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## Socioeconomic Factors and Small-Scale Farmers in Southeast Asia

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Decision making in rural farming systems is of interest to economists, sociologists, and social anthropologists, and many studies have attempted to identify which factors—ecological, social, or economic—influence decisions on a cropping system. This chapter will examine how farmers arrive at decisions and how they cope with temporal changes. Socioeconomic and political forces that influence farmers will be discussed in a multidimensional approach to decision-making analysis.

As discussed in Chapter 2, a close relationship exists between social systems and agroecosystems. Agroecosystems are influenced by household and market demands for various crops as well as culture, beliefs, customs, and economic and political systems. All of these components need to be considered simultaneously. Unfortunately, in recent centuries material goals have been pursued at the expense of natural resources and social equity.

### SUBSISTENCE VS. MARKET-ORIENTED FARMING

The main factor affecting decisions by subsistence farmers is household needs, particularly food for home consumption. Multicropping systems have served this function in the gardens in highland New Guinea (Rappaport 1971), in Java (Terra 1954), in Thailand (Pendleton 1943, Zimmerman 1937), in Ethiopia (Simoons 1965), and the Yucatan of Mexico (Smith and Cameron 1977), but their contribution to household diet varies from society to society. Rappaport (1971) found that the Tsembaga, one of several tribal groups in the central highlands of New Guinea, obtain up to 99 percent of their daily diet from horticulture. Mixed gardens also contribute a high percentage of the food (particularly vitamins and minerals) for home consumption in Javanese villages (see Chapters 6 and 14).

Market-oriented farming patterns can be influenced by markets at local, regional, national, or international levels. Cash and noncash economies, distance to markets, types or varieties of crops grown, and population

density are major determinants for commercial transactions. Decision making regarding crops and management of farm systems is influenced greatly by the degree to which farmers operate in a barter, semicash, or cash economy. The volume of trade varies from household to household; some families sell their surplus products, while others are forced to sell subsistence products because of their greater need for cash. Several studies show the strong relationship between rural production and market demands (Godfrey and Langdon 1976).

Fleuret and Fleuret (1980) emphasize that agricultural change in response to market demands and an export orientation do not correlate positively with good nutrition for the producers. Kent (1981) further says, "Instead of the peasants in poor countries producing food for their consumption, they export foodstuff to feed the people in the rich countries. Hence, amidst the land of plenty in the Third World, Southeast Asia in particular, malnutrition is a serious problem affecting the population, especially protein-caloric malnutrition among infants and pre-school children." In Thailand, protein-calorie malnutrition affects 40-60 percent of all school age children; anemia, 33 percent; and vitamin B deficiency, 45-50 percent (Bangkok Bank 1983). Percentages in Malaysia, Indonesia, and the Philippines are similar.

The alteration of farming systems from traditional and small-scale mixed cropping to plantation or monocropping appears to have been the main focus of research until recently. When agribusiness was introduced to rural areas, land use, landholdings, and farm systems were changed in many respects. Southeast Asia has numerous examples: cultivation of cassava and sugarcane in Thailand, rubber and oil palm in Malaysia, pineapple and banana in the Philippines, and coffee in Indonesia. Hansen (1979) notes:

Small-holding cultivation accounts for approximately 90 percent of all coffee production in Indonesia and covers an area of 315,000 hectares. In contrast to lagging performance in small-holder rubber and coconut cultivation, in the case of coffee, for the past ten years small-holders have rapidly expanded their cultivated area and increased per hectare yields. On the other side, however, coffee plantations, which account for the remaining 10 percent of national production, have experienced a decline in cultivated areas, and yields on the estates are much lower than those obtained in a small-holder's operation.

Consequently, mixed gardens have been replaced by cash crops that require intensive inputs into cultivation. Agricultural employment, farm management, and entire farming systems have adjusted accordingly (Feder 1981, Chan 1982).

#### CULTURAL AND SOCIAL FACTORS

Agriculture developed in Southeast Asia as early as 9,000 years ago (Solheim 1972). Besides the staple crop of rice, farmers grow coconuts, bananas, sugarcane, beans, vegetables, bamboo, sweet potatoes, and fruit trees. These crops provide not only for home consumption and cash, but

also for social and cultural needs within the family and community. The expression, "In water we have fish and in the field we have rice," is quite common among Southeast Asian peoples, illustrating that the close relationships among humans and land and crops are fundamental elements of cultural formation in the region.

