

RECENT DEVELOPMENTS IN THAI RICE PRODUCTION

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Since the middle of the nineteenth century Thailand's vast rice surpluses have formed the capital base for its economic development. These surpluses have also supplied rice for grain markets from Hong Kong to London and fed millions of Asians in times of famine.

In recent years these export surpluses have dwindled as the rapidly increasing Thai population consumes more rice. The Thai government has just awakened to this fact. Perhaps as recently as 1973 when all exports were banned for several months in the face of a threatened domestic shortage, many in Thailand were generally unaware of an impending

Malthusian squeeze. The bad harvest of 1973 and the beginning of worldwide recognition of food supply shortages, however, have done much to encourage recognition of the urgent need to grow more rice.

History of Rice Production

In 1870 Thailand exported an estimated 123,000 tons of rice. By 1937 this figure had reached 2,337,900. Since then this amount has been equalled only during the bumper crop year of 1971-72; and exports as a percentage of total production have been declining (Table I).

TABLE I

Crop Year:	Total production: (tons)	Total exports: ² (tons)	Exports as per- centage of total production:
1952/53	6,602,000	1,359,000	21
1955/56	8,907,000	1,264,000	14
1960/61	9,475,000	1,576,000	17
1965/66	10,978,000	1,508,000	14
1970/71	13,570,000	1,591,000	12
1971/72	13,744,000	3,113,000	23 ⁴
1972/73	11,669,000 ¹	882,000	8
1973/74	14,920,000	1,200,000 ³	8

1. Below average production due to serious crop failures.
2. Exports during calendar year, e.g., the two harvests during crop year 1952/53, are exported during export year 1953.
3. Government estimate as of July 1974.
4. 1971/72 represented a bumper harvest for Thailand.

The decrease in exports is obviously due to increased domestic consumption. With one of South-east Asia's most rapidly expanding populations (the number of Thais is increasing at a rate of 3.1 per cent per year), Thailand's projected population by the year 2000 will be double that of 1974. Some suggest that Thailand will have to begin importing rice as early as 1985.

The opportunity to increase productivity is evident in the fact that Thailand has one of the lowest rice yields in Asia. This is due to the historical process by which production was increased; with uncultivated lands available in the northern and northeastern regions of the country, Thai farmers have found it easier to cultivate more land than to increase yields on the old land. Thus population growth has been met by the opening of new lands. It is not surprising to find that in 1911 the total population of 8,266,000 were fed rice from approximately 1,840,000 hectares, in 1950, a population of 19,460,500 from approximately 5,536,000 hectares and in 1970 a population of 37,504,000 from 7,494,000 hectares. Because yields are stagnant, and there is no new acreage to be brought into production, this kind of expansion can only produce Malthusian results.

It is unreasonable to assume that increased productivity will be achieved as easily in the future as it was in the past. In Thailand, as everywhere, productivity is a function of four main variables: quantity and quality of land available; technological inputs; returns and incentives to farmers; and the farmer's social and economic position. Whether or not Thailand can meet the challenge of its impending domestic food crisis and continue to contribute to meeting the needs of the international community will depend on the country's ability to improve farm inputs, incomes, and the farmer's social position. The deceptively obvious solution to this predicament is the Green Revolution.

Inputs for a Green Revolution

New Seeds. Green Revolutions begin with the farmers' adoption of the new high-yield varieties of rice developed most notably at the International Rice Research Institute in Los Baños in the Philippines. These new varieties have a general reputation for being able to double and even triple rice

yields. It seems only logical to replace Thailand's traditional varieties with these new "miracle seeds."

At present, some 97 per cent of Thai rice seeds planted are traditional varieties, in spite of the fact that the HYVs have been in production in South-east Asia for more than five years. By 1970/71, for example, the United Nations reported that 50.3 per cent of the total rice area in the Philippines was planted in HYVs. The percentages in Indonesia, South Vietnam, and peninsular Malaysia were, respectively, 11.3, 19.3, and 24.5.

