

RURAL GROWTH LINKAGES, POVERTY, AND INCOME DISTRIBUTION

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The paper provides a survey of selected topics and issues in the economics of rural development, namely: 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 survey draws implications for public policy and further research on the economics of agriculture and rural development.

Introduction

Rapid increases in agricultural productivity have been viewed to be a superior strategy in substantially reducing poverty and in achieving rapid overall economic growth (Adelman, 1984; Mellor, 1986; Bautista, 1988). The view is simply that these increases induce an expansion of the employment opportunities and incomes of rural households which, in the Philippine context, comprise nearly two-thirds of the 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 induce an expansion of demand for consumer goods and services produced outside the farm (i.e., consumption linkage).¹ The supply of these goods and services generates employment which, at the early stage of economic development, tends to be predominantly concentrated in rural areas. The kinds of goods and services demanded are typically produced by small labor-intensive enterprises. 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 supply linkages with the other sectors of the economy, thereby setting in motion a

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

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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). Moreover, it is seen as a superior strategy in addressing the food security concerns of the least-developed countries (Adelman and Berck, 1991).

The above depiction of a dynamic rural economy fuelled by agricultural growth has its factual basis in development records. In East Asia (particularly Japan and Taiwan), the relatively fast and sustained growth of agriculture was accompanied by an expansion of rural nonfarm employment and incomes, reduction in rural poverty, and sustained increases in overall economic activity. The same association could 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. In contrast, while agricultural growth was unusually rapid in the Philippines during 1965-80 (see section 4 below), the ranks of the unemployed and the underemployed continued to swell, real wages persistently fell, the incidence of rural poverty remained high and seemed to have not been substantially influenced by the rapid agricultural growth that was taking place, and the distribution of income became less egalitarian. Overall economic growth also faltered. What had gone wrong?

The present paper provides a survey of selected topics and issues in the economics of rural development, namely: 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. While the focus of the survey is on studies using Philippine data, an attempt is made to cover a fairly general survey of the literature. The aim is to draw implications for public policy and for further research on the dynamics of rural development.

2. Linkages: Theoretical Considerations

The literature on the determinants of rural growth has evolved largely from the seminal paper of Hymer and Resnick (1969). They considered an agrarian economy in which the set of alternatives facing the rural households includes traditional nonagricultural activities producing so-called Z-goods. Generally labor-intensive, these activities, whether carried on in the household or in 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" (Hymer and Resnick, 1969, p. 493). The opening up of profitable trade opportunities (i.e., the linking of the rural economy with the world economy) induces a movement of rural labor from the production of inferior, non-traded Z-goods to the production of cash (export) crops. The export earnings from cash crops enable the economy to import manufactured goods which are assumed to be of higher quality and to fulfill a wider range of needs than Z-goods. The production of food for domestic consumption is assumed to have no potential for dynamic growth and to be 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 (measured in terms of manufactured imports) in turn raises the consumption of manufactured goods and further reduces the consumption of inferior Z-goods. There is thus a tendency for rural nonfarm activities to shrink and perhaps even to become extinct in the course of economic development.² Resnick (1971) observed that the pattern of continuous shrinkage by the Z-goods sector was evident 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 the rural (as well as the urban) economy. The rural nonfarm sector is subsumed in the backward sector that is usually identified with agriculture. In these models, the technologically stagnant agriculture sector is viewed to be the (passive) supplier of surplus fuelling the more dynamic sector that is 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, not the decline, of rural nonfarm activities in dynamically growing economies

²Extending the idea of Z-goods to a two-sector, small, open-economy model, Bautista (1971) showed that the shrinkage of the Z-goods does not depend on the inferiority of Z-goods.

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(Anderson and Leiserson, 1980; Shand, 1986; Islam, 1987; Liedholm and Kilby, 1989). This was especially so in the development experience of East Asian economies, particularly Japan and Taiwan where nonfarm income took an increasing proportion of the total income of farm households as industrialization proceeded (Oshima, 1985). Moreover, in these economies, the Z-goods either retained their importance in the rural economy or became dominant in the course of industrialization.

