№ 139

CIA/RR EM 65-21

August 1965

INTELLIGENCE MEMORANDUM

NORTH VIETNAM:
DEVELOPMENTS AND PROSPECTS FOR FOOD CROPS

DIRECTORATE OF INTELLIGENCE

Office of Research and Reports

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Approved For Release 2006/05/24 : CIA-RDP78T02095R000800070023-0

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NORTH VIETNAM: DEVELOPMENTS AND PROSPECTS FOR FOOD CROPS*

Summary and Conclusions

North Vietnam produced about 4.5 million metric tons (mt) of rice in 1964. This crop, including a bumper harvest of early rice and a poor harvest of late rice, was slightly below the average for the period 1959-63. The harvest of subsidiary crops (beans, corn, sweet potatoes, and manioc), though small in comparison with the rice harvest, was the best on record. The 1965 prospects for the early rice crop, which normally accounts for about one-third of the total rice harvest, appear to be good.

Although the agricultural performance in North Vietnam in 1964 was an improvement over that of 1963, it was not sufficient to give more than a temporary respite to the tight food situation. Per capita production and consumption of rice have declined during the past 5 years, and the small increases in the production of subsidiary foods in these years have not been sufficient to make up the difference. The average daily per capita consumption of food is believed to be several hundred calories below minimum requirements for normal body health and activity.

The outlook for agriculture in the next 5 years is not bright. Management problems, the lack of sufficient capital investments for large-scale water conservancy projects, and the limited possibility of expanding agricultural acreage make significant increases in agricultural production unlikely. Furthermore, the quantity of chemical fertilizer available will not meet minimum needs unless imports are substantially increased over present levels.

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* The estimates and conclusions in this memorandum represent the best judgment of this Office as of 15 July 1965.

1. Production of Rice and Subsidiary Crops

About 4.5 million mt of rice were produced in North Vietnam in 1964, about 215,000 mt more than the very poor harvest in 1963 but slightly below the average of the previous 5-year period, 1959-63 (see Table 1).

Table 1

North Vietnam: Production of Food Crops
1959-64

Thousand Metric Tons

Year	Paddy Rice			Subsidiary Crops a/
	Spring Crop	Fall Crop	Total	
1959	1,768	3,425	5,193	512
1960	1,161	3,051	4,212	455
1961	1,719	2,932	4,651	720
1962	1,614	2,928	4,542	728
1963	1,565	2,731	4,296	649
1964	1,778	2,734	4,512	815 b/

a. Subsidiary crops are converted to paddy rice equivalents on the basis of one unit of beans or corn or four units of sweet potatoes or manioc to one unit of paddy rice.
b. Preliminary.

The production of early rice, which is harvested in the late spring and early summer and which accounts for about one-third of the total rice harvest in the country, was a record 1.8 million mt. Better-than-average moisture conditions in late 1963 and early 1964, normally the dry season, tend to support the regime's claim of a bumper early rice crop, but a portion of the late (autumn-harvested) rice crop in the southern provinces was damaged by typhoons. Although no final production figures have been released, the late crop, which normally accounts for about two-thirds of the total rice harvest, is estimated to have been about 2.7 million mt, or about equal to the poor fall crop of 1963.

About 815,000 mt of subsidiary crops, in terms of paddy rice equivalents, were produced in 1964. This total is a record harvest (see Table 1) and was primarily the result of favorable weather conditions in the spring of 1964. The spring harvest normally accounts for 80 percent of the total subsidiary crop output of the country.

2. Food Crop Situation

In spite of an increase in the production of rice in 1964 over 1963, the food situation remains one of North Vietnam's most important economic problems. The production of rice, which accounts for about three-fourths of the total caloric intake of the population, has declined on a per capita basis during the last 5 years. Efforts by the regime to offset this decline by increasing the production of the less popular subsidiary foods, such as manioc, sweet potatoes, corn, and beans, have only been partly successful (see the chart). Although North Vietnam has been a net importer of food since 1961, the quantities involved apparently are not sufficient to relieve food shortages.