#### *Culture*

In traditional societies where agriculture is the predominant occupation, culture is formed largely through relations to plants, gardens, and agricultural fields. The major function of culture is to unite social relations among members of the same society who share similar beliefs, values, and patterns of behavior. For instance, a clan group can be established around a plant totem; members believe their ancestors originated from this plant and continue to live within it. In many cases, myths and folklore about how a village was founded have direct relationships with agriculture. David (1974), for instance, examined a complex of calendrical rituals in a village in Northern Thailand and the mythology associated with agrarian rites. He found that taboos are associated with the use of natural resources: "It is *khyt* (a form of evil which results in disaster for the perpetrator), for example, to fill in a stream, pond, well, canal, or buffalo wallow, or to level a knoll, city wall, or termite mound" (David 1974). Agricultural activities have a close relationship with festivals and ritual ceremonies during the calendar year; rice, bananas, coconuts, sugarcane, fruits, and other foods often constitute offerings on these occasions.

Social systems and agroecosystems are related to the flows of energy, material, and information between them (Rambo 1982). From a sociological as well as an ecological perspective, such flows lead to a sustainable society if inputs and outputs are equal. Within a small community, for example, when a chief demands tribute from his subjects, he is well aware of the constraints that exist in the natural system and adjusts his demands accordingly. The producers must be also conscious of such limits, and myths, beliefs, and values often are based on laws of nature. Violation of such societal rules are viewed as misbehavior or taboo (Tambiah 1969, Wijewardene 1968, Pendleton 1943, Zimmerman 1937, and Ng 1970).

#### *Landholding*

Farm land is a major unit of property, status, socialization, and welfare for a family in a rural society. Each family tries to possess at least one piece of arable land even if it has to emigrate from its natal village to seek it. Keyes (1976) and Johnston (1976) studied a way people found land through opening up frontiers in Northeast and Central Thailand. Keyes wrote: "As a custom, in areas of new settlement, a homestead appears to have established the right of a person and his family to a particular piece of property. It is likely that this right must have been confirmed by successive cultivation of the land over the initial few years. Once land had been claimed and cultivated it became a territorial expression of a specific kin group." The

ownership of land is related closely to the social system. Land is the property of the female's family in Northern and Northeast Thailand and is inherited through daughters (Mizuno 1968, Keyes 1975, Demaine and Dixon 1972). In Java the wet and low gardens are owned by a female's lineage, whereas cattle holdings are owned by the male's lineage (Terra 1953a, 1953b). The pattern of land ownership has several implications as to who is likely to make decisions about which crops are grown. Management of a farm system and the division of labor are likewise related to patterns of inheritance, responsibility, and authority over the land.

#### Labor

Labor exchange predominates in traditional agricultural production (Thandee 1978), but where commercialization of agriculture has penetrated into a village community, labor exchange then becomes paid contractual labor. For example, the *bawan* harvesting system changed to *tebasan* in Java (Collier 1981), from the *hunusan* system to *gama* in the Philippines (Hayami 1978), and from *longkhaek* to *hoa-ton* in Prachinburi, Thailand (Thandee 1981). In these systems a large landowner contracts with a foreman to recruit a group of laborers, most of them landless, to work on his field. The foreman supervises and controls the employees until the job is done. Although the details are different from community to community, this system is presently becoming institutionalized in Southeast Asia.

To understand agricultural change through time, it is important to know the ways members of rural households use their labor and the division of labor. An intensive rural manpower study (Fuhs 1979) conducted in various parts of Thailand reveals that the Thai rural population is willing and able to work hard and long hours if economically gainful work is available (Table 7.1). The share of agricultural activities ranged from 51 percent to 58 percent of the total time worked, with time spent on crops and livestock differing among project areas due to farm methods and mode of livestock production, types of crops grown, and differences in nonagricultural job opportunities (Table 7.2). Chapters 3, 5, and 6 have given additional examples of how farmers distribute their labor.

#### Population

Population is a prominent variable determining multicropping systems. Population increase, the shortage of land for cultivation, and market demands lead to cultivation of marginal and forest-reserve lands causing environmental deterioration (Ruangdej 1979) and rural-to-urban migration (Klausner 1960, Textor 1961, Meinkoth 1962). Deforestation is a serious problem in Thailand: 60 percent of the total land in the kingdom was forested in 1960, but in 1973 this was reduced to 37 percent and in 1979 to 25 percent.

Population growth is generally seen as a factor limiting the potential of food production, though Boserup (1979) considers that an increase in population leads to agricultural development. Regardless of which perspective is accurate, there is no doubt that population change has a great impact on patterns of multicropping.

