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RESEARCH ON AGRICULTURAL DEVELOPMENT IN SOUTHEAST ASIA

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The substance of my remarks can be summarized as follows: First, much of the work by Southeast Asian agricultural economists has tended to be of a descriptive or fact-finding nature. Second, much of the research effort by U.S. and Western agricultural economists working in Southeast Asia has been limited to studying the functioning of the economic mechanism but has taken values and institutions as given. Third, much of the published research by U.S. and Western agricultural economists on the problems of agricultural development in early-stage agriculture has been of a theoretical and model-building variety with little empirical testing. Fourth, the largest deficiency in all research on the development problems of early-stage agriculture is the lack of studies on the influence of values, attitudes and motivations of early-stage farmers upon their goals of production, decision-making and receptivity to change and innovation. The second greatest deficiency has been the wide gap between the "model-builders" and the "empiricists," between conceptualization on the one hand and fact-finding and hypothesis testing on the other.

PAST AND CURRENT RESEARCH

Three major groups of agricultural economists have been involved in research on the problems of agricultural development in Southeast Asia:[1] (a) the agricultural economists of Southeast Asia, (b) U.S. and Western agricultural economists working in Southeast Asia, and (c) U.S. and Western agricultural economists working on the problems of Southeast Asia and early-stage agriculture generally, but primarily resident in their own countries. Two other groups of researchers should also be mentioned: other Asians conducting research on Southeast Asia and the members of international organizations.

Past and current research on the problems of agricultural development in early-stage agriculture tend to fall into two classes:

(1) Research aimed at discovering and analyzing the deficient, inefficient or weak aspects in the current operation of the economic processes --- consumption, production, distribution, capital formation, etc.,--- but taking existing social values and economic institutions as given.

(2) Research aimed at finding out and studying the detrimental features of existing social values and economic institutions, with a view to altering or removing them to improve the functioning of the economic mechanism.

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[1]Southeast Asia is usually defined to include Burma, Laos, Cambodia, Thailand, Vietnam, Philippines, Indonesia and Malaysia (Malaya, Singapore, Sabah and Sarawak).

Both classes can be further subdivided into research efforts which are (a) descriptive or fact-finding, (b) analytical or testing, and (c) conceptual, theoretical or model-building. As with any taxonomy, the classes and subclasses sometimes blur, but I believe the classifications are generally valid.

Research efforts aimed at the operation of the economic mechanism, but taking values and institutions as given, represent the "traditional" type of agricultural economics research: farm management studies, land use and tenancy surveys, cost enterprise studies, marketing analyses, credit sources and utilization, demand and supply estimates. Here the goal is to understand the present functioning of the economic mechanism with the hope of improving it. The second category of research is specifically aimed at the social values and economic institutions and their effects upon the functioning of the economic mechanism. In the latter category would be found studies which are sometimes called institutional or interdisciplinary: the role of education, land reform, receptivity to change, socio-cultural factors in development.

Implicit in the first approach is a recognition that there is frequently a gap between economics as a substantive activity and economics as logic or a set of rules. This approach recognizes that the pattern of man's actual economizing activity is not always the same as if he had applied the rules or logic of economics perfectly (66). For example, estimating a production function for a sample of farms assumes that all that is necessary is to find out whether farmers are currently allocating their factors properly. If the study shows that they are not, then all we need do is tell the farmers what would be an improved allocation of their farm inputs.

But this view of the process is too limiting when one shifts to developing agriculture in a low-income, early-stage country because it assumes that the sole cause of divergence is a deficiency in technical knowledge. It is wonderful to conduct a research project which shows that agricultural output could be increased 10 per cent by a 2 percent shift in resource allocation from labor to land. But early-stage farmers may not wish to make the change if the basis of employment is not economic but due to family ties or if neighborhood norms regarding blind pursuit of profit maximization are censured. The causes of divergence between optimum economization and actual economization in early-stage agriculture may be, and often are, non-economic as well. Equally important may be the values of the society, as sacred monkeys or sacred cows, neighborhood norms regarding affluence and poverty, or even social attitudes toward extra work. Even in the most advanced society man is not merely economic. He is social as well; I might add, he is particularly so in the context of early-stage agriculture.

MODELS FOR EARLY-STAGE AGRICULTURE

Agricultural economists have not been immune to the current vogue (19) of "staging" agricultural development employing historical analogies. Three models which attempt to classify the agricultural developmental process have recently been put forward: Perkins-Witt (51), Johnson-Mellor (25,38,39) and Hill-Mosher (17).

The Perkins-Witt classification of stages is based upon the process of agricultural and general development. Their main focus is upon the process of capital formation and capital allocation:

Stage I A large subsistence sector in agriculture and unused agricultural resources which can be used for output increases without technological change. Capital formation is through investment of surplus labor.

Stage II No unused agricultural resources remain and, where increases in output can only take place through technological changes. Social overhead capital investments become important as does education, training programs, research and extension.

Stage III The subsistence sector disappears, capital substitution for labor becomes profitable, and a technologically advanced and commercial agriculture has developed.

The Johnston-Mellor stages are focused primarily on agriculture as a whole and are defined as (40):

Stage I "Providing agricultural development preconditions."
A phase which is technologically stagnant, but during which changes occur in attitudes and institutions required for later technological advance. Some changes or increase in production is possible with traditional techniques and inputs, but the magnitudes are not impressive, and technology is static.

