.* (1989), shows longitudinal data on income sources of households in a Laguna village. At the height of the green revolution (early 1970s), incomes from farm and nonfarm wage employment, nonfarm enterprises, and sustenance activities comprised a greater proportion of household income for small farmers than those for large farmers. The green revolution expanded labor utilization, particularly in crop establishment, crop care, and post-harvest operations (Roumasset and Smith 1981; Herdt 1987; Otsuka *et al.*

Table 2  
 PERCENTAGE COMPOSITION OF HOUSEHOLD INCOME BY SOURCE  
 IN THE EAST LAGUNA VILLAGE, 1974 AND 1987

	Farmer					
	2 ha & above		Below 2 ha		Landless Workers	
	1974	1987	1974	1987	1974	1987
Total	100.0	100.0	100.0	100.0	100.0	100.0
Self-employed:						
Rice	84.5	44.3	66.5	38.7	0.0	0.0
Others	6.9	8.8	18.0	10.2	25.8	4.8
Nonfarm enterprise	3.1	5.0	5.9	27.0	8.2	16.0
Commerce a/	2.7	2.9	4.3	20.6	8.2	12.7
Transport b/	0.4	2.1	1.2	5.0	0.0	2.5
Manufacture c/	0.0	0.0	0.4	1.4	0.0	0.8
Hired wage earning						
Farm work	1.8	8.8	8.0	12.8	58.8	45.9
Nonfarm	3.7	19.0	1.6	8.0	4.5	29.0
Casual work	0.0	1.2	1.6	3.7	4.5	14.9
Salaried	3.7	17.8	0.0	4.3	0.0	14.1
Grant d/	0.0	14.1	0.0	3.3	2.7	4.3

a/ Sari-sari stores and vending/marketing.

b/ Tricycles.

c/ Rice milling, dress and handicraft processing.

d/ Includes remittance.

Source: Hayami et al. (1989).

1990), although the expansion was not enough to offset the wage-depressing effect of the continued increase in the supply of landless workers. Meanwhile, the penetration of urban economic activities in the province provided nonfarm earning opportunities for small farm households, especially landless households. Large farmers' income sources likewise became less dependent on self-employment in farming as their relatively better educated household members moved to nonfarm wage employment.