What drives the Hymer-Resnick conclusions which run counter to the above-mentioned observations is their model's restrictive assumptions (Ranis and Stewart, 1990). First, the assumption that the Z-goods sector is broadly homogeneous, composed of traditional nonagricultural activities carried out in the household or in the village, glosses over the enormous heterogeneity of these goods, both in terms of their labor intensity and in their 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, while at the other end are "non-traditional 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. As demonstrated by the East Asian experience, the latter are likely to respond to productivity-raising technological change, to have higher quality, and to be located in rural towns rather than in households or villages. The growth in rural incomes stimulates growth in these goods and can possibly even substitute for imported manufactured goods.

Second, the treatment of domestically oriented food production sector as having no potential for dynamic growth implies that the sector has weak growth linkages. No compelling reason could be found in support of this view. On the contrary, the development record of East Asia and many developing Asian countries demonstrates that the relative scarcity of land in these countries has led to the adoption of land-saving, yield-increasing biological innovations (Hayami and Ruttan, 1985). In areas where this occurred and where the macroeconomic environment was conducive to broad-based growth, the yield-increasing technological 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, etc. A rapidly growing agriculture taking place in

an economy with highly skewed size-distribution of agricultural landholdings is hardly expected to have strong linkages with the rural nonfarm sector. The consumption pattern of large farmers is most likely geared to those 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-scale, rural-based industries, technological change in agriculture (whether in domestically oriented food sector or in cash crop export sector) is not expected to have strong stimulative effect on the growth of the rural nonfarm economy. In these cases, rural nonfarm activities can indeed shrink, but not because of the inherent tendency of the development process to be Z-immiserizing.

Ranis and Stewart (1990) indeed 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 scenarios quite different from those of the Hymer-Resnick model. Their contention puts in perspective how certain macro- and sectoral policies can likely influence the pattern and composition of rural nonfarm activities, and hence, the strength of the 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. The most glaring of these is the little attention given to the influence of public policies on the distribution of income gains from agricultural productivity increases and on the response of domestic supply — especially rural supply — to the growth in domestic demand.

3. 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, for example, differences in the definition of “rural” given by various national census and statistics organizations. This is, of course, not surprising, considering that marked differences exist in their institutional setting, economic structure, geophysical location, and policy environment. Nonetheless, available estimates of RNE reveal that, for Asia as a whole, nearly one-fourth of the total rural employment is found in nonfarm enterprises (NFEs) (Haggblade and Hazell, 1989). If rural towns are included, NFEs’ share

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increases appreciably, rising to slightly more than one-third. The estimate for the Philippines is in the same order of magnitude (see Fabella, 1986). Moreover, the share of NFEs is fairly robust with respect to seasonal change, suggesting that (some components of) 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 during the period 1965-80 when rapid agricultural growth was taking 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, rural manufacturing industries in Taiwan during the same comparative stage of economic development grew not only substantially faster (about 10 percent annually) but also faster than the growth of its 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 significantly high. The various rounds of the Family Income and Expenditures Survey 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.

What is significant is that rural households, even if they are poor and/or located in poor-resource regions, do not always have farming as their main occupation, and even if they do, they also have a variety of off-farm and nonagricultural sources of incomes.³ Among farm households, off-farm and nonagricultural incomes account for 20 percent of total household incomes (Table 1). It is worth noting that even households headed by landless farm workers — they are among the poorest of the poor — have a variety of 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

³In the Philippines, the nonfarm rural households represent about one-third of total rural households, and they account for nearly one-fifth of the total rural poverty (Balisacan, 1991). Both the incidence and the intensity of poverty are, however, slightly lower for nonfarm rural households than for farm households.

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	5.20	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	77.86	30.13	27.05	2.94	9.63	9.77	100.00	

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

a Proportionate number of households whose incomes fall below the poverty line.