Stage II "Rising agricultural production--low capital, labor-intensive technology".
A phase when dynamic development begins, characterized by a continuing rate of increase which is initially the result of a few "large-return" innovation but later the result of a larger number of changes with smaller individual response, although with large aggregate impact. This phase witnesses a gradual reduction in agriculture's share of national production and a rise in labor-saving machinery (or a rise in the capital-labor ratio). The emphasis here is on technological advance and reapportioning of factors of production.

Stage III "Rising agricultural production -- high-capital, labor-saving technology."
A phase where man-land ratios have fallen due to the substitution of labor-saving machinery, which has resulted from a rise in the productivity of labor (higher opportunity costs) and where agriculture occupies a much smaller proportion of the economy.

The Hill-Mosher taxonomy is very similar to the Johnston-Mellor one although the terminology differs and the focus is upon the characteristics of the individual farm:

Stage I "Traditional"
Techniques of production are traditional; family labor is primarily used, and farm production is mainly or entirely consumed by the family. The farm home complex is a self-contained unit and a very few factor inputs are purchased which are produced in the non-farm sector.

Stage II "Transitional"
This phase is characterized by an increased use of purchased inputs for both farm and home, by a larger fraction of farm production sold, and by a greater degree of specialization in production. This phase also involves a change from tradition to choice-making agriculture.

Stage III "Commercial"
Commercialization is virtually complete, i.e., nearly all factor inputs and farm production go through the market process. Decision-making is more oriented toward costs and receipts than toward family consumption needs.

Despite slight differences in emphasis, Stages I and II in all three models are essentially the same. If one were to synthesize the three models into one, there are then elements which can be discerned upon which attention is focused:

1. General values, attitudes and motivations.
2. Goals of production.
3. Nature of decision-making process.
4. Technology or state of arts.
5. Degree of commercialization of production.
6. Degree of commercialization of farm inputs.
7. Factor proportions and rates of return.
8. Infrastructure institutions affecting or serving agriculture.
9. Availability of unused agricultural resources.
10. Share of agricultural sector in total economy.

Chart I is an attempt to present a synthesis of the three models in a somewhat more systematic form, and views the ten elements as though each operates in a separate spectrum. Stage I is essentially viewed as a "static" or "backward" period; Stage II as the "transitional" or change-over period; and Stage III, as the "dynamic" or advanced period.

The taxonomers who have developed these models recognize that the models are generalized approximations of reality. Countries, like people, are not homogeneous and each maintains its individuality and special character. Thus a country may have six of the elements fall into Stage I and four fall into Stage II.[2]

Whenever considering "staging models" I am always tempted to view the

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[2]This point has been stressed by my colleague, Dr. H. W. Beers.

CHART I

A DIAGRAMMATIC SUMMARY OF TEN MAJOR CHARACTERISTICS OF AGRICULTURAL DEVELOPMENT FROM STAGE I THROUGH STAGE II AND INTO STAGE III[a]

GENERAL CHARACTER	Stage I STATIC ----------	Stage II TRANSITIONAL ----	Stage III DYNAMIC
1. General values, attitudes, motivations (orientation to change)	Negative or resistant		Positive or receptive
2. Goals of production	Family consumption and survival		Income and net profit
3. Nature of decision-making process	Arational or traditional		Rational or "choice-making"
4. Technology or state of arts	Static or traditional with no or slow innovation		Dynamic or rapid innovation
5. Degree of commercialization of farm production	Subsistence or semi-subsistence		Commercial
6. Degree of commercialization of farm inputs	Family labor and farm produced		Commercial
7. Factor proportions and rates of return	High labor/capital ratio; low labor return		Low labor/capital high labor return
8. Infrastructure institutions affecting or serving agriculture	Deficient and imperfect		Efficient and well developed
9. Availability of unused agricultural resources	Available		Unavailable
10. Share of agricultural sector in total economy	Large		Small

[a]The chart is an attempt to synthesize the three models of Perkins-Witt, Johnston-Mellor and Hill-Mosher.

process as a continuous curve which looks like an adoption curve or cumulative probability curve, and would prefer to divide the process up into just two stages. Stage I would then be that portion of the curve up to the mid-point and Stage II would be the portion beyond the mid-point. The "takeoff" point into self-sustained growth is then merely the point of inflection or a very narrow range around the mid-point.

Not all ten elements have either analytical or program significance. Each of the ten elements can be approached from either a descriptive or analytical standpoint. One can either describe the attitudes of farm people in Stage I or one can analyze the role of such attitudes as inhibitors or stimulators of the development process. Although infrequently done such research might also inquire what are the implications, if any, of these descriptive realities for program designed to stimulate agricultural development.

If we consider agricultural development to be a desirable goal and if the conditions obtaining for agriculture in Stage III are considered characteristics of goal achievement, then what is desired from any research effort is information useful for getting a country from Stage I to Stage III. Research then takes on a rather special character which seeks the answers to two kinds of questions: (1) What keeps a country's agriculture in Stage I, or what prevents a country from entering Stage II? (2) What makes a country's agriculture enter Stage II and proceed to Stage III? In other words, the goal of research in such a context is not merely to know what the social phenomena studies look like, but rather to discover what impels, motivates, causes ans stimulates the desired change.

I must admit a certain disenchantment with those who approach economic or agricultural development with a "staging" model, since by and large their efforts are directed at categorizing the descriptive characteristics of a nation or country in each of the three stages rather than the analytical relevance of these characteristics.[3] Knowing that agriculture is the dominant sector of any economy in terms of gross national product, labor force and exports is certainly not as important as knowing what implications this fact has for differential rates of growth between agricultural and non-agricultural sectors. Too frequently, describing the stages has led to a false sense of security that, by knowing the characteristics of the stages, we thereby automatically know what to do to induce the necessary changes. Knowing that a Malayan padi farmer uses a small hand knife to harvest instead of a sickle tells us that he is Stage I and not Stage II, but it does not tell us why he prefers the tuai or what real economic effect this has on his yields or how we can get him to change.