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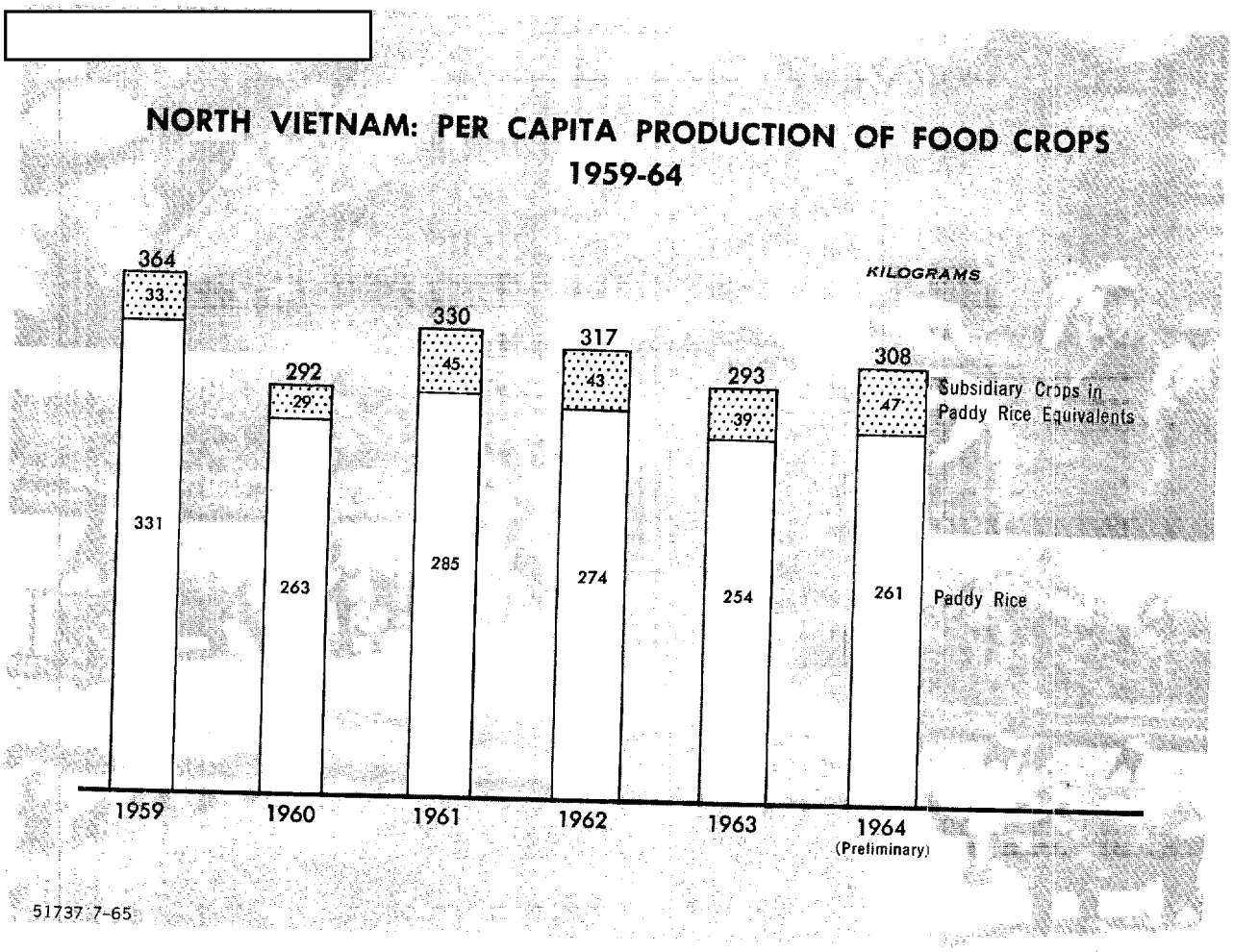

The decline in the per capita availability of food is reflected in official statistics. According to these statistics, the annual per capita consumption of milled rice declined from 160 kilograms in the food

year 1959/60 to 148 kilograms in 1963/64. It is not believed that the 1964/65 level of food consumption will differ substantially from the 1963/64 level.* Meat is strictly rationed and annual per capita consumption has been declining since 1960. The availability of fish and vegetables, however, is believed to be adequate in most areas.

In recent years the average annual consumption of food has amounted to about 1,900 to 2,000 calories per person per day, of which rice and other staples accounted for about 80 percent. This caloric intake is somewhat below the level of the 2,300 calories estimated as a minimum per capita requirement for normal body health and activity.** Because of food distribution problems, some sectors of the population probably have suffered more severely than these figures imply.

