

ERS 123

ECONOMIC RESEARCH SERVICE  
FILE COPY  
DO NOT REMOVE

APR 1965  
ED

# Agricultural Economy

of

# NORTH VIETNAM

5-4-65 Recd. 200 Advance in Inf-OMS.  
5-4-65 Recd. in OMS-stockroom, 500 copies.  
Total Edition, 2,500 copies. FILE: Far  
East Branch, Foreign Reg. Anal.Div.,ERS.  
INDEX FOR: TITLE & SERIES.

(On April 196 5 checklist)

U. S. DEPARTMENT OF AGRICULTURE  
Economic Research Service  
Foreign Regional Analysis Division

ERS FOREIGN 123

123



## TABLE OF CONTENTS

	Page
Summary .....	v
Introduction .....	1
Agriculture in the Economy .....	2
Physical Environment .....	3
Demographic Aspects .....	6
Land .....	7
Socialist Structure of Agriculture .....	8
Agricultural Production Practices .....	14
Agricultural Production .....	17
Livestock and Livestock Products .....	25
Marketing .....	27
Foreign Aid and Trade .....	28
Food Supply .....	29
Fisheries .....	31
Forestry .....	32
Outlook .....	34
Selected References .....	37

Washington, D. C.

April 1965

## LIST OF TABLES

<u>Table</u>	<u>Page</u>
1	Use of cultivated land in North Vietnam, 1957, 1960, and 1965 plan ..... 9
2	Use of agricultural land in North Vietnam, 1960 ..... 10
3	Acreage of rice affected by drought and floods, by season, in North Vietnam, 1955-63 ..... 17
4	Area, yield, and production of paddy rice in North Vietnam, 1939 and 1954-64 ..... 19
5	Area, yield, and production of specified secondary crops and their rice equivalent, in North Vietnam, selected years 1939-63 21
6	Production of major commercial crops in North Vietnam, 1939, 1956-63, and 1965 plan ..... 22
7	Numbers of major types of livestock in North Vietnam, 1939, 1955-63, and 1965 plan ..... 26
8	Value and composition of imports and exports in North Vietnam, 1955-61 ..... 29
9	Estimated per capita production of major food crops in North Vietnam, selected years ..... 30
10	Fish catch, prewar and annual, in North Vietnam, 1939 and 1955-63 ..... 33

## SUMMARY

North Vietnam is predominantly an agricultural country. The Communist regime, which has controlled the country since 1954, has initiated a program to develop an economy with the main emphasis on heavy industry. Accordingly, allocations of labor, raw materials, and imported plant and equipment have been made by the government. Now, as formerly, investments are made largely by means of forced savings, the major portion of which must be furnished by the agricultural sector.

Agriculture in North Vietnam is characterized by an abundance of manpower, an extremely high man-land ratio, primitive culture, and a very limited amount of capital equipment, and is therefore stagnant. The benefits of tropical climate, which allow year-round cultivation, are modified by comparatively infertile soils, rugged topography, and unreliable rainfall during parts of the year. The country's agriculture is nearly self-sustaining but at a low level of subsistence. The agricultural sector accounts for about 50 percent of the national income, provides a livelihood for about 85 percent of the population, and employs almost 80 percent of the labor force. Nevertheless, farmers depend upon nonfarm sources for a substantial portion of their income.

The country's agricultural production is being reoriented through a series of long-term plans aimed at increasing the multiple-crop area, raising the level of farming technology, improving tools, developing better seed strains, increasing fertilizer application, and expanding educational, experimental, and extension services. Utilization of the land is changing, with industrial crops, secondary food crops, and fodder crops occupying an increasing area at a more rapid rate than the rice area. Higher yields of rice were expected to compensate for shifts in acreage. In actual practice, however, yields have trended downward.

North Vietnam's agriculture has undergone massive institutional changes. Through successive steps of land reform and socialistic organization, almost 90 percent of all peasant families have been incorporated into agriculture's socialist structure. Almost one-half of these families belong to rudimentary forms of collectives (commonly referred to as APC's), which direct production, distribution, and consumption of agricultural production. The remainder belong to more sophisticated collectives.