However, the ten elements which I have used to synthesize the three models are useful as a "check list" to judge the extent to which information is or is not available on the analytical components, as opposed to the descriptive components, of each stage. Out of such an exercise, I would hope that we could develop a set of research priorities useful for understanding and promoting the process of agricultural development. My remarks will be limited to Southeast Asia.

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[3]This is a point I have made elsewhere. "The only fault which one finds with the 'taxonomers' is that, once their taxonomy is complete, little if analytical or predictable vigor emerges. Why is a nation in stage one or stage three? And what does a nation have to do to go from stage one to stage two? Or, if a nation is now tradition-directed what national policy should the government adopt and what programs should it inaugurate to move from tradition to science as the orientation mechanism? Wharton (65, p.10). For a more practical and analytical use of stages, see Mellor (38).

An obvious preliminary question is whether or not the agriculture of Southeast Asian nations can be properly classified as falling into Stage I. One is immediately faced with the necessity of making a clear distinction between the plantation or estate sector and the smallholder sector in the agriculture of most Southeast Asian countries.[4] From the micro-economic standpoint, the estate sector in Southeast Asia cannot be classified as being in Stage I. Most estates, whether owned by local or foreign capital, are responsive to innovations, engage in rational decision-making, have a high level of technology, are totally commercialized both in product sale and factor input purchase, and their goals are directed completely toward maximum net profit.

The crops where estates play a significant role are mainly oil palm and rubber, and occasionally tea, coffee, sugar cane, pineapples and coconuts. Except for Malaya, the acreages involved are not large. Of Malaya's total 5.5 million acres under cultivation, 40 per cent is operated by estates; while Indonesia's total estate acreage is about 4 per cent of the total cultivated acreage and Vietnam's is about 3 per cent. The more important aspect is that the crops grown by such estates constitute a major share of export trade (65).

In value terms the estate sector is rarely a significant fraction of the total agricultural sector of these nations. The majority of agriculture in Southeast Asia is dominated by the small farmer in a subsistence or semi-subsistence state. Receptivity to change and innovation is low; the goals of production are primarily oriented toward family consumption; decision-making and technology are traditional and arational, handed down from father to son; a majority of the crop is not sold but consumed; enterprises are labor, and capital, intensive; and the institutions serving agriculture are deficient and imperfectly developed. There are exceptions to be sure. The farmers of Northern Thailand have shown themselves highly receptive to enterprise change with the rapid adoption of corn and kenaf (6, 56, 57, 49). The Malaysian rubber smallholder is responsive to prices (7, 67). The Malaysian rural development program and intensified educational program have certainly altered Malaysia's institutional setting for agriculture, as will the proposed agricultural diversification effort (1, 48). But on the whole, the non-estate agricultural sector in most Southeast Asian countries is largely in Stage I, with a few edging over into Stage II. Except for the estate sector, certainly none is in Stage III, as is Japan.

THE MAJOR PROBLEMS OF AGRICULTURAL DEVELOPMENT IN SOUTHEAST ASIA

Three years ago I prepared a list of five economic and five non-economic factors which I felt were crucial to agricultural development in Southeast Asia (65). The five economic factors which I felt were influencing the course

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[4]This phenomenon has led to a "dualistic" school of development pioneered by Boeke (3) and others. The most imaginative of the recent dualistic models are those of Liebenstein (32). Jorgenson (27) and Ranis-Fei (53). The model developed by Georgescu-Roegen should also be included (13).

of agricultural development in Southeast Asia were: (a) monocultural export dominance, (2) the preponderance of perennial crops, (3) the duality of smallholder and plantation production, (4) the existence of food deficit and surplus areas, and (5) the existence of sizable subsistence sectors. The five non-economic factors of major importance were: (1) the physical and climatic forces of nature, (2) population and its attendant problems, (3) the cultural forces, (4) non-agricultural leadership, and (5) economic nationalism.

From these ten factors were derived ten priority areas for research: (1) supply elasticities of export crops, especially tropical perennials, and techniques for insulating Southeast Asian economies from severe short-run instabilities; (2) economies of scale and optimum-size farms; (3) the economics of subsistence-type farms and the economics of the household; (4) the problems of monopoly and monopsony at the village level; (5) economics of agricultural labor; (6) farm practices and management; (7) limits of agricultural diversification and the limits of economic planning in agriculture; (8) research techniques and methods, both collection and processing; (9) price and income elasticities for foodstuffs and marginal propensities to consume; (10) customs unions.

Rather than repeat the analysis underlying my earlier set of priorities, I would like to approach the priorities and problems of research on agricultural development in Southeast Asia from a different angle. I would prefer to approach the problem by using my synthesized model of the stages of agricultural development as a "check list" to see whether previous and current economic research on Southeast Asian agriculture is designed to meet the descriptive and the analytical needs of agricultural development in the region.