Numerous factors have combined to inhibit HYV use in Thailand. Among the most fundamental is the advantage that traditional varieties are more suited to growing conditions in Thailand than any HYVs yet developed. Indigenous long stem varieties, for example, are capable of rapid elongation—up to seven centimeters per day—a critical factor in much of Central Thailand and southern parts of the Northeast Region where the rice plants must grow in monsoonal flood waters. The HYVs are very short-stemmed and simply cannot be grown except in areas of strict water control. And, as will be discussed, water control is yet to be extensively achieved in Thailand.

Of equal importance is the matter of taste. Thailand is famous for its delicious, long-grain rice, considered the finest in world markets, where it generally demands the highest prices. The new HYVs, however, have notoriously bad taste to Asian palates. Reluctant to impair the reputation of Thai rice on these markets, Thailand has been slow to promote the cultivation of the new varieties.

Instead, efforts have been made by Thai seed-breeders to create HYVs suitable to Thailand's natural conditions while preserving the traditional taste. Two new strains have emerged and are being adopted where optimum conditions exist: namely in the upper regions of the Central or Chao Phraya Plain and the narrow valleys of the mountainous North Region. Yields have reached as high as 5.1 tons per hectare as compared with average yields for traditional varieties in the Chao Phraya Plain of less than two tons per hectare.

Some interesting cross-breeding experimentation is also being attempted between HYVs and the traditional long stem varieties. Success in experimental plots is promising, but adoption is yet to take place. When and if it does, the new "Thai" HYVs will be suitable for areas of high monsoon floods.

Two requirements all high-yield varieties have in common are water management (for flood control, water storage, and irrigation) and much higher levels of fertilizer than normally applied in traditional Southeast Asian rice cultivation. Neither requirement has been met in Thailand.

Water. Each year monsoons pour massive amounts of water over the entire country. Two central river systems drain this water: in the Northeast, tributaries channel water into the Mekong River which runs between Thailand and Laos and then through Cambodia and South Vietnam into the South China Sea; the other system drains all the mountain valleys of north and western Thailand into the Chao Phrya River and its vast plain and finally into the Gulf of Siam.

Although farmers have always depended on the annual monsoonal floods for their yearly rice crop, water levels from the floods vary from year to year. An average of 10 per cent of an entire annual rice crop is lost to irascible monsoons. Water levels can be too high and drown crops or too low and fail to provide enough water. In September 1974 in the Northeast, the monsoons came three weeks too late and 60 per cent of the rice seedlings, planted in anticipation of monsoon rains, withered and died. Unusually high flooding in the South in early 1975 destroyed about 70 per cent of that region's rice crop. The HYVs are especially hard to grow under such unpredictable water conditions.

Nothing less than a major effort to control and regulate the annual inundations will be required before Thailand can take advantage of the new high-yield varieties. Should efforts to manage seasonal flooding be combined with the development of water storage by means of dams, irrigation would be possible over a wider area, allowing for dry season or second crops. These second crops could significantly increase productivity as dry

season irrigation often produces optimum water conditions for HYVs.

The only major water control effort currently producing widespread results is the Greater Chao Phrya project. Started in the early twentieth century and finally completed in the early 1960s, it consists of a diversion dam on the main stream of the Chao Phrya at Chainat and a series of canals facilitating the drainage of flood water from roughly 660,000 hectares of prime rice land. This represents the northern two-thirds of the expansive Chao Phrya Plain, where most of Thailand's flood damage occurs.

In addition to decreasing flood damage, the Greater Chao Phrya project has allowed for increased cultivation of transplanted, rather than broadcast rice, resulting in increased yields. Between 1961 and 1969 there was an estimated 16 per cent increase in transplanting.¹ The estimate further suggests that the project has allowed for a total increase in production of nearly 15 per cent.