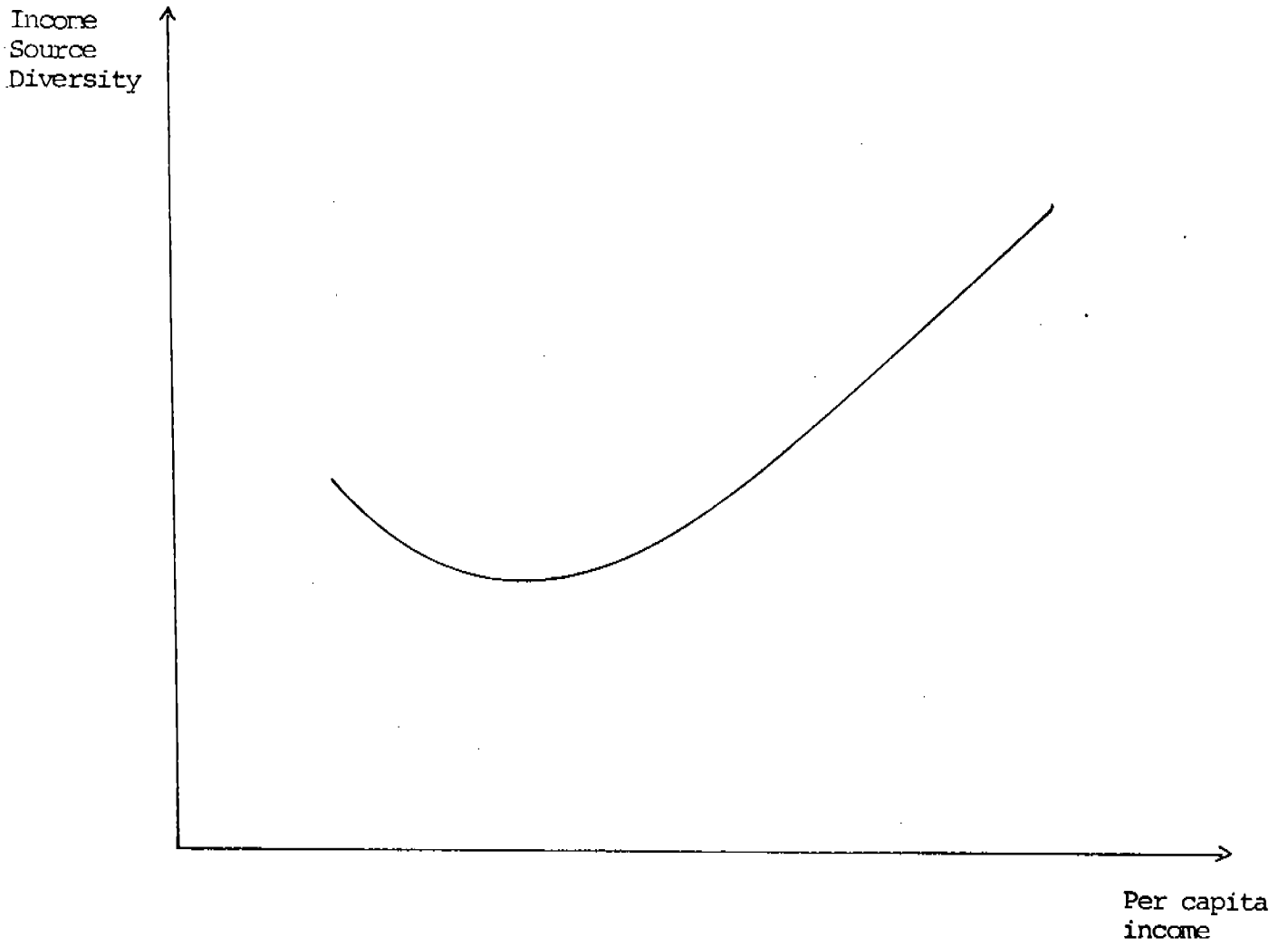
The observations above suggest that, in poor resource (unfavorable) areas where production technology is stagnant, population pressure on land intense, and per capita income at subsistence levels, risk aversion may dominate the household's choice *vis-à-vis* resource allocation (Binswanger and Rozensweig 1986; Hayami and Ruttan 1985). The pressure to augment income from the main crop (in particular, staple crops) with off-farm and other farm activities seems to be strong. As technological change takes place in agriculture--partly induced by population pressure--and the forces of rural development reduce transaction costs, income gains from specialization drive households to exploit their comparative advantages. The diversity of income sources may thus initially fall. As technological change continues and infrastructure development reduces transaction costs and risks associated with access to basic needs, the diversification of income is likely to rise with per capita income. This suggests that a likely pattern of income source diversification in a dynamically growing rural economy is J-shaped, as that shown in Figure 2.

The transformation of the rural economies of Japan and Taiwan depicted a fall followed by a consistent rise, in the share of rural nonfarm incomes in total household incomes (Liedholm and Kilby 1989). Cross-section evidence from a limited number of developing countries (e.g., Sierra Leone, Nigeria, Thailand, and Malaysia) also shows that the share tends to fall for the lower middle ranges than those for the extreme ranges of the size distribution of household income (Liedholm and Kilby 1989; Shand 1987). The available time-series evidence on the Philippines does not support this pattern. The FIES data show a rise of this share from 45 percent in 1965 to 55 percent in 1971 and then a fall to 44 percent in 1985. The definition of "rural" in the official statistics substantially changed during this period, however. The extent to which the changes in the definition affected the observed pattern cannot be ascertained from published FIES summary tables.

Rural development literature commonly associates income source diversification with household welfare (proxied by household income or expenditure). The above discussion indicates that the relationship is not linear. High income source diversification at low income levels cannot be associated with a high standard of living! In a stagnating rural economy, the diversification reflects the poor's coping with risk associated with a specific income source. On the other hand, in a dynamically growing rural economy, diversification reflects the household members' gains from specialization (i.e., the rising portion of the J-shaped curve in Figure 2).