DEFICIENCIES IN CURRENT RESEARCH

Any superficial survey of past and current agricultural economics research on Southeast Asia reveals the very heavy concentration of topics in the first or "traditional" category.[5] In 1958, ECAFE published a study of agricultural economics research in Asia and the Far East. It reported only 93 recent or current research projects for Burma, Indonesia, Malaya, Philippines and Thailand. But of this total, more than three-fourths were in the Philippines (See Table 1). None was reported for Cambodia, Laos and Vietnam. I have attempted to bring the ECAFE report up to date and the previous areas of concentration persists. (See Table 2 and Appendix C)[6] If we look at current

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[5]Three major sources provide information on agricultural economics research in Southeast Asia: an ECAFE study (10), the Bulletin of the Liaison Centre for Southeast Asian Departments of Economics (31), and the World Agricultural Economics and Rural Sociology Abstracts (72). In addition to these major sources, I have also relied upon personal knowledge and various reports and papers by several persons (see list in Preface).

[6]The Philippines continues to dominate, but while it has doubled the total number of research projects, its share in the region has been cut in half, to 40 per cent.

TABLE I

NUMBER OF RESEARCH PROJECTS ON AGRICULTURAL ECONOMICS AND DEVELOPMENT REPORTED FOR SOUTHEAST ASIAN COUNTRIES IN ECAFE STUDY OF 1958[a]

	Burma	Indonesia	Malaya	Philippines	Thailand	Total[b] No.	Total[b] %
1. Land and tenancy	-	-	2	3	-	5	5
2. Farm economics and organization	-	-	1	31	1	33	36
3. Finance and debt	2	-	-	11	-	13	14
4. Supply and demand	3	-	1	6	-	10	11
5. Marketing (domestic)	2	1	-	10	-	13	14
6. Marketing (export)	-	-	-	2	2	4	4
7. Rural life	1	1	-	6	1	9	10
8. Policy	-	1	-	2	-	3	3
9. Miscellaneous	-	-	-	3	-	3	3
10. Economic and agricultural development	-	-	-	--	-	--	--
Total	8	3	4	74	4	93	100
Per cent	9	3	4	80	4	100	

[a]Based upon ECAFE, United Nations, Agricultural Economics Research in Asia and the Far East, Bangkok; ECAFE, 1958. Double counting of project entries has been eliminated.

[b]Cambodia, Laos, and Vietnam--none reported.

research under way, the dominance of the traditional research topics and approaches persists among the 365 entries.[7]

A careful evaluation of recent and current research on the agricultural development of Southeast Asia against the ten characteristics of the synthesized stages model reveals interesting areas of deficiency. I will restrict my remarks to those areas of greatest deficiency.

There are three deficiencies: those which are peculiar to Southeast Asian agricultural economists, those which are peculiar to U.S. or Western acricultural economists (either resident in Southeast Asia or in their home countries), and those which are common to both.

1. Deficiencies of Southeast Asian Agricultural Economists

Three frequent criticisms of agricultural economics research undertaken by Southeast Asian agricultural economists are: (1) it is purely descriptive or fact-finding with little analysis, (b) it is designed to "prove" preconceived values or norms, and (c) it is frequently a blind imitation of the

[7]Farm economics and organization continue to dominate as the largest area of research.

TABLE 2

NUMBER OF RESEARCH PROJECTS ON AGRICULTURAL ECONOMICS AND DEVELOPMENT FOR SOUTHEAST ASIAN COUNTRIES AS OF July 1, 1964[a]

	Burma	Indonesia	Malaysia	Philippines	Thailand	Vietnam	Total[b] No.	Total[b] %
1. Land and tenancy	-	-	10	7	6	3	26	7
2. Farm economics and organization	4	11	12	35	10	4	76	21
3. Finance and debt	1	3	2	14	5	2	27	7
4. Supply and demand	3	7	15	5	3	4	37	10
5. Marketing (domestic)	-	8	5	34	9	-	56	15
6. Marketing (export)	1	1	1	1	6	1	11	3
7. Rural life	5	10	4	35	8	2	64	18
8. Policy	-	15	13	6	1	1	16	4
9. Miscellaneous	1	--	1	4	-	-	6	2
10. Economic and agricultural development	5	10	8	13	5	5	46	13
Total	20	55	61	154	53	22	365	100
Per cent	5	15	17	42	15	6	100	

[a]Source: Appendix C.

[b]Cambodia and Laos --none reported.

the research projects undertaken in the West by Western economists. Frankly, I can find little fault with the fact-finding or descriptive research efforts of Southeast Asian agricultural economists because such research is the foundation upon which subsequent research is based. So little reliable factual knowledge is available on most topics that Southeast Asian agricultural economists quite naturally wish to learn the simple facts of production, prices, market channels, etc. In these efforts they should have our blessing, for it is only upon such basic, simple descriptive efforts that later sophisticated analytical models can be built. Any critisism of these efforts which is based solely upon their descriptive nature is misplaced and unjust.

The other two criticisms have more merit. While it is undoubtedly true that Western economists are always ready to see Southeast Asia through their "Western" eyes, it is equally true that the leading Southeast Asian agricultural economists are ready to equate what they call Western economics with colonialism, imperialism, and exploitation.[8] These views have led some Southeast Asian economists to engage in research efforts to "prove" the

[8]For a more balanced analysis of economic theory and its applicability or relevance for the developing world, see H. Myint (43).

deficiencies of free enterprise, the social parasitism of middlemen, and the beauties of group and state enterprises. Such Southeast Asian agricultural economists have tended to concentrate their research most heavily upon the problems of land reform, land settlement, marketing imperfections, cooperatives and foreign economic control and exploitation. The effects of land tenure, sub-division and fragmentation upon farmers and agricultural output are other frequent choices, Studies of cooperatives as the universal panacea for the ills of exploitation and poverty are also popular. In many Southeast Asian nations, free enterprise is equated with the British East India Company or agency house system, even though the system was in fact a monopoly and not free enterprise at all. Hence, normative views tend to color and influence the Southeast Asian economist's use of the positivistic apparatus of economics. I do not believe that the newly emerging and newly born nations of Southeast Asia are going to pursue free-enterprise economic policies nor are they likely to adopt a mixed economy along U.S. lines. Whether along the path of a militaristic rule or a one-man dictatorship or guided democracy or a socialism controlled by an intellectual elite, the general pattern of economic organization will be closer to the socialist-communist type than the free enterprise-capitalist type. Unfortunately the prevailing social values exert a subtle and sometimes direct influence upon the professional objectivity of the Southeast Asian agricultural economist in the conduct of his research. His normative values color his findings to an extent where his judgments and conclusions are sometimes suspect.