Little information is available on what more can be done to improve drainage in the northern region of the Chao Phrya Plain. It is quite conceivable, however, that further improvement in this drainage system could produce the strict water control and low water levels required for wet season planting of the shorter stemmed, high-yielding varieties.

Since the Chainat diversion dam has no water storage capacity, it is of little benefit to second crops during the dry season. But two other dams on Chao Phrya tributaries, the Bhumiphol on the Ping River completed in 1964 and the Sirikit on the Nan River completed in 1972, have both flood control and water storage capacity. World Bank estimates suggest the two dams can store enough water to provide irrigation to 580,000 hectares during the dry season, but this storage capacity is currently underutilized. In 1973, only 130,000 hectares of land were irrigated for a dry season rice crop. There were essentially two reasons for this. First, most funds for irrigation schemes throughout the Chao

1. See Leslie E. Small, "Economic Evaluation of Water Control in the Greater Chao Phrya Project of Thailand," Cornell International Agricultural Bulletin 26, Ithaca, New York, 1973.

Phrya Plain have been allocated for the main canals. Farmers themselves have usually been financially responsible for the costs of extending the network of distribution canals to the farms. These costs have been calculated roughly at \$350—the equivalent of two years' average gross farm income in the Chao Phrya Plain. With farm prices historically low, as will be discussed, credit has carried high interest rates and farmers have had little incentive to borrow for investment in expensive infrastructure. Second, in the Chao Phrya Plain as elsewhere in Thailand, farm boundaries are highly irregular, rendering a rational irrigation network impractical.

The Northeast as well has some hope for dry season irrigation from the five major dams on Mekong tributaries. These dams potentially provide irrigation for nearly 200,000 hectares. In addition, a number of so-called tank projects (i.e., simple earth dams built in slight land depressions to catch run-off rain water) could irrigate another 106,000 hectares. But the same problems—insufficient farm capital, high interest rates, and irregular boundaries—have deterred development of irrigation capacity. During the 1973 dry season only 1,700 hectares in the Northeast were cultivated.

The Thai government is aware of the need to expand water storage for dry season irrigation and to more fully exploit the storage and irrigation capacities of dams already in existence. In the case of the former, the Royal Irrigation Department has recently decided to build a third dam on a Chao Phrya tributary for both water control and water storage. World Bank pre-investment studies for this dam allow not only for water storage and irrigation but also on-farm development of irrigation ditches and drains for 133,000 hectares of land. Currently, dry season rice is cultivated on only 1,500 hectares in the project area; when the dam is completed at least 55,000 hectares could be planted in the dry season.

The most dramatic plan for the development of irrigation in Thailand today rests on the proposed construction of the Pa Mong dam on the Mekong River about 20 miles north of Vientiane. If the dam is constructed, it has the potential of irrigating 700,000 hectares of rice land in the Northeast.

Given the poor hydrological conditions in the area, the dam could provide a major boost to a badly depressed economy.

Whether the dam should or ever will be built, however, is a subject of heated debate. Its critics argue that a larger number of farmers would gain more benefits from a series of smaller dams built on Chao Phrya and Mekong tributaries. After careful consideration of environmental and social effects, they argue, such dams could provide as much irrigation as the Pa Mong, and also contribute toward flood management in the Chao Phrya Plain and the Northeast regions.

Current estimates place costs for the proposed Pa Mong dam at \$1.4 billion. With energy costs increasing rapidly in all sectors, the cheaper hydroelectric power Thailand can expect to derive from the dam represents a strong argument in favor of its construction. On the other hand, it is now clear that other high dams—such as the Aswan High Dam in Egypt and the Volta River Project in Ghana—had some unanticipated and detrimental effects. The same could be true of the Pa Mong. Furthermore, backwater from the dam would flood lands currently inhabited by 350,000 people. The estimated cost of resettlement alone comes to \$190 million, and there is even reason to believe that resettlement for most of these people is not possible except in urban slums.