Ownership of the land and the means of production are vested in these organizations, and all farming activities and the disposition of production are carried on according to state plan. Also, certain state institutions which are designated to provide supplies and credit for agricultural producing units and which act as marketing outlets for these farming units are important cogs in the state's central mechanism. They function within the framework of the government's procurement, marketing, propaganda, and credit media. State farms are exclusively state property and peasants who are employed on them work for wages. Members of the higher order of collective farms--similar to the Soviet kolkhoz--contribute all their property to the collective. Except for private plots and some sideline production, their major source of income is wages determined and paid by the collective.

The livestock industry occupies a subordinate position, but one of increasing importance in North Vietnam's agriculture. It accounted for almost 19 percent (including fish raising) of total value of agricultural production in 1963. Livestock is principally a source of draft power and secondly a source of food and fertilizer. Beef and dairy enterprises are in their infancy, with little or no developed processing. Government attempts to raise hogs collectively have been only partly successful. The major proportion of livestock remains in private hands. Lack of peasant incentive, low level of technology, inadequate feed, and a general developmental lag are major deterrents to the livestock industry.

Traditionally, North Vietnam has been a food-deficit area. Per capita food supplies likely are currently lower than before World War II when daily caloric intake was estimated at between 1,800 and 2,300 calories per person. Rice, meat, animal fat, and sugar are rationed, and the amount consumed depends on the supply available; it is at its lowest point between the fall harvest (October-November) and summer harvest (May-June). Rationing has resulted in more equal distribution of food and has channelled more agricultural raw products into foreign trade.

The country's trade is state controlled, and the major portion (85 percent of exports and 90 percent of imports) is with Communist countries. Agriculture's disappointing output has increased the country's trade deficit even more and has required the export of large amounts of industrial and home-made products which were earmarked for domestic consumption. In 1961, the value of total exports was only 59 percent of total imports. To solve this imbalance, the regime is attempting to increase production of exportable farm products by producing high yielding crops, restricting consumption, and decreasing the import of consumer goods.

Fishing and forestry are important adjuncts to agriculture in North Vietnam. Both are state monopolies administered by the Ministry of Agriculture and Fisheries and the Ministry of Forestry, respectively. Fish is the main source of animal protein in the country. The industry, with its large potential, consists mainly of salt-water fishing, but during recent years greater emphasis has been placed on developing inland fishing. Fishing technology has developed slowly, and most salt-water fishing is confined to shallow coastal waters. Most of the fish are consumed fresh or as fish sauce; only a small portion of the annual catch is processed. The total fish catch in 1961 was about 223,000 metric tons.

Forests occupy 50 percent of the land in North Vietnam, but only about 12 percent of the forests are dense. Most of them are second growth. Evergreen forests, with a large diversity of tree species, are found on the plains and hill areas. At higher elevations, evergreen species give way to deciduous vegetation of subtropical and temperate climate types. Coniferous types, also at higher elevations, occupy only a small portion of the area. Bamboo, the country's major building material, grows profusely on the lower hills and plains, and palms and marsh-loving trees are found along the shoreline. Other forest resources include various spices, astringent materials, aromatic substances, and dyes, as well as a variety of wild animals. State control has been only partially effective because of the low level of technology. Production of timber increased from 362,380 cubic meters in 1955 to 992,300 cubic meters in 1961.

Wheeler DU 8-5455  
Clark DU 8-4026

Washington, May 7, 1965

For P. M. Release May 10

#### USDA Reports Agricultural Problems Trouble North Vietnam:

A faltering agriculture is undermining North Vietnam's attempts to industrialize, according to a report issued today by the U.S. Department of Agriculture.

The report by USDA's Economic Research Service says farm output has repeatedly fallen short of targets because of mismanaged central control.

North Vietnam is trying to build heavy industry in a primitive agricultural country. The agricultural sector has the dual burden of feeding the population and providing investment resources for new industries, the report explains.

Agriculture has not succeeded. The Five-Year Plan launched in 1961 called for a 148 percent increase in industrial output and a 61 percent increase in agricultural production. In 1963, the industrial goal was revised downward to 119 percent and the agricultural goal to 37 percent. Both revised goals seem beyond reach, the report says.

Because of large industrial imports and agriculture's slow progress, North Vietnam has a staggering trade deficit. In 1961, exports equalled only 59 percent of imports. The regime is forced to export industrial goods earmarked for domestic consumption to keep the deficit from becoming even worse, the report points out.