Another frequent criticism of Southeast Asian agricultural economists is their blind imitation of the research projects which are traditional in Western countries. This phenomenon, though valid, is quite understandable. A certain amount of intellectual brain-washing takes place whenever a Southeast Asian agricultural economist is trained abroad. He sees what makes for "success" within the profession abroad and automatically desires to emulate; professional recognition and acceptance by his peers and by his former teachers encourages him to adopt the same criteria of professional competence. The U.S. trained Southeast Asian agricultural economist is not deliberately told, "Go thou and do likewise". But the effect via osmosis is the same. There is consequently a strong and natural tendency for Southeast Asian economists to imitate our research projects, forgetting that these evolved from the specific needs of the United States and our own subconscious knowlecge of the broad values, attitudes and motivations of U.S. farmers. If "simulation models" are the vogue, the Southeast Asian economists upon return to his home country will do his utmost to "simulate". The unfortunate feature of these efforts does not lie in the imitations but rather in the failure of the researcher to take the techniques and approaches and apply them imaginatively and creatively. Estimating a Cobb-Douglas production function for a sample of farms in Southeast Asia should be more than a blind, unthinking imitation of all the previous efforts in this field.[9] The social, cultural and human dimensions for Southeast Asian farmers are not the same as for a group of farmers in Iowa; but instead of recognizing and profiting from these differences, the Southeast Asian agricultural economists proceed to duplicate

[9]Production functions like any other technique can be used imaginatively in studying early-stage agriculture. For some good examples, see Hopper (18) and Hughes (21).

the"traditional" approach without the slightest awareness or recognition of the fact that the farmers in the sample are in the Philippines and not in Iowa.

2. Deficiencies of U.S. and Western Agricultural Economists

There are two groups of U.S. and Western agricultural economists conducting research on Southeast Asia: those who are resident in the area for sustained periods of time (one year or more), and those who are primarily resident in their home country with only short or infrequent visits to Southeast Asia.

Much of the work of U.S. and Weatern agricultural economists resident in Southeast Asia has been limited to the first or traditional field. The farm management expert from the Eastern United States arrives in "bandungia" and immediately undertakes a farm management study to improve the managerial practices of the "bandungian" farmers. The production function specialist or linear programmers from the Midwest arrives and immediately sets out to display his economic virtuosity with a multiple regression designed hopefully to show how the the improved allocation of farm resources will result in greater agricultural output per unit input.

Probably the greatest indictment by Southeast Asian of so-called Western agricultural economists resident in the area is the readiness of Westerners to see Asia through their "Western" eyes and consequently to impose their values. Often we Westerners are unaware of the extent to which our values influence the choice of a research project, much less our findings. For example, Westerners place a high value on the independent farm operator who is free to make his own decisions and mistakes. A farm management study is one method to provide an independent farm operator with information to assist him in making better farming choices. But in the eyes of many Southeast Asians, such a research activity is based upon several "fallacies": (a) that the Southeast Asian farmers is in fact "independent", (b) that the Southeast Asian farmer can achieve the greatest progress and well-being by being independent, and (c) that an agriculture of independent farm operators is a socially desirable institution. All three points are fallacies in the eyes of many Southeast Asian agricultural economists. The conduct of research in any of these areas by a Western agricultural economist is immediately subject to criticism as an attempt to perpetuate undesirable Western, colonialist, exploitative social values and goals.

The criticism by Southeast Asians of U.S. and Western agricultural economists not resident in the area takes on an additional dimension: their research is entirely too theoretical, model-building, esoteric, impractical and completely untested. The U.S. agricultural economist who visits Southeast Asia under a Fullbright, Smith-Mundt or Ford fellowship is a common sight. He goes to the region for a year or two and then returns home well laden with government reports, statistics and notebocks replete with his "brain-pickings" of key Southeast Asians. Somewhere in his first tour there are one or two garden-variety research projects, but once home he quickly turns to

the easier task of theoretical model-building. This can give fuller rein to his display of the traditional tools of the profession and his artistry with mathematical symbols, equations and graphs, but not with too many hard facts to test the model, only "impressions". For the next five to ten years his professional reputation is built by the skillful exploitation of his brief "overseas tour"--frequent university seminars, conference papers, journal articles, all designed to exploit his brief experience to the fullest and to establish his professional domestic image as an "expert". Every two years or so he may secure a fortunate supplementary travel grant from some foundation to re-visit his area and freshen his fading materials and refurbish his professional expertise. This stereotype is commonly held by Southeast Asians and we Westerners would do well to be aware and on guard.

3. General Deficiencies

Leaving aside the deficiencies which are peculiar to the national origin and residence of the researcher, there are certain important deficiencies which are common to the work of all groups.

(1) Very little research has been undertaken to ascertain what are in fact (a) farmers' goals of production, (b) the nature of their decision-making processes, and (c) the influences and patterns of diffusion and adoption of practices and enterprises.

