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INTELLIGENCE MEMORANDUM

THE POTENTIAL FOR INCREASED
FOOD PRODUCTION IN CONTINENTAL
SOUTHEAST ASIA UNDER
CHINESE COMMUNIST CONTROL

DIRECTORATE OF INTELLIGENCE

Office of Research and Reports

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W A R N I N G

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THE POTENTIAL FOR INCREASED FOOD PRODUCTION
IN CONTINENTAL SOUTHEAST ASIA
UNDER CHINESE COMMUNIST CONTROL*

Summary

Communist China's growing population and the poor prospects of substantial improvements in domestic agricultural production raise the Malthusian specter of increasing food shortages. The question therefore arises as to whether neighboring rice-producing countries could, under Chinese control, make a significant contribution to China's food supply. It is concluded that Communist China would not find the answer to its food problems in a takeover of the surplus rice producers of Southeast Asia -- Burma, Thailand, Cambodia, and South Vietnam.

The Southeast Asia "rice bowl" accounts for about one-half of the world's exportable rice surplus; net exports from the region totaled about 3.3 million tons of milled rice in 1965. However, the limited increase in the area's rice output that is feasible at low cost under favorable conditions would not enhance China's food supplies significantly, and the capital inputs required for a substantial increase are not likely to be forthcoming. Increased labor inputs from a program of resettlement of Chinese farm laborers could prove counterproductive. Although production of some other food crops could be expanded more dramatically than rice, achievable levels would remain relatively low, and part of the expansion would probably occur at the expense of rice production.

Realistically, the probable social and political dislocations resulting from a takeover would preclude any significant

* The estimates and conclusions represent the best judgment of this Office as of 3 March 1966.

increases in the area's food surplus in the foreseeable future and might well reduce it, as was the case during the Japanese occupation in World War II. It is possible, however, that the potential for a relatively small food increase would provide China with an added inducement for a takeover it regarded as desirable on political grounds.

Introduction

The population problem in China raises the question as to whether the Chinese might be able to make up domestic food shortages by taking over neighboring countries with a rice surplus and exploiting their potential for producing additional food. The following analysis has been limited to the four countries of Southeast Asia that have normally been surplus producers. Favorable conditions are assumed in order to isolate the problem -- that is, that China's control of the area could be asserted without cost, that no damage to productive capacity would occur from a takeover, and that the populace would not resist China's moderate efforts to expand food production. A hypothetical example is employed to show that the potential expansion of food production in continental Southeast Asia, even under these favorable conditions, would not justify a Chinese Communist takeover on economic grounds. Less favorable assumptions, which would be more realistic, would strengthen this conclusion.

Rice

Rice has been historically the food staple of Southeast Asian countries despite natural conditions that are less than ideal for its growth. The traditional approach of farmers to its cultivation and the absence of concerted government programs to improve production have kept yields and output below achievable levels. Consequently, there is an opportunity to increase production by increasing acreage and yields through four means: (1) introduction of improved varieties, (2) improved cultivation techniques, (3) expanded use of fertilizers, and (4) improved water control. Maximum results can be achieved only by introducing these improvements in combination, but favorable results could be realized by applying only the first two methods, which are relatively inexpensive. Except for some simple improvements in water control it is unlikely that Communist China could supply the resources necessary for introducing the last two methods; if such resources were available, they could more appropriately be used to improve China's domestic food production.

To provide a benchmark of potential production of rice in the four countries, the performance record of 1964/65 (Table 1) has been recalculated (Table 2) on the basis of two key assumptions: (1) that a 5-percent greater area had been devoted to rice production, and (2) that 25-percent greater yields per hectare had been achieved (see Figure 1). The assumptions are generous but achievable, given a concerted educational program and the discipline of nonhostile populace. A 5-percent increase in acreage could be achieved by an expansion of cultivable area and by additional double cropping on a moderate scale. Such an expansion would be less than one-half the increase in acreage realized in these countries as a group over the past decade but is about all that

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could be expected in the short run because of natural limitations. A 25-percent greater yield is feasible with improved varieties and greater care in cultivation plus a relatively inexpensive extension of water control. Although such an increase in yields is much greater than has been achieved in the area in the past decade, the modest efforts of the Thai government have helped that country realize a 19-percent improvement during the past ten years. Under these assumptions the total production of paddy rice* in these countries in 1965 would have been 31 percent, or 7.9 million metric tons, greater than the 25.4 million tons actually grown.