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

incomes. This is, of course, partly explained by the fact that it is the landless workers (and the small farmer operators) who are most in need of supplementing their farm incomes. It is also possible that the diversity of income sources is driven by their attitude toward risk (e.g. in attempting to maintain food security via their off-farm income) as well as by economic incentives (e.g., productivity in off-farm production) and the households' preferences and opportunity costs. (We will return to this below.) There is thus likely to be an association between the intensity of poverty and the share of off-farm income in the total household income of the poor. Indeed, in some village surveys in South Asian countries, the incidence of malnutrition among the 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, p. 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 as both producers and consumers.⁴ A basic component of this type of models describes the household's decision concerning the allocation of resources, particularly time, among home production (i.e., the Z-goods in the Hymer-Resnick sense), farm productions for sale (commercial agriculture), and off-farm activities, including the household members' participation in the labor market. The underlying causal determinants of the household resource allocation may include prices and wages, technology in farm and in off-farm production, objective risk and the household's tastes and habits which may influence 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 et al., 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, whereas 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 good⁵.

⁴See Singh, Squire and Strauss (1986a) for a collection of useful approaches to agricultural household modelling.

⁵It is assumed that the composite good can be either 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, de Haen, and Blanken (1991).

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 the equality of the wage rate and the marginal productivity of time in all activities inside and outside the farm.