To say that the goals of production in Stage I are family consumption or survival is at best an oversimplification. Even the most primitive isolate group engages in economic activities which have broader significance. Even though a good is scarce and therefore has an economic value does not necessarily mean that its use will be dictated solely by economic considerations. A Balinese padi farmer may not sell his rice but he does use some of it daily to appease certain of the gods and to make offerings in the temple. He may also refuse a new higher-yielding variety which lodges, simply because it spoils the esthetic beauty of his fields compared with the traditional variety. The Thai farmer who reserves a corner of his field for the spirits is reducing his planted acreage and thereby his total product, whether he consumes all his product or not.

I would like to see several studies in Southeast Asia of the Johnson-Haver (23,24) type to find out (a) the types and sources of information farmers use in the decision processes, (b) the importance they attach to different kinds of information, and (c) the difficulty they experience in getting information. Very little is known about the nature of these processes and goals of the farmer in Southeast Asia. Why, and how does he pick particular crops? Why and how does he decide upon his particular level of factor usage? Why and how does he decide upon the techniques and practices employed? Some recent work[10] has made a beginning, but attempts thus far have been fragmentary.

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[10] Questions regarding sources of technical information on new crops, etc. have been included in a few of the studies conducted by the Department of Agricultural Economics, Faculty of Economics and Copperative Science, Kasetsart University in Thailand. See especially Chuchart et al. (56) and, for Malaya, Brown (4).

I would also couple such work with complementary research by social psychologists which would enable us to relate findings to the attitudinal and motivational characteristics of the farmers.

Some research is under way to assess the influences which changed practices and enterprises have upon output,[11] but little is known concerning how new enterprises and practices are diffused through rural areas of Southeast Asia. Much more research is needed on how new practices and new enterprises are diffused among farm people in Southeast Asia. How and why do Southeast Asian farmers innovate? I am thinking here of studies along the lines of those which have been done in the United States, mainly by rural sociologists.[12] We need to know a great deal more about what actually influences the Southeast Asian farmer to make changes in his farm and home practices as well as those which induce him to change enterprises.

(2) Very little empirical research has been of a testing nature, i.e., to test existing theories, and very rarely are the new models of growth tested against hard facts.

For example, a perennial debate among growth economists concerns the extent to which farmers in early-stage agriculture are or are not price responsive. Except for the Malayan rubber studies by F. Chan and myself (7,67) little systematic evidence has been produced for Southeast Asia (47,65). The recent expansion of corn and kenaf in Northern Thailand certainly offers a fruitful area for such research.[13]

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[11] The Farm and Home Development Program of the College of Agriculture, University of the Philippines.

[12] For a good summary, see E. A. Wilkening (70) and other papers in that issue. Also, North Central Regional Rural Sociology Sub-committee on Diffusion of New Ideas and Farm Practices, Bibliography (46) and Rogers (54). Only a few studies dealing with Asia have come to my attention: Lindstrom's on Japan (33). Rahim's on Pakistan (52), Buss' on India (5); Deutschmann and Fals-Borda (9) and Myren (44) have done diffusion studies in Latin America. Everett Rogers recently completed such a study in Columbia.

[13] Such research seems to have been concentrated in Africa (2, 26, 60) and South Asia (8, 11, 14, 22, 28, 29, 35, 41, 62). The studies by the agricultural economists at Kaestsart University (6, 56, 57) do touch upon this but only in a descriptive fashion.

Empirical research is especially needed on the supply response of subsistence and semi-subsistence producers (68). The recent note by Raj Krishna (30) is an excellent pioneering effort which attempts to wed "model-building" with empirical evidence; I would like to see more of this done.[14]

Another source of conflicting views and theories concerns underemployment and hidden unemployment in early-stage agriculture. The earlier paper by Mellor-Stevens (37) dealt with this topic in Thailand, as does the current duplicate effort by Arb Makajud in Thailand and John Purcal in Malaya.[15] Another issue concerns the "backward bending supply curve of labor". Despite understandable objection to the stereotype of "lazy natives", very little empirical research has been conducted on the topic in Southeast Asia.

(3) Research has been least directed at the general values, attitudes and motivations of farm people and how these affect the goals of production, the farmer's decision-making process, receptivity to innovations, new enterprises and techniques, and the general conduct of farming. Since this has been the greatest area of deficiency, I would like to make some extended comments.

Max Weber, Thorstein Veblen and even Alfred Marshall long ago pointed out that economic behavior cannot be completely understood without the inclusion of non-economic considerations. More recently the inter-relationships between the economic and the non-economic have been pursued by other social scientists like Parsons (49), Mead (36), Spengler (58), Shils (50), Hoselitz (20), Spicer (59), and McHale (34).

The importance of non-economic elements in economic behavior has influenced the U.S. agricultural economist and the rural sociologist, especially in such areas as innovation, diffusion and adoption. But empirical research on these problems has been largely limited to the United States, where undoubtedly the relative importance of such factors upon the economic process is far less than in the developing nations. Although there is general agreement that the cultural patterns of developing countries play a far greater role in inhibiting or stimulating development than it does in the developed countries (42), the rural social scientist has been loath to enter and apply his not inconsiderable skills. There can be no question that the ascriptive norms, particularism and diffuseness in the developing-traditional society tend to retard growth (20). But more needs to be known concerning how such a society is converted into one where achievement norms, universalism and specifity dominate. Since the majority of developing societies are rural and their major occupations are agricultural, the task particularly requires the rural scientist.