Historically, North Vietnam looked south for much of its rice, the diet staple. Now it must feed itself. The regime claims self-sufficiency in food, but observers believe the North Vietnamese are eating less than before World War II. Rice, meat, animal fat, and sugar are rationed, the report states.

Farmers prospered briefly after the Communists took control in 1954. Independent peasant farmers responded to land and credit reforms and Sino-Soviet bloc economic aid. Agricultural production rose substantially, the report notes.

But central control of agriculture increased after 1959 and production declined. A sustained drive to create so-called Agricultural Production Cooperatives (APC--a rudimentary form of collectives) brought in 9 out of 10 farm families by 1962. Members in the APC's retain ownership of their possessions, and receive some compensation for their use by the APC. The income of the cooperative is divided according to members' contributions of labor, land, livestock, and equipment.

Further socialization of agriculture has been unsuccessful. Collective farms, called high level cooperatives by the Communist regime, were formed by consolidating several APC's. Members give up all belongings except their house, personal possessions, and a small plot of land, and they are paid only for their labor. Only one-third of all APC's had been consolidated into collective farms by the end of 1964.

Politically reliable, but agriculturally backward lower class peasants were put in charge of the cooperatives. Middle class peasants were agriculturally the most advanced group, but they were considered unsympathetic to the regime. With

incompetent managers, the cooperatives never functioned properly. In 1962, less than half of the cooperatives were able to draft their own yearly production plans, the report observes.

Despite government efforts to the contrary, some semblance of private enterprise continues to flourish on cooperatives. The North Vietnamese government reported in 1961 that half of the income of households in cooperatives came from raising pigs, chickens or ducks for sale, producing handicrafts, raising fish in small ponds, and other private activities.

To raise agricultural production, the regime has expanded cultivated land area 10 percent since 1960. Most of the increase has been in export and industrial crops -- sugar cane, peanuts, soybeans, cotton, and jute -- and secondary food crops -- manioc, sweet potatoes, beans, and corn. Rice acreage has increased only slightly, and it still amounts to over three-quarters of the total cultivated area, the report points out.

While cultivated land increased, yields of rice and secondary crops have fluctuated, generally downward since 1959. Shortage of fertilizer was one reason. Output of chemical fertilizer has not increased as rapidly as planned, and organic fertilizer has increased only slightly. Expansion of crops on less suitable land also contributed to the decline, says the report.

The drive to industrialize rapidly has hindered agricultural development. The regime has diverted major capital investments from agriculture to industry. Small-scale agricultural projects have succeeded by using peasant labor and local resources. But projects such as large-scale irrigation have been neglected because State capital has been unavailable, according to the report.

Single copies of "The Agricultural Economy of North Vietnam," ERS-Foreign 123, are available from the Division of Information, Office of Management Services, U. S. Department of Agriculture, Washington, D. C. 20250.

For P. M. Release May 10

USDA 1456-65



## AGRICULTURAL ECONOMY OF NORTH VIETNAM

By Marion R. Larsen, Agricultural Economist  
Foreign Regional Analysis Division  
Economic Research Service

### INTRODUCTION

The history of Vietnam is one of long subjection to foreign invaders and of internal struggle for power. The Vietnamese were first conquered by the Chinese under the Han dynasty before 100 B.C. and remained under Chinese domination for the next thousand years. They were again ruled by the Chinese from 1406 to 1427; thereafter they were independent until the middle of the 19th century. Internal strife resulted in a division of the country in the 17th and 18th centuries, or for about 200 years. The division was at approximately the present line of demarcation, near the 17th parallel. Thus the current partition of Vietnam into North and South is not unique in its history.

During the last half of the 19th century, the country fell to the French. It remained in French hands until the Japanese occupation in 1940. After the withdrawal of the Japanese in 1945, France tried to regain possession of Vietnam but now encountered a coalition of Vietnamese Nationalists and Communists. The Indochina War that ensued lasted from 1946 to 1954.

The Geneva Conference of July 1954 brought a cease fire, and the country was divided into the Free South and Communist North. North Vietnam emerged with somewhat less than half of the area. The armistice called for biennial elections in both North and South, with the aim of eventual reunification. But as the elections were never held, the truce line at the 17th parallel in effect became an international boundary.