3. Prospects for 1965

Prospects for the 1965 early rice crop are good. North Vietnamese claims of expanded rice acreage and timely transplanting suggest that the reported drought conditions during the first 3 months of 1965 did not seriously interfere with the early stages of rice growth. Officials claim that the rains in mid-April eliminated the threat of drought and that the rice plants were growing well as of the end of May, when harvesting operations began. The early drought conditions may have decreased prospects for subsidiary and industrial crops.

There is no evidence available that US bombing of North Vietnam has done any harm to the early rice crop. In fact, in an article in the 27 June issue of the Soviet agricultural newspaper Sel'skaya zhizn' (Rural Life) it was stated that, in spite of the flights by US aircraft, the harvest was carried out 5 to 10 days earlier than last year. Bombing during May, June, and July, however, might have an adverse effect on the late rice crop. The repair of bomb damage might necessitate the use of some agricultural labor at a time when manpower requirement in agriculture is at a maximum.

4. Outlook Through 1970

Prospects for overcoming the agricultural stagnation in North Vietnam in the next 5 years are not bright. Agricultural production -- especially on a per capita basis -- has declined since 1959 despite official claims of expansion of irrigated areas, increased availabilities

* There are no separate statistics on the consumption of subsidiary foods, and they probably are included in the "rice consumption" figures, expressed as a rice equivalent. However, subsidiary foods used for livestock feed and industrial use would not be included in the rice consumption figures.

** Determined by the Interdepartmental Committee on Nutrition for National Defense for the People of South Vietnam.

of chemical fertilizer, and increased capital investments in agriculture. This decline is believed to have been due in large measure to problems of management and incentives that have plagued the agricultural cooperatives since 1959. Because of basic peasant discontent with collectivization, these problems probably will not be solved by 1970.

Even with good management, North Vietnam probably could not increase agricultural production significantly during this period. The possibilities of expanding agricultural acreage are limited, and the North Vietnamese officials recognize that any substantial increases in the production of food crops must come about mostly through increased yields from the existing acreage. The increased use of fertilizer, particularly chemical fertilizer, offers the most likely means of increasing agricultural yields. In 1964, domestic output of chemical fertilizer was only 177,000 mt, consisting exclusively of phosphorus fertilizer, much of which was a crude variety, having minimal value to agriculture. Imports of chemical fertilizer added an estimated 173,000 mt, 90 percent of which was nitrogen fertilizer, primarily for use on the rice crop. It has been estimated that by 1970 North Vietnam would need a minimum of 800,000 mt of chemical fertilizer to feed its increased population at the present low level of consumption.* In view of the scant progress to date and the possible economic dislocations caused by continuing military operations, it is estimated that the domestic production of chemical fertilizer will not exceed 500,000 mt by 1970. The import of 300,000 mt of fertilizer -- mostly of the nitrogen type -- would therefore be required to meet these minimum needs. Total costs of such imports, based on current prices, would be about US $15 million.**

Agricultural production could also be substantially increased by expanding and improving the water conservancy facilities. The regime is well aware of this possibility and has increased capital investments in water conservancy from less than 5 percent of total investments in 1960 to more than 10 percent in 1963. The regime, however, probably will be unable to increase the irrigated area effectively. Much of the acreage claimed to have been put under irrigation since 1955 is irrigated by medium-sized and small irrigation projects that are believed to be undependable both in terms of adequate water supply during drought and proper drainage during floods. The area subjected to droughts and floods in recent years, though fluctuating widely from year to year, has shown a general decline, and the very serious floods and drought of 1963 indicate that the problem is far from being solved. Large-scale capital-intensive irrigation and drainage projects -- necessary for dependable water control -- still are only in the preliminary planning stage and probably will not be available to contribute significantly to increased food production in the next few years.

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* On the basis of an estimated requirement of about 5.4 million mt of rice, or about 900,000 mt above the 1964 production level. To produce this additional amount, 450,000 mt of chemical fertilizer would be needed in addition to the 350,000 mt estimated to have been available in 1964.

** A more detailed description of the chemical fertilizer situation in North Vietnam and prospects through 1970 is given in the Appendix.