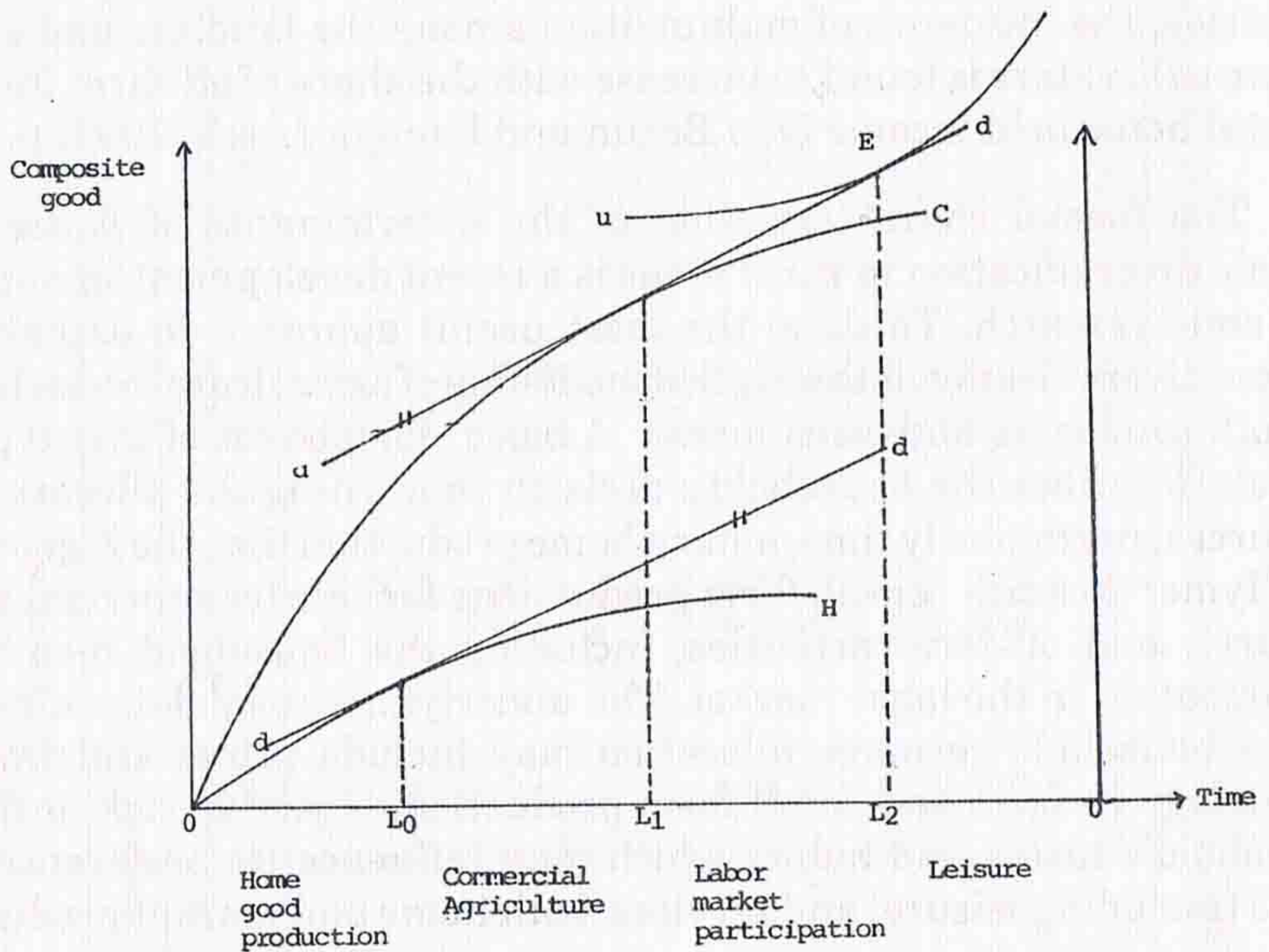


Figure 1 - Time Allocation of an Agricultural Household

With the aid of 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 allocated to home goods production. But whether the *absolute* time allocated to off-farm labor increases or decreases depends on the strength of the income effect in relation to the substitution effect. However, at very low income levels, it is very unlikely that the income effect will dominate the substitution effect. Indeed, there is ample evidence in the empirical literature showing that in poor agrarian societies, especially among the poorest

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households, the labor supply response to wage is positive (Singh, Squirre, and Strauss, 1986b; Rosenzweig, 1988). Studies of time allocation in rural Philippines are scanty, but the available evidence likewise demonstrates that rural household labor supply tends to be positively related with the wage (Evenson and Roumasset, 1986; Haddad and Bouis, 1991).

Similarly, an increase in agricultural productivity shifts up the household production function and thus tends to increase time use in farm production for sale and to decrease participation in the labor market. To the extent that 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 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 could 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 the policies that bear on them — 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 when access to operational holding of productive land is not broadly based — tend to engage in off-farm activities to supplement their farm income. For these households, the expansion of labor market opportunities directly enhances their 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 and of household members) are another aspect of income source

diversification. It is widely known that intra-household division of labor is not uniform. One reason for this is that household members have different opportunity costs of time; specialization *within* the household is thus expected. It is frequently observed, for example, that household members with the lowest opportunity cost of time tend to be engaged in subsistence agriculture, while those with high opportunity cost of time tend to be employed or engaged in off-farm activities, especially outside agriculture. Unfortunately, the simple model presented above disregards the variation in opportunities for the different members of the household. It assumes that all members of the household face the same market wage.

The rice belt of Laguna is an illustrative case of the major forces of income source diversification at work. The province, well known as the "heartland of the green revolution," experienced dramatic social and economic changes over the past two decades, namely; (i) intense population pressure which resulted in continued reduction in farm land area per villager; (ii) rapid diffusion of high-yielding rice varieties; and (iii) penetration of urban economic activities, resulting in the opening up of productive employment opportunities for the 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 diffusion 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 farmer 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, Cordova, and David, 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 non-farm 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.

What the above observations suggest is that, in resource-poor (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 in relation to resource allocation (Binswanger and Rosenzweig, 1986; Hayami and Ruttan, 1985). The pressure to augment income from the main crop (in

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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	84.45	44.3	66.5	38.7	0.0	0.0
Others	6.9	8.8	18.0	10.2	25.8	4.8
Non-farm 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	117.8	0.0	4.3	0.0	14.1
Grant ^d	0.0	14.1	0.0	3.3	2.7	4.3

^aSari-sari stores and vending/marketing.

^bTricycles

^cRice milling, dress and handicraft processing.

^dIncludes remittance.

Source: Hayami et al. (1989).

particular staple crops) with off-farm as well as other farm activities is likely to be strong. As technological change takes place in agriculture — partly induced by population pressure — and as the forces of rural development reduce transaction costs, the 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 further 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 be lower 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-service evidence on the Philippines is not supportive of 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. However, it should be noted that the definition of "rural" in the official statistics substantially changed during this period. The extent to which the changes in the definition affected the observed pattern could not be ascertained from the published FIES summary tables.