In North Vietnam, economic progress in agriculture has been slow and disappointing, the result of inadequately trained cadre, low level of technology, insufficient capital, and low level of competency in supporting institutions. The country also lacks items to support agricultural production such as chemical fertilizers, insecticides, modern medicines, improved farm equipment, power tools, transportation facilities, and other production requisites. These gaps can be filled neither easily nor quickly. Until they are, the expected increases in agriculture have little chance of being realized. Furthermore, the peasant who now carries the economic burden is not sympathetic to the regime; therefore, the government must sustain the disciplined participation of the peasant in agricultural programs.

Much of the data that follow are from official sources. At best, most of the information on North Vietnam is incomplete, and only sketchy series of statistical data are available for agriculture covering the period of Communist rule. Annual and semiannual summaries of plan fulfillment are available for most years, but statistical data vary considerably among different government agencies. In 1964, a modified summary of agricultural statistics was released which has filled some gaps. Few Western observers have been on hand to assess

official statements and statistics, making it difficult, if not impossible, to form objective evaluations. Despite the upward bias of most of the data on achievement, however, significant trends are apparent.

#### AGRICULTURE IN THE ECONOMY

The economy of North Vietnam is based primarily on agriculture. It furnishes the bulk of the food consumed, most of the raw materials for light industry, and a large portion of exports. Agriculture is the principal occupation of about 85 percent of the population; roughly half of the national income is derived from it. As in most other Communist countries, agriculture has been the lagging sector of the economy. Investments during the First Five-Year Plan (1961-65) were 48 percent and 21 percent for industry and agriculture, respectively.

Despite claims of growing successes in agriculture, official data confirm an almost stagnant situation. According to recently released official statistics, the value of agricultural production in 1963 has increased only 3 percent since 1959. With 1959 equal to 100, the index of the value of agricultural production for 1957-63 in terms of 1956 prices is as follows: 1/

1957-----	80
1958-----	94
1959-----	100
1960-----	91
1961-----	99
1962-----	105
1963-----	103

As a result of the poor crops during 1961-62 (the first 2 years of the First Five-Year Plan), the Communist regime severely cut back the goals for the Plan. This action was necessary despite the large increase planned for investment in the agricultural sector during this period. Although considerable increases in agricultural production occurred between 1954 and 1959, production of food crops since then has lagged behind increases in population. Formerly a food-deficit area depending on the South to supplement its food needs, North Vietnam now claims self-sufficiency in food. The level of consumption, however, is very low. Premier Pham Van Dong has stated that even if the goal, which has been scaled down from 9.5 to 7.1 million tons of food crops (rice, sweetpotatoes, manioc, corn, and beans) in terms of rice, is attained in 1965, there will not be enough grain from domestic production to meet food and other consumption requirements. For this reason, the government has attempted to increase the area of higher yielding crops and to bring over 1 million acres of new land into production during the First Five-Year Plan. In addition, other high-cost projects such as fertilizer plants, irrigation and water conservancy, and machine and tool plants have been undertaken to bolster agriculture.

---

1/ Data for 1960-63 in 1959 prices were adjusted upward by a factor of 105.2 (as derived from official data) to provide comparability with data for 1957-60 in 1956 prices.

North Vietnam's economy was significantly boosted by foreign assistance in the form of grants and long-term loans in the post-1954 period. Agriculture has been identified as the major source of repayment. Consequently, much of the expected increase in farm production must be exported as payment for loans. This requirement, plus reduced imports of consumer goods (primarily food products), a slower pace in developing consumer industries, and the commitment of agricultural production to the development of industry, provide little hope for significant improvements in the level of consumption for the North Vietnamese people.

## PHYSICAL ENVIRONMENT

### Location

North Vietnam is in the northeastern part of the Indochina peninsula in Southeast Asia. It is bordered on the north by Communist China, on the west by Laos, and on the south and east by the Republic of South Vietnam and the Pacific Ocean (fig.1). The country extends over 580 miles between 17 N. and 23 N. latitude. It is almost 490 miles across at its widest part (which is between 102 E. and 108 E. longitude) and narrows to less than 50 miles at its southern extremity. Its coastline extends over 600 miles. Hanoi, the capital city, is on the same parallel as Honolulu, Hawaii. The country is slightly larger (61,292 square miles) than the State of Florida. Compared with Florida, however, it has more than three times as many people but only .31 of an acre of farmland per person compared with 1.05 acres in Florida. It lies wholly within the tropics, but the variations in topography--ranging from sea level to over 10,000 feet--contribute to diverse climatic conditions which make possible the production of many kinds of tropical, subtropical, and temperate zone crops.