A few statistics lend perspective on these past and present efforts. According to the Thai government in 1973 Thai farmers planted 7,139,000 hectares of rice, of which 1,822,000 hectares were irrigated. Most of this irrigation—1,258,000 hectares or 70 per cent—occurred during the wet season in the Chao Phrya Plain where the major drainage canals provided controlled water flows for farms near their banks. Most of the remaining irrigation occurred also during the wet season: 166,000 hectares in the North and 169,000 hectares in the Northeast.

During the 1973 dry season only 144,114 hectares of rice lands were irrigated—a little more than two per cent of all rice lands. In contrast, the estimated irrigation capacity for all seven major dams is almost 800,000 hectares. As Table II indicates, the total amount of water flowing from

TABLE II
Irrigated Dry Season Rice Land - 1969 to 1973
(in Hectares)

	North	Northeast	Central	South	Total
1969	2,141	--	35,361	1,670	39,172
1970	2,516	28	44,473	1,369	48,386
1971	2,924	1	63,633	1,176	67,734
1972	2,456	2	82,568	1,164	85,190
1973	7,495	1,719	133,146	1,754	144,114

the dams and major canals to farms has been increasing each year since 1969. In view of such progress recently, there is reason for some optimism about the future of HYVs in Thailand.

Fertilizer. The third requirement for Thailand to stage a successful Green Revolution is fertilizer. Unfortunately, HYVs require far greater amounts than the traditional varieties of rice and, as a consequence, the per hectare production cost is greater even though the yield is increased.

While fertilizers were cheap on world markets in the late 1960s through 1972, Thailand placed heavy duties on imported fertilizers. The intent was to protect the government-owned Mae Moh fertilizer factory in Chiangmai—a notably inefficient and unprofitable enterprise. This protection and inefficiency kept the domestic price of fertilizer artificially high which in turn contributed to a low application of fertilizer by rice farmers. Only now, when world prices have risen sharply as a result of the energy crisis, has this protection been dropped. Retail prices for ammonium sulphate and urea actually increased nearly 50 per cent in 1973 and 1974 in spite of the end of protection. In fact, the world shortage of fertilizer had become so acute by late 1974 that there was serious doubt whether Thailand would be able to find enough to meet its current demand of 400,000 tons per year. There were prospects of a 50 per cent shortfall.

Thailand must either produce or import fertilizer in greater quantities and at prices farmers can afford. Several current developments may well

facilitate this. First, there is speculation that international market prices will tend to come down as Japanese, Middle Eastern, and European producers increase exports over the next few years. Second, production in Thailand may increase when a new factory, to be built by private capital and with an ultimate capacity of 300,000 tons of compound fertilizer per year, becomes fully operative this year. Third, there are good prospects for extracting natural gas—used in producing nitrogen fertilizer—from wells drilled in territorial waters in the Gulf of Siam.

Phosphate, another important ingredient in the compound fertilizer applied to HYVs, is unavailable in Thailand, and owing to the acute world shortage of the past few years, Thailand's phosphate imports have suffered. Supplies are beginning to expand, however, and adequate quantities should become available for purchase on the world market. Ironically, the one raw material available in Thailand for fertilizer, potassium, is not recommended for use on HYVs.

The Price of Rice

Low market prices for rice in the late 1960s and early 1970s, combined with high fertilizer costs, taste preference, and the lack of water control, have seriously discouraged Thai interest in the HYVs. The impact this has had on incentives to increase yields through capital expenditure on inputs can be appreciated by contrasting the increasing costs of fertilizer and pesticides, for example, with rice prices.

The retail price of urea fertilizer remained stable from 1969 to 1973 at \$330 per ton. In 1973 it

increased to \$420 per ton and in 1975 it rose to \$525. A similar increase occurred in the retail price for ammonium phosphate: in 1969 it cost the farmer \$86 per ton, but by 1974 it had risen to \$160. Farm prices for rice, however, were in a serious decline until 1972. In 1967 the average Thai farmer received \$62 per ton of long grain rice. This declined to \$51 in 1969, \$46 per ton in 1970 and to only \$36 in 1971. It is not surprising that during this entire period fertilizer use in rice crops was stagnant.