Table 7.1. Labor Utilization in Thai Rural Areas (hours per year)

Activity	Project Area			
	Ayutthaya (Central Thailand)	Chiang Mai (North Thailand)	Khon Kaen (Northeast Thailand)	Thung Song/ Songkhla (South Thailand)
Time available	205,800	248,200	525,000	419,900
Economically gainful activity	151,015	172,378	252,826	298,441
Domestic work	41,806	53,164	50,288	95,062
Total time worked	192,821	225,542	303,114	393,503
Percent worked of time available	93.7	90.9	57.7	93.7

Source: Fuhs (1979).

#### PATTERNS OF LAND TENURE

Karl Marx's concept of an "Asiatic mode of production" illustrates traditional patterns of land use and land tenure in archaic Asian societies (Wittfogel 1981). Marx pointed out that land often was a communal property, which any member of a community or tribe could cultivate. Enough crops were grown for home consumption, and the surplus was shared among the community. Trade in agricultural products was rare because each community was largely self-sufficient. At the rural level, each family then had a small plot of land and grew rice, raised chickens and pigs, and caught fish for family consumption. As time went by, the mode of production changed in correspondence with the increase in population, the establishment of private property, and the centralization of the state, among other things.

By 1900 this traditional self-sufficiency was rapidly disappearing as peasants in Southeast Asia were drawn into a commercialized economy geared to the production of surplus rice and other agricultural products for export. The development of agricultural commercialization, colonization, and modernization led states to establish land legislation. Such codes brought land taxes and land purchases into a context beyond the community level. Peasant communities thus were integrated into national programs.

Yano (1968) and Kemp (1981) have studied patterns of land tenure in Thailand that changed from the customary law concept of land ownership, abided by for generations, to the modernization of land law launched at the beginning of the twentieth century:

Theoretically, all land was supposed to belong to the king, the farmers being allowed to acquire land on the condition that they exercised *de facto* occupancy

Table 7.2. Percentage Distribution of Activities in Thai Rural Areas

Activity	Project Area			
	Ayutthaya (Central Thailand)	Chiang Mai (North Thailand)	Khon Kaen (Northeast Thailand)	Thung Song/ Songkhla (South Thailand)
Crops	21.8	30.6	32.8	37.9
Livestock	21.0	14.0	13.9	13.0
Agricultural support	4.4	7.1	8.6	4.6
Labor exchange	4.1	2.4	2.4	1.8
Total agricultural work	51.3	54.1	57.7	57.3
Cottage industry	9.2	9.7	13.6	0.3
Off-farm work	15.4	11.2	7.4	16.2
Total nonagricultural work	24.6	20.9	21.0	16.5
Economically gainful work	75.9	75.0	78.7	73.8
Domestic work	21.0	23.1	15.6	23.5
Illness	3.1	1.9	5.7	2.7
Total time worked and ill	100.0	100.0	100.0	100.0
Total time worked and ill as percentage of working time available	96.7	92.7	61.2	96.3

Source: Fuhs (1979).

and cultivation. This arrangement gave rise to the right to own land, which in turn led to the right to legal protection. Such a custom had long been in practice, but in 1901 King Rama V introduced the modern idea of land ownership, legally distinguishing factual occupancy from ownership, and he created a system in which no protection is given for occupancy but only for ownership (Yano 1968).

The political structure in Java also has greatly affected land ownership and taxation.

By the mid-nineteenth century, the apanage system had evolved into a complex network of power and privilege, at the base of which was the economic exploitation of the peasantry. For the *bekelship* to recover his expenditure for this position, a *bekel* often made new demands of the peasantry, taxing gardens

and fruit trees, as well as field produce. The appearance of Dutch enterprises in the last decades of the nineteenth century added an even harsher element to an already overburdened system. Beginning at this time, foreign capitalists were allowed to rent out entire appanages for their sugar, tobacco, and indigo plantations (Mahoney 1981).

### TECHNOLOGY TRANSFER

The technology transfer strategy is based on the theory that one particular technology can outperform another, the measure of performance presumably based on benefits (outputs, profits) versus costs (capital expenditures, resources depleted, energy used, implicit sacrifices). A developing country presumably can raise its level of performance by incorporating, in whole or in part, those activities constituting the superior technology. It is then a matter of identifying the superior technologies, understanding their constituent elements, developing the means to plan and promote such transfer, and comprehending and measuring the process of transfer (Solo 1972). Modern agricultural technology can boost crop production, and the diffusion of modern scientific practices has been encouraged through dissemination to the best local farmers.