The above discussion has also an important implication for the picture of income inequality and poverty in rural areas. Because farm earnings tend to correlate highly with farm

Figure 2  
INCOME SOURCE DIVERSIFICATION



size holdings,<sup>7</sup> inequities in the size distribution of holding size are often associated with income inequality (and poverty) in rural areas (Hayami *et al.* 1990; Mangahas 1985; Food and Agriculture Organization 1986). Given the importance of nonfarm income earnings among small farmers,<sup>8</sup> such earnings will eliminate a substantial proportion of inequalities in distribution of farm incomes caused by inequalities in distribution of holding size. That is, from the perspective of income distribution among farm size groups, inclusion of nonfarm earnings reduces household income inequality. Such was observed in selected villages in Malaysia (Shand 1987). However, imperfections in the off-farm employment market characteristics as in a highly underdeveloped agricultural economy may limit the demand for unskilled (and skilled) labor of low-income households. In this case, the inclusion of nonfarm income earnings in farm incomes can show a deterioration in the distributional equity of total household income grouped by total income deciles.

If improvements in the size distribution of household incomes are desired, they must be through policies affecting not only operational holdings, but *more importantly*, nonfarm employment and incomes. Primary emphasis must be on raising levels of education and skills of rural workers for more productive employment outside of agriculture. Differences in level and quality of education of workers account for a substantial proportion of variation of household welfare in rural areas (Balisacan 1991c). Adequate provision of rural infrastructure (roads, electricity, communication) is likewise critical for broad-based income growth and sustained poverty alleviation. It allows domestic rural supply to respond dynamically to agricultural growth. Finally, the macroeconomic climate must support building a dynamic rural economy. Policy-induced disincentives against production (and consumption) of labor-intensive goods, particularly labor-intensive exports, and against backward integration must be removed. This allows sustained expansion of productive earning opportunities for the poor (as well as the nonpoor).

#### **IV. RAPID AGRICULTURAL GROWTH AND RURAL LINKAGES: THE PHILIPPINE EXPERIENCE**

The agricultural sector (comprising crops, livestock and poultry, fishery, and forestry) of the Philippine economy performed remarkably well during most of the post-World War II period.<sup>9</sup> The sector posted an annual average growth rate of 3.9 percent between the mid-1950s

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7. This is especially true for large differences in operational holding size. To some extent, farm earnings in small farms can be greater than those in large farms if productivity in the former is higher than the latter. There is considerable evidence for inverse relation between yield and size of operational area (Berry and Cline 1979). This relation is, however, weak if one corrects for differences in land quality (Roumasset and James 1979). Moreover, the degree of relation depends on production technology, institutional arrangements, and economic environment (Binswanger and Rosenzweig 1986). Indeed, in the Philippines, the relation was observed to be weak for commercial crops, but strong for staple crop (International Labour Office 1974: 95).

8. Anderson and Leiserson (1980) provide evidences on inverse relationship between off-farm income and size of operational holding for Pakistan, Korea, and North Thailand. The same relationship emerged for Taiwan (Ho 1979).

9. This section draws largely from Balisacan (1991a).

and the late 1980s. The growth, however, decelerated in the 1980s. While the average annual growth rate for the period 1965-80, height of the so-called Green Revolution, was substantially higher than the averages for developing Monsoon Asian countries and middle-income developing countries, and compared favorably well with those for Thailand and Indonesia, it was way below the averages for these countries in the 1980s (Table 3).

Developing countries with relatively high growth rates of agricultural value added also tend to have comparatively high GDP growth rates. This observation is, of course, not surprising, given that agriculture is a large fraction of the economy in a typical developing country. In the Philippines, the remarkably robust agricultural growth for the period 1965-80 was accompanied by a GDP growth closely matching the averages for developing Monsoon Asian countries and middle-income developing countries (Table 3).

Expansion of cultivated area (i.e., opening new lands for cultivation) provided the major source of the production growth of Philippine agriculture, at least up to 1950s. Since the closure of agricultural land frontier in the 1960s resulting from increased population pressure, the contribution of land productivity (output per hectare) growth has increasingly become the more important source of production growth. Over the last two decades, increases in yield accounted for about 80 percent of total agricultural production growth. Whereas cultivated area per farm worker declined by an annual average of 2.5 percent during the same period, yield grew by an annual average of about five percent, enabling agricultural output per farm worker to grow by about two percent annually (David *et al.* 1984). In contrast, the six decades preceding 1960s were marked by increasing cultivated area per farm worker, decreasing output per cultivated area, and virtually unchanged per capita agricultural output (Hooley 1968).