Two considerations suggest that a takeover of these countries for a food surplus of this magnitude would not be profitable for China. In the first place, several years of effort would be required to initiate the measures postulated, even under favorable conditions. In the time required for a program to produce these results, population increases at present rates in these countries would absorb most of the increase, and accordingly, an absolute increase in the area's surplus of 7.9 million tons would require much more than the 31 percent production increases postulated (see Figure 2). In the second place, an increase of 7.9 million tons in the area's surplus, even if available now, would be a relatively small contribution toward China's needs. This amount is equal to 10 percent of China's 1965 rice production of about 80 million tons (of which 900,000 tons on a paddy basis were exported) and constitutes only 4.5 percent of the more relevant total estimated food grain production of about 175 million tons. If all of the area's current surplus of 4.9 million tons of paddy rice were added to the 7.9 million potential increase in production, the resultant 12.8 million tons would represent 7.3 percent of China's present food grain production. This would be the most optimistic estimate and is not likely to prove feasible since the favorable conditions assumed above are not likely to be realized. The caloric contribution of this rice to China in percentage terms would be approximately the same as the production percentages cited above.

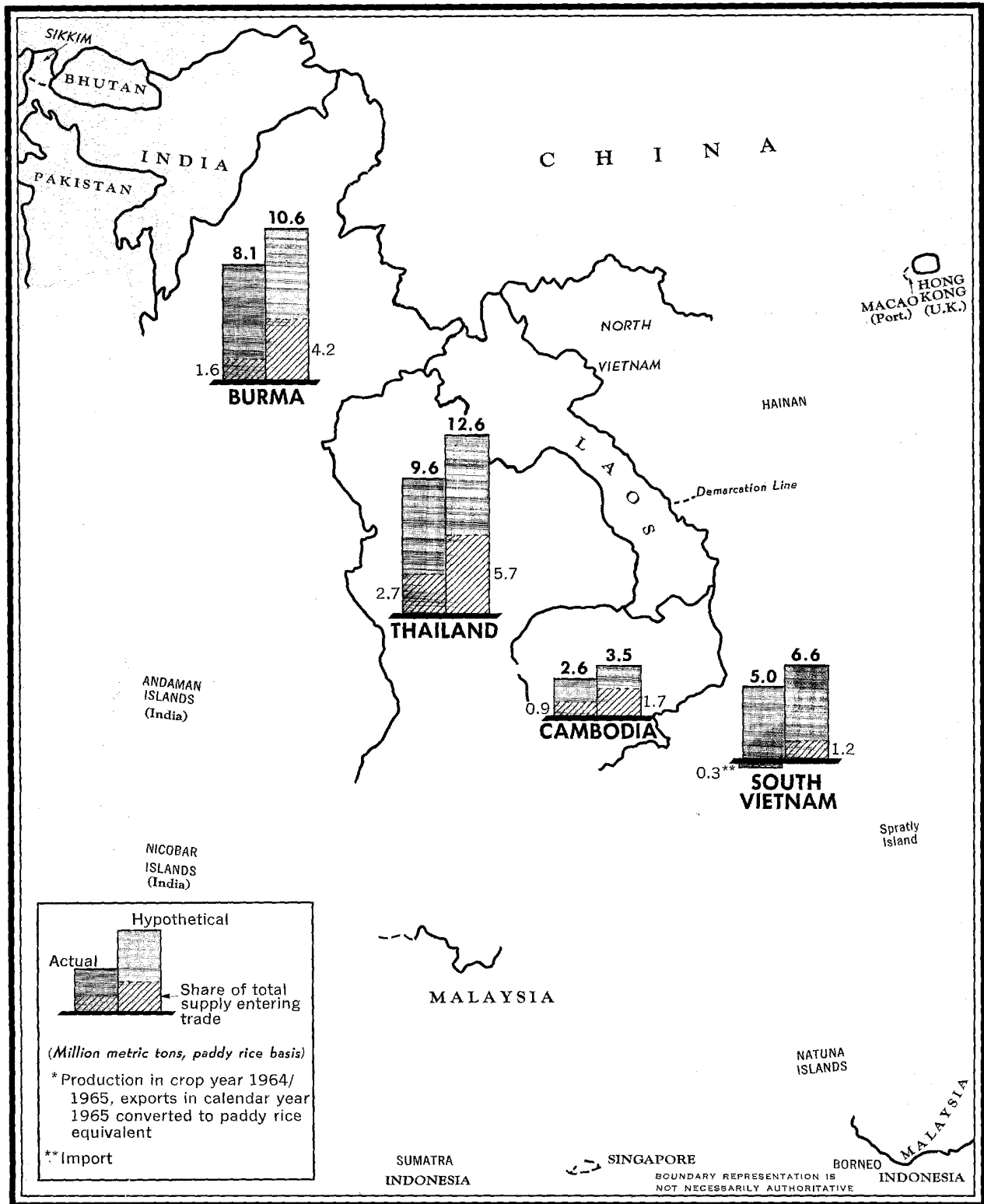
Substantially greater increases in output could be achieved by expanded use of fertilizer and improved water control. The Pa Mong project of the Mekong Basin development program, for example, will irrigate an additional 800,000 hectares in Thailand. Fertilizer and water control programs would, however, require enormous capital investments. Much of the investment which has occurred in Southeast Asia in these fields has employed Free World assistance, which would be unavailable to the area under Chinese domination, and the Chinese would find it impractical to make the attempt.