Other equally important costs have also increased in the past two years. Pesticides and insecticides are more expensive because they are petroleum-based products. Transportation costs have gone up as has the cost of fuel for farm machinery. One small but significant increase is the cost of milling. Many farmers have the rice they save for their own consumption milled in small, often unlicensed, village mills and pay the miller with the rice bran. It has been noted in some villages that the miller now takes a percentage of the milled rice—perhaps as much as 5 per cent—to cover this increased fuel cost in operating the mill.

The overall decline in the farm price of rice in the late 1960s and early 1970s was due to a number of factors affecting international markets. First, some of Thailand's traditional markets in Southeast Asia

such as the Philippines were becoming more self-sufficient as the Green Revolution increased their own domestic productivity and decreased the need for Thai imports. Second, two important Thai markets, South Vietnam and Indonesia, were receiving Japanese and American rice at concessional prices as part of foreign aid programs. And finally, world stockpiles in general were increasing and world market prices were generally depressed.

In 1972, however, the international market situation for all food grains changed drastically. Bad harvests in many grain-producing countries, including Thailand, heralded the food crisis and brought some relief to Thai farmers, whose prices returned to pre-1967 levels. The figures in Table III compare the Hong Kong market prices for Thai rice with domestic retail and farm prices.

The fact that the farmers' price for rice in Thailand is not increasing as rapidly as the international market price is one of the nation's most important economic dilemmas. It is due in large part to a Thai government export tax known as the rice premium. The purpose of the rice premium has been to divert rice from the foreign to the domestic market, to provide revenue for the government to keep the domestic price down, and to keep the international market price up. It has served each objective admirably over the past two decades with some exceptions in recent years.

TABLE III
(All figures are US dollars per ton)

	Farm Price ¹	Bangkok Retail Price ¹	Hong Kong Market Price for Thai Rice ¹
1970	\$46	--	\$191
1971	\$36	\$145	\$172
1972	\$47	\$149	\$195
1973	\$74	\$158	\$426
1974	\$90	\$225 ²	\$626 ³

1. All prices are for the highest grade nonglutinous rice except for the Bangkok retail prices for 1971 and 1972. These are for 5 per cent broken which are 5 to 10 per cent lower.

2. Average price for January through October.

3. Average price for January through November.

The premium, when first instituted in 1955, accounted for 17 per cent of total government revenues. Since then, its relative value has declined while its absolute value has varied. In 1973 when rice exports were banned for a few months it brought the government only \$2 million. With the rapid increase in international prices, however, the premium brought the government \$78 million in the first five months of 1974 alone. The government has been able to increase the premium as much as three times on some grades and about two times overall.

Had this money not accrued to government revenues, much of it would have gone to exporters and other middlemen; but some of it would have gone to the farmer in the form of higher prices paid by the Thai consumer. It is this high domestic price that the government has sought to avoid. Ten per cent of Thailand's population are urban dwellers and another 20 per cent are farmers growing crops other than rice. That the trade-off has been in their favor reveals the essentially urban bias of the government. In fact, it is the Ministry of Commerce, not the Ministry of Agriculture, which administers the rice premium. The latter apparently holds the farmers' interests closer at heart while the former represents more urban interests.

Although the rice premium has historically depressed the farm price—the farmer in the United States who competes for many of the same markets with the Thai farmer earns between two and two and one-half times more per ton²—Thai farm prices have increased substantially over the past two years, restoring hope that the income incentive will increase (see Table III). Much of this income and incentive is offset, of course, by the increase in farm costs. But the net increase in farm income appears to be enough to allow for a slight redistribution of the income from city to countryside.