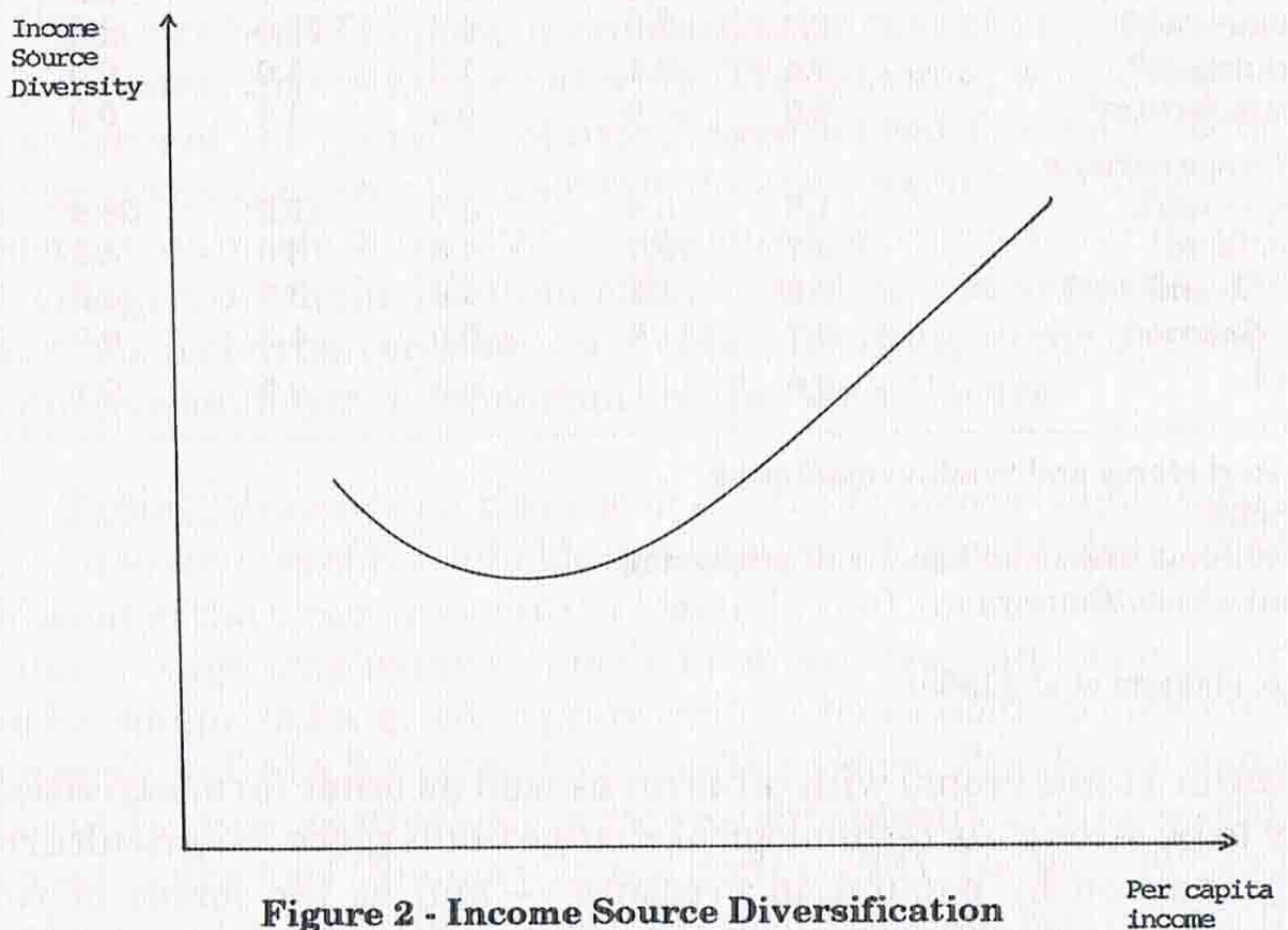


Figure 2 - Income Source Diversification

It is common in the rural development literature to associate income source diversification with household welfare (proxied by household income or expenditure). The above discussion indicates, however, that the relationship is not linear. High income source diversification at low income levels can not be associated with a high standard of living! In a stagnating rural economy, the diversification is a reflection of 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