What happened to poverty during the unusually high agricultural growth period of 1965-80? According to findings in the nationwide Family Income and Expenditure Surveys for 1965 and 1971, although the incidence of rural poverty fell, the decline was minimal compared to the experience of other Asian countries (Balisacan 1991d). Accompanying the slight reduction in poverty was an increase in inequality in the size-distribution of rural household income. What happened after 1971? Unfortunately, comparable estimates of poverty incidence for any other year in 1970s are unavailable. Other indicators of economic welfare, however, suggest poverty could have not fallen, if at all, dramatically. Real wages in rural areas (as well as in urban areas), for example, persistently fell in 1970s and early 1980s (Balisacan 1991d). The decline was also pronounced in the rice sector where rapid yield growth was fuelled by diffusion of high-yielding seed varieties (HYVs) and irrigation investments. For landless workers and small farmers also depending on off-farm work for supplementary incomes, decline in real wages indicates diminution of economic well-being (Papanek 1989; Oshima 1990).

Both demand and supply considerations constrained the linkages of agricultural growth.<sup>10</sup> On the demand side, the stimulus provided by agricultural income growth on domestic nonfarm activities was weak because growth was not broadly based. This arose partly

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10. For initial attempts to explain why rapid agricultural growth during the 1965-80 period did not translate into substantial poverty reduction and overall economic growth, see Balisacan (1991a) and Bautista (1990). For a general discussion of rural growth linkages in the Philippines, see Ranis *et al.* (1990).



Table 3  
 AGRICULTURAL GROWTH IN DEVELOPING MONSOON ASIA AND MIDDLE-INCOME DEVELOPING COUNTRIES

Country	1988 Per Capita GDP (US\$)	Share of Agriculture in GDP (%)		Annual Growth Rate (%)			
				GDP		Agriculture	
				1965	1988	1965-80	1980-88
Developing Monsoon Asia	1019	39	28.8	5.4	5.5	2.3	2.9
Malaysia	2052	28	21.1	7.3	4.6		3.7
Thailand	1063	32	17.0	7.2	6.0	4.6	3.7
Indonesia	476	56	24.0	8.0	5.1	4.3	3.1
Philippines	655	26	23.0	5.9	0.1	4.6	1.8
Sri Lanka	386	28	26.0	4.0	4.3	2.7	2.7
Pakistan	320	40	26.0	5.1	6.5	3.3	4.3
India	292	44	32.0	3.6	5.2	2.5	2.3
Bangladesh	177	53	46.0	2.4	3.7	1.5	2.1
Nepal	159	65	56.0	1.9	4.7	1.1	4.4
China	342	44	33.0 a/	6.4	10.3	2.8	6.8
Burma	192 a/	35	37.0 a/	2.9 b/	5.3 c/		
Taiwan	6113	18 d/	4.8	10.3 e/	9.8 f/		
Middle-Income Developing Countries	174761 2061	20	12.0	6.1	2.9	3.6	2.7

a/ 1985    b/ 1965-73    c/ 1973-86    d/ 1970    e/ 1975-79    f/ 1986-89.

Sources: Asian Development Bank, Key Indicators of Developing Asian and Pacific Countries, July 1990.  
 World Bank, World Development Report, 1990.

from highly skewed distribution of landholdings and highly capital-intensive plantation farming and large-scale processing in the export crop sector (e.g., banana). The coexistence of numerous small peasant farms and large plantations in the Philippines was unique in Asia and somewhat resembled Latin America (Hayami *et al.* 1990). Accentuating the influence of this agrarian structure on the distribution of income gains from productivity increases was the greater availability of subsidies on credit and fertilizer and the greater access to irrigation, electricity, and roads for affluent farmers (David 1986). Because the consumption pattern of large farmers is most likely geared to goods and services with high import (or urban) content, the linkages of agricultural income growth were weak in setting in motion a sequence of employment and income multiplier effects on the farm, rural, regional, and national economy.