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[14]Besides the model by Krishna, several others have come to my attention. For a listing, see Wharton (69). Most of the early ones like Fisk's (12) and Nakajima's (45) are conceptual and theoretical and only the one by Mathur-Ezekiel has been tested with real data (28,61). Mubyarto from the College of Agriculture, University of Indonesia, is currently undertaking an empirical study using Krishna's marketable surplus model; another is being done by Mahar Mangas at the International Rice Research Institute, for the Philippines.

Attitudes toward change and innovation among farm people are pivotal to the entire agricultural development process. If farm people are not motivated to change, change will not take place. The glibness and frequency with which we make these statements in all our work has made the observation almost trite. No paper or speech on economic development is complete without mentioning the "human factor". I readily admit committing the same sin of viewing "human inelasticity" as the most serious problem in Southeast Asia (67). Yet, though we all admit the centrality of human factors in economic and agricultural development, we rarely make it central in our research. We will compare farmers' net worth, but rarely whether its absolute size is positively correlated with particular motivations or aspirations. We study the managerial practices of farmers, but rarely see if adoption rates are related to cultural values. We cross-tabulate net farm income against an overwhelming array of independent "causative" factors -- size of farm, crop combinations, fertilizer use, distance from market, land class, tenure, age and education of operator, etc.--but we rarely look as the mental or decision-making processes of the persons who are carrying out the farming

The lazy excuse for the failure to include the social-psychological-cultural vector in our research is that research on values, attitudes and motives are the private pasture of the rural sociologist, cultural anthopologist and social psychologist, not the agricultural economist. But how much better would it be if we agricultural economist were to join forces with our colleagues in the rural social sciences to find even more meaningful answers together, by shoring up each other's weaknesses and building upon each other's strengths.[16]

The gist of my remarks should not be interpreted as a plea for the cessation of all research projects aimed at studying the functioning of the current economic system. Quite the contrary; fact-finding and knowledge of the economic processes must precede more advanced analysis and testing of hypotheses and theories. One quite naturally builds upon the other. My objection is aimed at the failure to appreciate the significance of the second research category, the non-traditional, and the insight which it might provide into

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[15]These two research projects are using somewhat similar questionnaires and are collecting daily and weekly data on agricultural labor use for a sample of padi farms for a full calendar year. The Thailand study is being undertaken jointly by ECAFE and Kasetsrat University; the Malayan one by the Research School of Pacific Studies, Australian National University. The Agricultural Development Council's personal and financial encouragement of both projects is based on the belief that regional research or duplicate research efforts in different countries may provide fruitful insights of a cross-cultural nature.

[16]An interesting example of interdisciplinary research at the village level was recently undertaken in Vietnam by Hendry, Hickey and Woodruff for Michigan State University; the team comprised as economist, a political scientist and a social anthropologist (15, 16).

the functioning of current economic organization with a view to stimulating more rapid economic growth. Moreover, Western and non-Western economists seem to be experiencing a growing disenchantment with the failure of "traditional" research to make much impact upon the economizing pattern of early-stage farmers and upon the rate of agricultural development. We have a great deal of "traditional" factual knowledge concerning the functioning of early-stage agriculture, but there is a growing awareness that certain other pieces of knowledge are missing.

There also are other areas of research which have been neglected in Southeast Asia. If one matches current research efforts against ehe critical problems facing the development process, there are several areas of deficiency in addition to the ones discussed above. Appendix D is an attempt to provide a systematic listing of the areas where greater research is needed. Expansion of future research on the economic problems of Southeast Asia will face a number of problems which ha e existed in the past, as well as others which will be brought about by any increased research activity into the neglected areas highlighted above. The new American Universities Research Program of the Agricultural Development Council, a program of research on agricultural development in Latin America, Asia, the Near East and Africa, will certainly heighten the level of activity by U.S. Universities.[17]

1. Quantity and Quality of Research Talent: Local vs. Foreign

Any attempt at expanding the research output on agricultural economics and agricultural development in Southeast Asia will be plagued by the problems of numbers and of quality. As a discipline, agricultural economics is still in its infancy in most Southeast Asian countries. Four years ago (64), I pointed out that not one Southeast Asian country had more than ten Ph.D.s in economics (including agricultural economics).[18] Today, the Philippines has certainly passed this mark and Thailand will shortly. But Malaya still does not have one Ph.D. in agricultural economics; and persons with B.A. degress in agricultural economics number a handful in Vietnam, and are virtually non-existent in Cambodia and Laos. Under the circumstances, any expansion in research must be met with foreign agricultural economists. The number of trained agricultural economists had definitely increased in Southeast Asia over the past four years,[19] but the absolute numbers on a per capita basis are still low in most countries compared with those in India, Japan

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[17]See ADC Announcement, "Research on Agricultural Development", May 1963.

[18]I am ignoring the issue of quality introduced by the problem of what I call "under-developed Masters" and "oriental Ph.D.s". See Wharton (63).

[19]Since 1953 the Agricultural Development Council has given over 130 fellowships to Asian for graduate study, 39 of which were for Southeast Asians. In the Philippines, the Council has given 20 fellowships to 18 persons (seven for Ph.D. studies, including one each in rural sociology and cultural anthropology); in Thailand, 15 fellowships to 14 persons (four Ph.D. studies); in Malaya, two (both for Ph.D. studies); in Indonesia, two. No fellowships have been given in Burma, Cambodia, Vietnam and Laos.

or Taiwan. Another complicating factor in many countries is the lack of research time which the Southeast Asian agricultural economists have available due to the need to maintain multiple jobs to offset very low university salaries.[20] The need for foreign researchers will be even more acute in the immediate future because of the increased numbers of Southeast Asians proceeding abroad for graduate training, thereby reducing the available research manpower.