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earnings tend to highly correlate with farm size holdings,⁶ inequities in the size distribution of holding size are often associated with income inequality (and poverty) in rural areas (Hayami, Quisumbing, and Adriano, 1990; Mangahas, 1985; FAO, 1986). But given the importance of nonfarm income earnings among small farmers,⁷ it is possible that these earnings would eliminate a substantial proportion of the inequalities in the distribution of farm incomes caused by the inequalities in the distribution of holding size. That is, from the perspective of income distribution among farm size groups, the inclusion of nonfarm earnings reduces household income inequality. Indeed, this is the observation for selected villages in Malaysia (Shand, 1987). However, where there are imperfections in the off-farm employment market characteristics — as is likely to be the case in a highly underdeveloped agricultural economy — the demand for unskilled (and skilled) labor of low-income households would be limited. In this case, it is plausible that the inclusion of nonfarm income earnings in farm incomes will cause a deterioration in the distributional equity of total household income grouped by total income deciles.

It is clear that if improvements in the size distribution of household incomes is desired, they will have to be sought through policies affecting not only operational holdings, but more importantly, nonfarm employment and incomes. Primary emphasis will have to put on raising the levels of education and skills of rural workers for more productive employment outside of agriculture. Differences in the level and quality of education of workers account for a substantial proportion of the variation of household welfare in rural areas of the Philippines (Balisacan, 1991b). 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

⁶This 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 that in the latter. There is considerable evidence for the inverse relation between yield and the 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 the relation depends on the production technology, institutional arrangements, and the economic environment (Binswanger and Rosenzweig, 1986). Indeed, in the Philippines, the relation was observed to be weak for commercial crops, but strong for the staple crop (ILO, 1974, p. 95).

⁷Anderson and Leiserson (1980) provide evidences on the inverse relationship between off-farm income and size of operational holding for Pakistan, the Republic of Korea, and North Thailand. The same relationship emerged for Taiwan (Ho, 1979).

must be conducive to the building of a dynamic rural economy. Policy-induced disincentives against the production (and consumption) of labor-intensive goods, particularly labor-intensive exports, and against backward integration will have to be removed. This allows the sustained expansion of productive earning opportunities for the poor (as well as the nonpoor).

4. 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.⁸ The sector posted an annual average growth rate of 3.9 percent between the mid-1950s and the late 1980s. The growth, however, decelerated in the 1980s. While the average annual growth rate for the period 1965-80, the height of the so-called Green Revolution, was substantially higher than the averages for the developing Monsoon Asian countries and the 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).

It is interesting to note that developing countries which have 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 Philippine case, the remarkably robust agricultural growth for the period 1965-80 was accompanied by a GDP growth that closely matched the averages for the developing Monsoon Asian countries and the middle-income developing countries (Table 3).

The expansion of cultivated area (i.e., the opening of new lands for cultivation) provided the major source of the production growth for Philippine agriculture, at least up to the 1950s. Since the closure of the 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

⁸This section draws largely from Balisacan (1991).

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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	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	22.9	3.6	2.7

^a1985 ^b1965-73 ^c1973-86 ^d1970 ^e1975-79 ^f1986-89.

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

of 2.5 percent during the same period, yield grew by an annual average of about 5 percent, enabling agricultural output per farm worker to grow by about 2 percent annually (David, Barker, and Palacpac, 1984). In contrast, the six decades preceding the 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? The nationwide Family Income and Expenditure Surveys for 1965 and 1971 show that although the incidence of rural poverty fell, the decline was minimal compared to the experience of other Asian countries (Balisacan, 1992). 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 the 1970s are not available. Other indicators of economic welfare, however, suggest that poverty could not have fallen, if at all, dramatically. Real wages in rural areas (as well as in urban areas), for example, persistently

fell in the 1970s and in the early 1980s (Balisacan, 1991). The decline was also pronounced in the rice sector where rapid yield growth was fuelled by the diffusion of high-yielding seed varieties (HYVs) and by irrigation investments. For the landless workers and for small farmers who also depend on off-farm work for supplementary incomes, the decline in real wages is indicative of deteriorating economic well-being (Papanek, 1989; Oshima, 1990).