* Unless noted, all tonnages are in paddy terms. Milled rice reduces to about two-thirds of paddy equivalent.

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Figure 1

**Actual and Hypothetical Production and Export of Rice
in Major Producing Countries of Continental Southeast Asia, 1965***

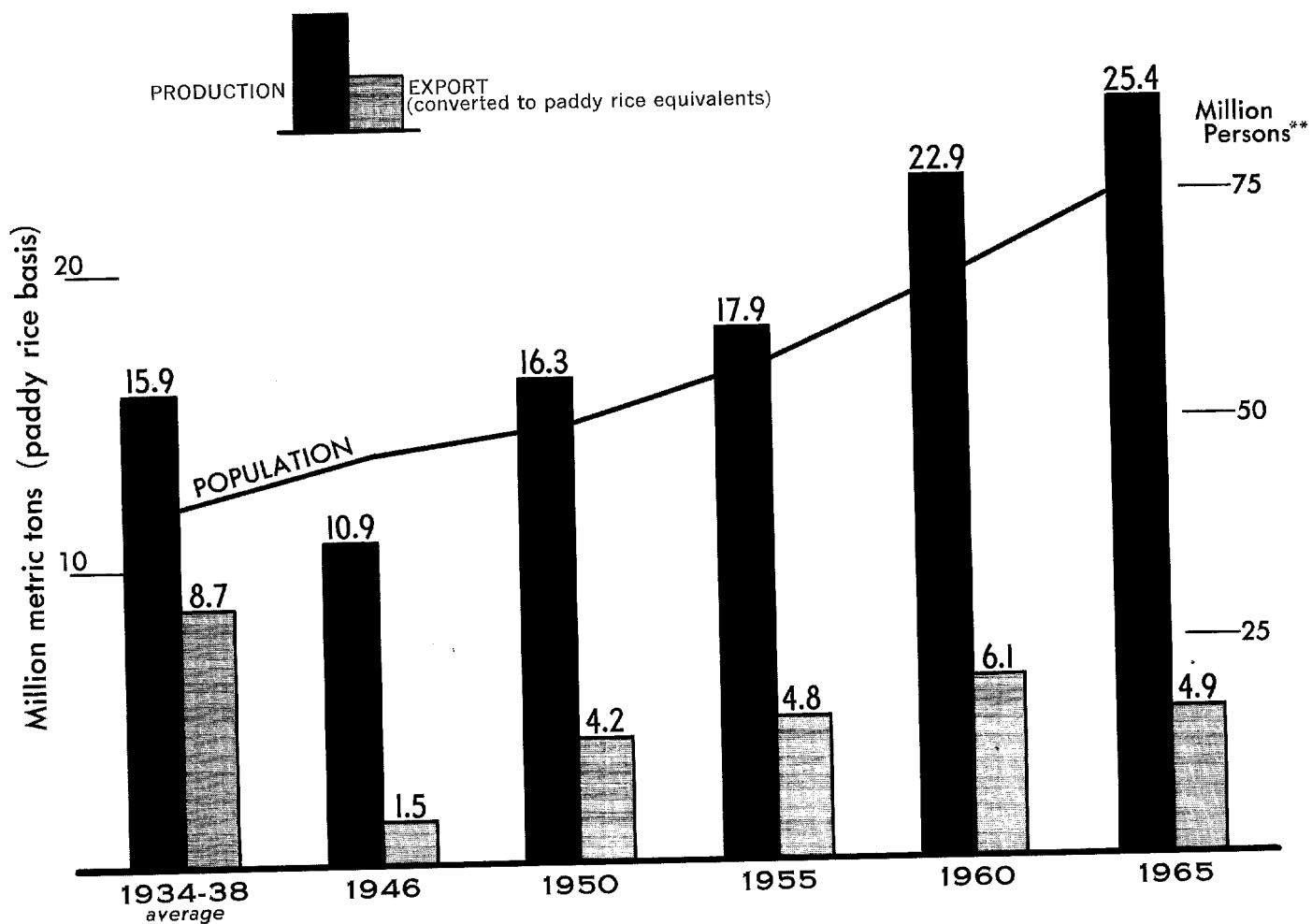


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Figure 2

Production and Export of Rice in Continental Southeast Asia in Selected Years*



*Production in crop year (the year ending in the stated year), export in calendar year. Countries: Burma, Thailand, Cambodia, South Vietnam.