2. The Foreign Expert

The use of foreign researchers has its own special problems. There are a number of difficulties which face the U.S. or Western agricultural economist when he ventures overseas to engage in a research project -- learning the language, building local rapport, cultural adjustment, inadequate or unfamiliar data, etc. Some of these have been covered by Seers (55).

There are some additional problems which deserve mention and which are not always obvious.

(1) How to determine priorities in research? Although one can develop the broad areas of major need, selecting one or two specific projects is still a difficult task. Upon first arrival, a researcher feels that the frontiers of knowledge are so close that he is tempted to strike off in several directions at the same time. There is so much that needs to be done that one sometimes believes that even picking projects blindfolded would make little difference--any choice is an important one. Another difficulty is the frequent dearth of technical agricultural information upon which to rely. Agricultural economic research, especially at the farm firm level, must rely in part upon the findings of technical research in soils, plants, etc. Frequently in Southeast Asia such technical research is missing. There is also a frequent conflict between the desire to engage in research of immediate practical value at the farm level, which is usually non-sensitive politically, and to undertake research at the national level because so many of the actual decisions affecting the livelihood of rural people are beyond their control; yet such research is usually sensitive politically.

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[20]Salary scales are probably highest in Malaya and lowest in Indonesia. It is very common in many universities of Southeast Asia for lecturers and professors to receive full-time pay but to have a second or even a major occupation outside the university. Thus, truly full-time persons who are able and willing to devote their complete attention to teaching, much less to research, are rare. Only in the University of Malaya, the University of Singapore and the University of the Philippines can be found genuinely full-time professors and lecturers. Multiple jobs to offset inadequate salaries often have the same effect upon government officials in research divisions.

(2) How to find and to develop research talent and assistance? The difficulty is often more than just the simple one of finding people to engage in a field survey. Since little research has been done, the problems of enumerator and respondent bias are even more acute than usual. Farmers who have never before been interviewed are naturally suspicious; this calls for skilled and trained enumerators.[21] But, except for students in the universities well-trained enumerators are scarce.

3. The Problems of Communication

Another major problem will be the need for more frequent and wider communication among all agricultural economists--Southeast Asian, Asian, U.S., Western, whether based in Southeast Asia or not. The need to be aware of current research efforts is particularly acute to avoid unnecessary and wasteful duplication of effort and detrimental professional rivalries.

My warning to American and Western colleagues, whether foreign or home based, is the need to avoid the danger of presuming that all research topics in Southeast Asia are virgin or that previous and current efforts are mediocre. We too easily forget that an increasing number of Southeast Asian agricultural economists are being trained abroad at the graduate level and are returning to engage in meaningful research activities. There is nothing more annoying to a Southeast Asian agricultural economist than to spend two or three years engaged in a research project which is about to be published and then have a prestigious Western visiting professor come to his country "ready to show you how a good research project is conducted"--on the same topic. Such patronization or well-intentioned paternalism is not welcome, regardless of the quality of the work being criticized.

Several instances have recently come to my attention where research has been done in the United States with secondary data duplicating similar research in a Southeast Asian country. Each researcher proceeded in total ignorance of the work of the other. We in the United States tend to forget that our lines of communication through journals, professional meetings, etc. are considerably greater than with countries outside our circle.

My warning to the Southeast Asians on this point is the similar need for increased communication with each other on research topics of mutual interest, as well as the need to keep abreast of the research efforts in other countries.[22] What is needed is something to inform researchers of work

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[21] The recent experience of one Southeast Asian country with its agricultural census is quite germane. The census was constructed and executed in an excellent fashion; enumerators were well trained and the final sampling errors were very, very low. Nevertheless, using reliable independent evidence, it was found that 26 per cent of the padi acreage was missed, 49 per cent of the rubber acreage, and 59 per cent of the coconuts. Such non-samplings errors are due almost entirely to the problems of respondent's fears and enumerator-respondent difficulties.

[22] In Appendix B I have listed some of the non-U.S. institutions, organizations and agencies conducting agricultural economics research on Southeast Asia.

currently under way, before it appears in the abstracts of published works.[23] In this connection I would like to compliment the Liaison Centre Bulletin (31) for its partial attempt to fill this role.

CONCLUSION

Knowledge is a powerful force for achieving economic development, provided it is useful knowledge which facilities more rapid economic growth. The knowledge which is most needed is knowledge about the process of development--the factors which stimulate it, retard it, accelerate it, hinder it. This lack has led to a sustained drive among economists to push back the frontiers of knowledge in this area. Improved knowledge of the process should provide us with the ability to harness these factors to raise the levels of living of three-fourths of the world living at or near subsistence levels.

Since the majority of developing societies in the early stages of agricultural development in Southeast Asia are rural and the major occupations are agricultural, the tasks of stimulating more rapid economic development call for the rural social scientist. The rural sociologist and especially the agricultural economist have been slow to enter these almost virgin fields overseas. The obstacles for the foreign rural social scientist are many; when one looks at the size of the task to be done, the opportunity which this affords for truly pioneering research, and the proportion of mankind involved, the risk and uncertainty are well worth the effort.

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[23] The research information bulletin of the UNESCO center in Delhi is a good example of this, but is usually limited to India and Pakistan. Work being conducted in the United States is covered by such publications as those of the U.S. Department of State, Bureau of Intelligence and Research, External Research Division, which list external studies currently in progress.

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