This recent rise in price has been felt seriously by Thailand's urban population, which paid nearly 80 per cent more for rice in late 1974 than they did in late 1972. During the same period the overall cost

of living increased 36 per cent. Since the domestic rice price is among the most prominent grievances of the urban population's struggle against inflation, it is also one of the hottest political issues in Thailand today.

The Thai government is facing a critical choice. It must help promote food production by providing more income incentives to farmers, yet it must try to retard inflation by holding down the price of rice at the risk of discouraging agricultural development. This choice comes at a most awkward time of political instability in Thailand. The student rebellion of 1973 brought about a weak caretaker government in 1974 whose only clear mandate and purpose was to hold a national election in early 1975. The rice price issue was handled by raising the premium, on the one hand, while, on the other, declaring greater government support for the farmer through use of premium proceeds for price subsidies, marketing facilities, and credit.

Since a strong farm or social reformist vote did not emerge victorious in the election, it is unlikely that the rice price structure will be allowed to change drastically. The urban consumer's interests will be given high priority in the continuing struggle against inflation. At the moment the best the government can do for farmers is to make promises, declare their support and provide as much money for agricultural development as the national budget will allow. The best the farmers can hope for is more government assistance through institutional channels, a strong international demand for rice to allow prices at least to keep pace with increasing costs, and agrarian reform.

Land Tenure and Productivity

That low farm incomes affect adoption of new technology is fairly clear; that conditions of land tenure can also create disincentives to increase productivity is more difficult to discern.

The average size farm in Thailand is about three hectares; but most farms are smaller. This means that in the Chao Phraya Plain farms larger than ten hectares (there were 65,000 of these according to a

2. Rex F. Daly, *Thailand's Agriculture: Trends, Prospects and Problems*, Office of Agricultural Development, United States Operations Mission, Bangkok, May 1974.

1963 survey)³ represent ten per cent of the farms but 30 per cent of all land. Conversely, 25 per cent of the farms are one and one-half hectares (there were 186,000 such farms in 1963), representing only 4 per cent of all land.

Farm size, as one of the recent field studies on adoption of new technology in the northern part of the Chao Phrya Plain has demonstrated, is of considerable consequence when efforts are made to promote more modern agricultural technology.⁴ Under optimum conditions farmers with both large and small holdings were willing to use fertilizer. However, fertilizer use was sustained at a higher level over a longer period of time on the larger farms. Apparently the smaller farmers could not generate enough capital to sustain the expensive input.

Another problem facing small farmers is that often they do not own the land they till; nor have they been in a sufficiently strong position vis-à-vis their landlords to bargain for favorable terms of rent. Ownership problems are particularly acute in the Chao Phrya Plain and seem to be getting worse. Before World War II, 35 per cent of all farmers were renting all or part of their land. A 1953 survey showed 49 per cent paid rent. In 1964 this figure increased to 56 per cent.

These figures by themselves do not fully indicate the seriousness of the situation. A tenant farmer can presumably be as productive as an owner assuming the returns are satisfying. But when the terms of rent are examined, the plight of the tenant becomes distressing. According to the "Act Controlling the Hire of Paddy Land" of 1950 a fair rent was set at five to 25 per cent of a harvest. Leases were to be for a minimum of five years. No rent could be determined before a harvest, and rights of the tenant were to be heritable but not transferable.

3. National Statistical Office, *Census of Agriculture*, Bangkok, 1963.

4. Brooke Greene, *Rate of Adoption of New Farm Practices in the Central Plain, Thailand*, Department of Agricultural Economics Occasional Paper No. 41, Cornell University.

This act is now virtually unenforced. The Ministry of National Development in 1965 claimed that 75 per cent of all leases in Thailand were for one year only.⁵ It further claimed that most rents were being paid in fixed quantities of produce rather than in percentages, that cash rents were becoming more common, and that it was not unusual for landlords to receive 50 per cent of a crop.