International agencies and research centers such as the International Rice Research Institute and the International Maize and Wheat Improvement Center were established to further agricultural development. They attempt to promote technical knowledge and make available new and more productive inputs, such as new seed varieties, chemical fertilizers, and more effective herbicides and insecticides to find the most effective stimulus for the transformation of traditional agriculture. By the mid-1960s, however, it was realized that this strategy could not achieve sufficiently high returns because much of the technology was not appropriate for developing countries. A study on Thailand by Moerman (1968) illustrates changes brought by the introduction of modern technology, the tractor, into a village in the northern region. The work rhythm of tractor agriculture is very different from traditional plow agriculture. Except for the clearing of some kinds of land and for work at harvest time, it demands relatively little effort. But more than a labor-saving device, the tractor also creates a new relationship of farmer to land, of village to town, and of neighbor to neighbor. The cooperation and large-scale work parties are no longer common, and since cash is the major outlay for tractor agriculture, plans for future production are geared to prices and profits. As Ruttan (1972) put it, "There was a growing realization that much agricultural research and development must be conducted in biological and economic environments approximating those where the innovation will be employed."

### PUBLIC POLICY

Most countries in the Third World have become independent since the 1950s, and coupled with the decade of development led by the United

Nations in the 1960s, their governments often adopted a growth-oriented model of development. Thailand (National Identity Board 1981), Malaysia (Chee 1979), the Philippines (Rocamora 1979), and Indonesia (Hansen 1979) have tried to modernize by adopting this model.

The growth-oriented model emphasizes increased agricultural productivity for export. The leaders of these new states saw their countries as backward, traditional, and operating at a subsistence level. To break away from the subsistence system, governments accelerated agricultural development by changing the land tenure system, transferring Western technology and mechanization, introducing monocropping, and encouraging agricultural entrepreneurship. In addition, various national agricultural research institutes were established to experiment with high-yielding varieties of seeds and "improved" farming systems.

This model of development has had great impact on the socioeconomic conditions of farmers. Homegardens and traditional farming systems have been virtually neglected in development programs, while heavy subsidies and technical know-how have been channeled directly to the modern agricultural sector through extension workers. Several studies show that, after two decades of development, rich and middle-class farmers, who have better access to modern technology and command the capital to invest in their land, have gained the most benefits from these policies (Cleaver 1979). Such policies have been blamed for increasing the socioeconomic gap between rich and poor farmers, a gap that can lead to political crises.

The 1970s saw rapid social and ecological deterioration due mainly to the growth-oriented model of development (Griffin 1974). This development has led to new policies in recent years, with some countries such as China and other socialist countries adopting a radical model of development, while national development policies in other countries changed toward "reformist" or "growth-and-equity" models. These latter models concentrated on the eradication of rural poverty and the promotion of agricultural outputs of small landowners. Governments also have channeled resources to disadvantaged farmers, and the direction of agricultural research has shifted to improving traditional farm systems and identifying indigenous varieties of seeds suitable for small plots and marginal land. For example, Thailand's Fifth National Economic and Social Development Plan (1982-86) includes "the rural poverty eradication programme, and development projects using appropriate technology have been formulated . . . a development strategy has been designed so as to blend perfectly with the local culture and environments, a programme that marks a complete break with the conventional high-capital rural development strategy" (National Identity Board 1981).

Public policy concerns not only policy formulation but also implementation and evaluation. Implementation is important at the local level, because at this stage implementers interpret existing policies. The implementation process involves many interrelated components: the nature or content of policy, the political and administrative context, the beneficiary group, and

environmental constraints. In Southeast Asia as well as in Third World countries elsewhere, people are closest to government at the implementation stage, not the formulation stage. The involvement, or lack thereof, of all concerned actors in the policy implementation process greatly affects the impact of public policy on the beneficiary group.

Public policy and implementation have direct impacts on agroecosystems, farming systems, and decision making of farmers. The delivery of subsidies, technical and chemical inputs, as well as extension services, have generated changes in agricultural practices and, at times, have fostered resistance from farm level communities. At present, the rate of government intervention in rural development, and agricultural development in particular, is greater than ever.

A number of questions challenge future research on this topic. One may examine the relationship between the world capitalist system and multicropping systems at the village level. What is the impact of international trade on decision making of peasants?

At the national level, several questions may be asked. What is the content of public policy? If the government emphasizes a policy of economic development, who will benefit the most? What is the political process at the national level that conditions policy formulation? Future studies should explore modes of implementation and administrative organizations. What are the politics of government agencies that implement agricultural policy? What are the conflicts of interests within the implementation process?

A study of traditional agriculture may contribute valuable knowledge regarding the successes and failures of present public policies. Do rural development policies include ecological considerations? How can alternative policies be formulated that are ecologically sound and can be implemented in the present sociopolitical context at local, national, and international levels?

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