On the supply side, unfavorable fiscal and macroeconomic environment prevented the rural nonfarm sector from responding vigorously to agricultural income growth. Infrastructure was concentrated in Metro Manila. Generous fiscal incentives provided a window for development of export-oriented manufacturing establishments, but for the most part, "the new export sector functioned almost as export processing zone and bonded warehouse 'enclave' ... which had little interaction with, and provided little benefit to, the domestic economy except primarily through the (limited) employment of labor" (Intal and Power 1990: 42). Government interventions, especially in the 1970s and early 1980s, also tended to diminish the role of market mechanism in favor of regulations by parastatals as well as promoted a monopolistic structure in important sectors of the economy. Use of governmental functions to dispense economic privileges to some select groups close to the ruling elite was rampant.

Trade and exchange rate policies also tended to counter comparative advantage (although public pronouncements called for efficient use of scarce capital resources) by unduly promoting capital-intensive and import-substituting industries and, in the process, penalizing labor-intensive exports and backward integration.<sup>11</sup> While these policies led to an initial spurt in overall economic growth (such as during the "easy import substitution" period in early 1950s), they subsequently constrained the country's capacity to earn foreign exchange required to import capital goods for continued growth. The exchange rate tended to be severely overvalued, thereby depressing relative prices of labor-intensive tradable goods, encouraged movement of scarce resources towards less-labor intensive nontradable or home goods production, and thus put a downward pressure on real wages.

Persistent decline in real wages and rise in per capita income were rather unique in the Philippines. In the postwar experience of Asia, particularly Taiwan and South Korea, growth was accompanied by rising real wages in agriculture and industry, even when there was considerable unemployment.<sup>12</sup> Not that these countries had effective legislation on minimum wages; labor productivity growth and expansion of employment accompanied growth of GDP per capita in these countries. Government policies in the Philippines, on the other hand, tended

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11. This is a common theme among scholars of Philippine economic development. See, for example, Power and Sicat (1971), de Dios (1984), Bautista (1987), and Montes and Sakai (1989).

12. See Oshima *et al.* (1986).

to undermine both productivity growth and generation of productive employment opportunities for its expanding labor force.

## V. CONCLUSIONS AND DIRECTIONS FOR FURTHER RESEARCH

Pessimism surrounding the potential of rural nonfarm enterprises (or activities) in contributing to substantial reduction of rural poverty and improvement in size distribution of income has been misplaced. Both recent theoretical constructs and empirical observations have demonstrated that the sustained expansion of these enterprises--partly induced by increases in agricultural productivity--represents the long-term solution to rural poverty.

Rural nonfarm incomes represent a sizeable proportion of total household incomes, even among the poorest of the rural households. An exclusive focus on land reform as a solution to rural poverty is thus misdirected. Land reform must be complemented by policies affecting nonfarm employment and incomes. The poor's access to human capital development, technology, infrastructure, and credit, together with creation of a favorable macroeconomic environment for sustained economic growth, must be in the forefront in the agenda for policy reform.

The dynamics of rural development is complex. Due to its complexity and, more importantly, relative neglect in the economic development literature, much remains to be done and learned. It is particularly useful to further inquire into why rapid agricultural growth in the Philippines in the second half of the 1960s and in the 1970s failed to result in substantial reduction in poverty and sustained overall economic growth. Future research must look closely into expenditure patterns of rural households, incremental demand for nonagricultural goods generated by the increase in agricultural incomes, and domestic supply response--particularly the rural supply response--to that demand. Research should move beyond simply describing characteristics and composition of rural employment and incomes to include as well a systematic assessment of impact of various factors, including public policies, on rural income growth, income distribution and poverty, and overall economic growth.

Economic research on income source diversification in rural areas is likewise in its infancy. Applied models of agricultural households must be extended in ways allowing for the diversity of opportunities faced by household members as well as the influence of the physical environment--especially those which can be affected by public policy--on household choice. A systematic analysis of available household income and expenditure data, using existing models, may likely yield significant results with far-reaching implications for policy and further insightful theory building.

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