The impact of adverse rental terms on productivity is hard to specify, but almost all productivity analyses show yields on rented land to be about 10 per cent less than on land owned by the farmer. And while little empirical evidence is available to illustrate other effects of tenancy practices, it is reasonable to assume that investments in farm improvements are less likely to occur on rented land. The same report of the Ministry of National Development claims that income per hectare for the land owners in the Chao Phrya Plain in 1965 was \$31, for part owners, \$18, and tenants \$8. The average net annual income for the same categories was \$274, \$164, and \$44.

Within the past year these conditions have become as controversial as the farm price for rice. But the government seems more willing to undertake reform of rural social institutions than to restructure prices. This is due to two interrelated developments. First, the fall of the Thanom regime in 1973 removed the heavy lid the military had kept clamped tightly on all unorthodox politics. Student groups and vocal student leaders joined farmer groups and outspoken rural left-wing leaders in creating a highly visible fuss about the miserable and deteriorating rural conditions. And Thai farmers seemed sufficiently upset to overcome their customary passivity. Together, this produced a continual though modest flow of farmers into Bangkok to demonstrate and protest against such problems as the price of rice, specific instances of eviction from farms, loan sharks, and government failure or corruption.

5. Given in A.N. Seth "Report on Land Reforms in Thailand," in Department of Land Development National Seminar on Land Problems and Policies in Thailand (Proceedings), Bangkok, 1970, p. 155.

The second recent development is less clear, but there seems to be a growing flow of capital into the agricultural sector in general. Some investments may be going into rice farms because of increased rice prices. Other investments are clearly going into sugar, pineapple, and rubber cultivation. In the case of rice land, renewed economic interest has led to termination of leases as landlords want to reclaim working control. Farmers, some of whom are growing rice, are being evicted from lands to make way for the larger, commercial farm operations. Undoubtedly investment is being attracted to the agricultural sector because of generally high food prices. There may also be a diversion of capital from the manufacturing sector in view of high production costs and worldwide recession.

The origin and direction of this economic trend are still uncertain, but the impact on rural society is becoming alarmingly clear to the government. Farmers want more support in their struggle to avoid foreclosure and eviction, as the farmers' protest rallies in Bangkok demonstrate. And the government has begun to respond. A land reform law has been drafted. This by no means assures its success; in fact, land reforms in Southeast Asia are generally failures. But it does testify to the emergence of reformist forces within the government. Similarly, new credit schemes are being devised along with cooperatives and general infrastructural improvements.

The Politics of Productivity

Increased productivity and the maintenance of Thailand's important role as one of the world's leading rice producers will depend to a large extent on the policies followed by the new government.

The effort to keep inflation in hand probably will discourage any relaxation of the rice premium. The key struggles, therefore, will be concerned with two fundamental issues. The first and most heated will probably be over the draft land reform. To be effective, the final law will have to cut through many powerful landed interests. Coming at a time when capital is flowing into the agricultural sector, the land reform effort will inevitably create immense controversy.

Bureaucrats and politicians sensitive to the needs of the small farmer are likely to find less resistance to their efforts to direct premium revenues into promoting such programs as agricultural extension and education, research, institutional credit, transportation and irrigation and, as already noted, price support programs. Many of these are long established programs, but have been subject to bureaucratic inefficiencies and corruption. Co-operatives, for example, are in a bad state. Institutional credit at respectable rates is reserved only for those who have title to land—not more than 40 per cent of all farmers. And there is only one agricultural extension agent per 3,400 farmers.

Mobilizing the bureaucracy to achieve higher efficiency and output levels will in itself be a major political effort. But there is real hope that aroused political consciousness on the part of the farmers will stimulate more concern and harder work by the government on their behalf. It is now generally recognized that continued low prices and lack of support will only aggravate farmers' disaffection with Bangkok and create serious political crises in the future, while low productivity jeopardizes Thailand's own self-sufficiency in rice at a time of world food shortages.