### Topography

The terrain of North Vietnam consists of a series of delta lowlands on the Gulf of Tonkin. From the coast, a series of hills and plateaus rise to a mountainous hinterland extending to the borders of Laos and China. Mountainous areas constitute two-thirds to three-fourths of the area. The country's mountains, rising to an elevation of 10,300 feet, are the highest in the Indochina peninsula.

The hilly area of North Vietnam, although small (about one-tenth of the land area), is important in the agriculture of the country. The gently rolling hills rise to about 750 feet above sea level. Perennial tree crops (coffee, tea, hevea, bananas, pepper) and other cultivated crops which do not adapt well to the paddy culture are important in the hill areas. Most of the current land development programs are confined to these areas.

The plains of North Vietnam, though occupying only about one-sixth of the total, are the country's major agricultural areas. The bulk of the population lives here. The plains are made up of a chain of deltas and littoral plains extending from Vinh (18° 40'N.) to Hon Gai (21°N.) and are divided by low mountain ranges. They average 25 to 40 miles in width except for the Bak-bo Delta (Tonkin Delta) which is to the north. It is the largest plains area,



covering about 5,800 square miles. The elevation at the northern end is about 80 feet above sea level. The drop in elevation, therefore, from the top to the sea coast is only 10 to 13 inches per mile.

North Vietnam's numerous rivers are important in the transportation system. By means of an intricate irrigation-drainage system, they also play a necessary role in the production of rice. Despite major efforts for control, devastating floods still threaten during the rainy season. Conversely, an extended dry period may decrease or destroy large areas of crops because of inadequate irrigation facilities.

### Climate

North Vietnam belongs to the equatorial monsoon region. Temperature and precipitation vary considerably throughout the country, mainly because of the differences in latitude and the marked diversity in relief. The climate in general is characterized by two major seasons--the southwest monsoon and the northeast monsoon. From about mid-November to mid-March, generally dry conditions prevail. The rainy season occurs from about mid-May to mid-October. The two major seasons are separated by two rather short, poorly defined transitional periods with some overlapping.

Rainfall varies greatly from year to year and from region to region (see fig.1); these extremes often are devastating to crops. Average annual precipitation ranges from about 50 inches in areas of the northeast to over 140 inches in the highlands in the south.

Except in the higher mountainous areas, moderately high temperatures prevail the year round. The humidity is generally high and debilitating. Temperatures reach their lowest point in January and their highest during June-August during which there is virtually no change in mean temperatures.

### Soils

Soils in North Vietnam are classed as either residual or alluvial. Residual soils are produced by the decomposition of the underlying rock. They occupy the hill and mountain areas, which together comprise about three-fourths of the land surface of the country. Residual soils are mainly Latosols, reddish, friable, and, by U.S. standards, low in fertility. Some of the Latosols are like the red-yellow podzolic soils in southeastern United States. Hard laterite, mainly in the form of gravel, is a common feature in those Latosols on the smooth parts of the uplands. While most of the Latosols are forested, slash and burn (shifting) cultivation is commonly practiced in areas where people live. <sup>2/</sup>

While the fertility of residual soils varies considerably, it generally tends to be low. Fertility is lost rapidly if the land is subjected to clean cultivation; soluble nutrients are soon carried away by percolating water, and organic matter is destroyed quickly by high temperatures and

---

<sup>2/</sup> Forest areas are cut and burned out, farmed for a few years, and then abandoned.

teeming bacteria. On the other hand, many of these soils are responsive to good management, especially to the application of chemical fertilizers. Since most of the residual soils are on hills and mountains, prevention of accelerated erosion may be a problem where the land is cleared for crop cultivation and where the fertility of the soil has been allowed to dissipate.

The alluvial soils, which are composed of sediments laid down by water, occupy less than one-sixth of the land surface of North Vietnam. These soils are found mainly in the Tonkin Delta, in many smaller flat areas along the coast, and in flood plains along most of the rivers and smaller streams. These soils are the most important economically. They sustain the major production of agricultural commodities and are the basis for rice production.