Both demand and supply considerations constrained the linkages of agricultural growth.⁹ On the demand side, the stimulus provided by agricultural income growth on domestic nonfarm activities was weak owing to the fact that the growth was not broadly based. This arose partly from the highly skewed distribution of landholdings and the highly capital-intensive plantation farming and large-scale processing in the export crop sector (e.g., banana and plantation). Indeed, the coexistence of numerous small peasant farms and large plantations in the Philippines was unique in Asia and somewhat resembled that of Latin America (Hayami, Quisumbing, and Adriano, 1990). Accentuating the influence of this agrarian structure on the distribution of the income gains from productivity increases was the greater availability of subsidies on credit and fertilizer for the more affluent farmers as well as their greater access to irrigation, electricity, and roads (David, 1986). Because the consumption pattern of large farmers is most likely geared to those 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 the agricultural income growth. Infrastructure was highly concentrated in Metro Manila. Generous fiscal incentives provided a window for the 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, p. 42). Government interventions, especially in the 1970s and early 1980s, also tended to diminish the role of

⁹For initial attempts to explain why the rapid agricultural growth during the 1965-80 period did not translate into substantial poverty reduction and overall economic growth, see Balisacan (1991) and Bautista (1990). For a general discussion of rural growth linkages in the Philippines, see Ranis, Stewart, and Angeles-Reyes (1990).

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market mechanism in favor of regulations by parastatals as well as promoted a monopolistic structure in important sectors of the economy. The use of governmental functions to dispense economic privileges to some select group close to the ruling elite was rampant.

Trade and exchange rate policies also tended to run against the dictum of comparative advantage (although public pronouncements often called for efficient use of scarce capital resources) by unduly promoting capital-intensive, import-substituting industries and, in the process, severely penalizing labor-intensive exports and backward integration.¹⁰ While these policies led to an initial spurt in overall economic growth (such as during the "easy import substitution" period in the early part of the 1950s), they subsequently constrained the country's capacity to earn foreign exchange required for the importation of capital goods for continued growth. The exchange rate tended to be severely overvalued, thereby depressing the relative prices of labor-intensive tradable goods, encouraged the movement of scarce resources towards less-labor intensive nontradable or home goods production, and thus put a downward pressure on real wages.

It bears noting that the persistent decline in real wages, coupled with the rise in per capita income, was 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.¹¹ Not that these countries had effective legislation on minimum wages; labor productivity growth and expansion of employment accompanied the growth of GDP per capita in these countries. Government policies in the Philippines, on the other hand, tended to undermine both productivity growth and the generation of productive employment opportunities for its expanding labor force.

5. Conclusions and Directions for Further Research

The pessimism surrounding the potential of rural nonfarm enterprises (or activities) in contributing to a substantial reduction of rural poverty and to an improvement in the size distribution of income has been misplaced. Both recent theoretical constructs and empirical obser-

¹⁰Indeed, this is a common theme in the writing of serious students of Philippine economic development. See, for example, Power and Sicut (1971), de Dios (1984), Bautista (1987), and Montes and Sakai (1989).

¹¹See Oshima, de Borja and Paz (1986).

vations 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 misplaced. Land reform has to be complemented by policies affecting nonfarm employment and incomes. The poor's access to human capital development, technology, infrastructure, and credit, together with the creation of a favorable macroeconomic environment for sustained economic growth, must be in the forefront of the agenda for policy reform.

The dynamics of rural development is a complex one. And because of its complexity and, more importantly, its 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 the expenditure patterns of rural households, the incremental demand for nonagricultural goods generated by the increase in agricultural incomes, and the domestic supply response — particularly the rural supply response — to that demand. Research should move beyond simply describing the characteristics and composition of rural employment and incomes to include as well a systematic assessment of the 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 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 insightful results with far-reaching implications for policy and further theory-building.

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