APPENDIX

CHEMICAL FERTILIZER IN NORTH VIETNAM

1. Production

a. Through 1965

The production of chemical fertilizer in North Vietnam rose slowly from 36,000 mt in 1939 to 177,000 mt in 1964. Although the production goal for 1965 is 240,000 mt, output may not exceed 200,000 mt. Not only does current output fall far short of the level needed by agriculture, but it also consists exclusively of phosphorus fertilizer of which about one-half is of low quality derived from crushed phosphate rock. Moreover, there is as yet no production of chemical fertilizer containing nitrogen, the nutrient most needed for growing rice.

Although a number of small plants scattered throughout the country account for most of the fertilizer production, the higher quality phosphorus fertilizer is made at just two plants. The largest and most significant was built by the USSR at Lam Thao, 40 miles northwest of Hanoi, and has an annual production capacity of 100,000 mt of calcium superphosphate. The plant began production in June 1962 but because of equipment difficulties has not yet reach full-capacity output. The second plant, built by Communist China in September 1963 at Van Dien, about 6 miles south of Hanoi, has an annual production capacity of 20,000 mt of calcium-magnesium phosphate, which is a less effective fertilizer than superphosphate. This plant also has encountered equipment difficulties as well as inadequacies of raw materials.

b. Through 1970

A sizable increase in North Vietnam's output of chemical fertilizers by 1970 is contingent on realizing added capacity from new and expanded productive facilities. If, by 1970, fertilizer plants built with Soviet and Chinese Communist aid are completed and reach full operating capacity and if the productivity of the small plants turning out crushed phosphate rock is improved, North Vietnam's annual output of chemical fertilizer could reach a maximum of 600,000 mt. However, because of the slow progress to date and possible economic dislocations caused by continuing military operations, output in 1970 probably will not exceed 500,000 mt.

Construction work already is underway at facilities included in the programs for Soviet and Chinese aid to North Vietnam. The USSR is believed to be expanding the Lam Thao Superphosphate Plant by 50,000 mt and may have the plant operating with an annual capacity of 150,000 mt in 1966. The Chinese are building North Vietnam's first

nitrogen plant, the Ha Bac Nitrogen Fertilizer Plant at Phu Lang Thuong, 30 miles northeast of Hanoi. There is evidence that this plant will manufacture ammonium nitrate fertilizer when construction is completed in 1966 and could produce annually about 100,000 mt in full-capacity operation. Detailed data are lacking on plans for future expansion of the plant, but available information implies that added facilities for the manufacture of ammonium chloride are to be completed in 1970 and the plant's annual productive capacity will then be 200,000 mt.

2. Imports

North Vietnam relies heavily on imports from both Free World and Communist countries to supplement its small output of chemical fertilizer. Available information suggests that imports in 1964 amounted to 173,000 mt, valued at somewhat over US $8 million. Of this total, about 90 percent consisted of nitrogen fertilizer. In 1965, imports of chemical fertilizer may be affected by priorities for other materials to sustain the war effort and, accordingly, could decline to 150,000 mt. It is believed that, by 1970, an import on the order of 300,000 mt of chemical fertilizer, mostly of the nitrogen type, would be needed to close the gap between estimated domestic output of 500,000 mt and a minimum agricultural requirement of 800,000 mt. An import of 300,000 mt would cost about US $15 million at current prices.

3. Supply

a. Through 1965

Domestic production and imports of chemical fertilizer in 1964 are believed to have contributed about equal amounts to North Vietnam's total fertilizer supply, estimated at about 350,000 mt, an amount possibly exceeding all previous annual supply levels. The total supply of chemical fertilizer in 1965 is expected to be not greater than the 350,000 mt available in 1964. The estimated supply of chemical fertilizer that will be available in 1964, 1965, and 1970 from production and imports is given in Table 2.

Table 2

North Vietnam: Estimated Supply of Chemical Fertilizer
1964, 1965, and 1970

Thousand Metric Tons

Year	Production	Imports	Supply
1964	177	173	350
1965	200	150	350
1970	500	300	800

b. Through 1970

Although it is not possible to measure precisely the probable total supply of chemical fertilizer in North Vietnam by 1970, it now seems that the supply available will not exceed an agricultural requirement of 800,000 mt. This amount is the minimum needed to keep per capita output of food from falling below current levels. If the Vietnamese succeed in producing 500,000 mt in 1970, as estimated, they would have to import about 300,000 mt or about double the present level of imports.