**Midyear population. Population data shown for 1934-38 average are for 1937.

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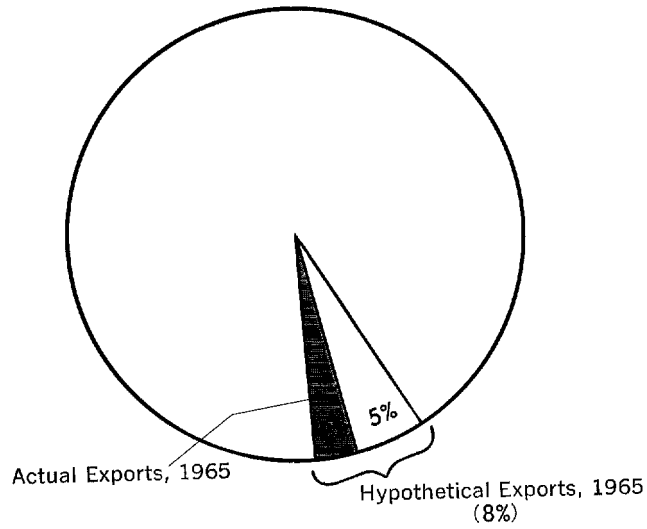
A large-scale movement of Chinese to these countries is unlikely to overcome the above limitations on production increases, as labor shortage is not a significant problem in these countries. It might be easier for Chinese laborers to improve techniques on land now being farmed than to teach indigenous farmers, but this would only increase the underemployment that presently exists among the local agricultural population. If the Chinese were to attempt to cultivate additional land, production would have to be extended to areas of lower quality and yields would tend to decline. The outcome would be only slightly less negative if the Chinese were to take the best land for themselves and drive the indigenous population to the marginal lands. As indicated above, the primary requirement for significant increases in agricultural production is capital investment, and the indigenous people, under well-managed programs, could increase output to the degree feasible without such investment. It is also noted that the Communist approach has not markedly improved agricultural yields in other countries and that native reaction to a large influx of Chinese would almost certainly have an adverse effect on agricultural output. On balance it is believed more likely that production would be improved by Chinese management of the area's present population than by the migration of Chinese farmers. The most that China would be likely to gain from a migration is slight temporary relief from its population pressures. This could only occur at the expense of Southeast Asia's present per capita food consumption and at the risk that the area for many years would fail to produce the surplus that is feasible by other means.

Other Food Crops

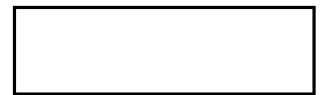
The only other food grain of importance in these countries is maize. Total production of maize exceeds one million tons, most of which is exported. Thailand is by far the most important producer of maize in the area and production is now more than five times the low production of 1958. Such rapid expansion, however, is not likely to continue; if a further rapid expansion were attempted in these countries, it would probably be in part at the expense of an expansion in rice acreage. One million tons is the equivalent of 1 percent of China's production of food grains other than rice and 0.6 percent of China's total food grain production. The present production of maize and the assumed maximum rice surplus potential of the area through the introduction of low-cost measures would account for 8 percent of China's present food grain production (see Figure 3). Data on production of other food crops in this area and in China do not permit ready comparison, but present and likely exports of other crops from these countries constitute a negligible fraction of China's present requirements.

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Actual and Hypothetical Exports of Food Grains from Continental Southeast Asia as a Share of Communist China's Production of Food Grains, 1965



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Table 1

Actual Production of Rice in Major Producing Countries
of Continental Southeast Asia
Crop Year 1964/65

	Production (1,000 Metric Tons Paddy Rice)	Area (1,000 Hectares)	Yield (Kilograms per Hectare)	1965 Exports (1,000 Metric Tons Paddy Rice Equivalent)
Burma	8,100	5,100	1,588	1,650
Thailand	9,625	5,995	1,606	2,700
Cambodia	2,643	2,240	1,180	900
South Vietnam	5,031	2,555	1,969	-350
Total	<u>25,399</u>	<u>15,890</u>	1,598	<u>4,900</u>
Milled Basis				3,300

Table 2

Hypothetical Production of Rice in Major Producing Countries
of Continental Southeast Asia a/
Crop Year 1964/65

	Production (1,000 Metric Tons Paddy Rice)	Area (1,000 Hectares)	Yield (Kilograms per Hectare)	1965 Exports (1,000 Metric Tons Paddy Rice Equivalent)
Burma	10,630	5,355	1,985	4,180
Thailand	12,640	6,295	2,008	5,715
Cambodia	3,469	2,352	1,475	1,726
South Vietnam	6,603	2,683	2,461	1,222
Total	<u>33,342</u>	<u>16,685</u>	1,998	<u>12,843</u>
Milled Basis				8,669

a. Assuming (1) 5-percent greater area than actual, (2) 25-percent greater yield than actual, and (3) all increases in production available as exportable surplus.

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