Alluvial soils are highly variable. Although clayey soils are several times as extensive, other textures occur; for example, silt loam on clay, clay on sand, and other complicated sequences. These alluvial soils, particularly the clayey ones, have been used without artificial fertilization for rice production for generations. However, not all alluvial soils are productive. Some are too salty, some flood too deeply, some become too dry and sandy, and some are so plastic and sticky that it is difficult to maintain them in satisfactory tilth. Alluvial soils are generally more fertile than adjacent upland soils but, in many areas, fertility is low, particularly where the annual accumulation of fresh drift (sedimentation) does not occur.

Water control is the most important factor in the use and management of alluvial soils. With improved water control, risks from too much or too little water can be reduced, and favorable responses to other improved management practices--including the use of chemical fertilizer--can be enhanced. Some improvements along these lines have been noted in North Vietnam. Water conservancy projects, including irrigation, flood control, and drainage, have been built in many areas of the country. Also, numerous efforts have been made to stimulate greater peasant participation in the application of larger amounts of natural as well as artificial fertilizers.

Despite these efforts, however, the desired level of soil response to the production effort has not been attained. Yields of most crops have either remained static under Communist rule or have declined; since 1959, yields of essentially all crops have trended downward, according to official data.

#### DEMOGRAPHIC ASPECTS

According to the national census taken March 1, 1960, over 85 percent of the 15.9 million people in North Vietnam were ethnically Vietnamese. Their influence on national life is paramount, for they control political and economic affairs and perpetuate the dominant cultural tradition. Various indigenous highland groups, known collectively as Montagnards, account for essentially all other ethnic groups in the country.

The total population was estimated to be 17.5 million at the beginning of 1965, an average density of 285 persons per square mile; great variations occur in population densities, however. The average density in the three

provinces of Hung Yen, Thai Binh, and Nam Dinh on the lower Red River is over 2,000 persons per square mile. The least populated area is the Tay Bac Autonomous Region in the extreme northwest, composed almost exclusively of Montagnards. This region has 34 persons per square mile. On the average there are about 1,000 persons per square mile in the Red River Delta.

The Vietnamese are basically a sedentary people with strong ancestral ties; hence, they migrate only under extreme circumstances. This characteristic, as well as cultural differences between regions, account for the lack of integration of the hill tribes and delta dwellers. Essentially all those who dwell in the delta areas are Vietnamese. The Montagnards, comprising over 30 different tribes and almost 2.4 million people in 1960, lead isolated lives in the hills and mountains. They sustain themselves in small villages by shifting agriculture and by some herding and hunting.

The country is predominantly rural; about 90 percent of the people lived in rural areas in 1960. Only Hanoi, the capital, and Haiphong, the main seaport, have an urban flavor and populations in excess of 100,000. According to the 1960 census, the populations of Hanoi and Haiphong (including their suburbs) totaled 644,000 and 369,000, respectively.

The labor force in North Vietnam, which has no equivalent in Western terms, constitutes about 50 percent of the population, and almost 80 percent is engaged in agriculture. Although the country has a large reservoir of workers, its labor pool is young. Moreover, the workers have not developed the desirable level of skill; after 10 years of Communist rule, much of the training is still at the apprentice level. Within the last year or so, however, considerably more emphasis has been placed on technical training of the new generation of Communist-oriented persons.

#### LAND

The area of North Vietnam was categorized by use into three broad general classifications by the Directorate General of Statistics in 1960, as follows:

	<u>1,000 acres</u>	<u>Percent</u>
Agricultural land	4,986	12.7
Forest area	19,521	49.8
Other <u>1/</u>	<u>14,720</u>	<u>37.5</u>
Total	39,227	100.0

1/ Includes cities, towns, roads, rivers and streams, industries, and other installations.

If official reports are correct, the 510,000 acres reclaimed between 1961 and 1963 would boost agricultural land to 14 percent of the total area. Much of this reclaimed land, however, has not yet produced its first crop. The goal for 1965 was reduced to 1,112,000 acres in 1963, a decrease of 250,000 acres from the original goal.

## Use of Agricultural Land

Over 90 percent of the agricultural land supports food crops; of this amount, over 75 percent is used for rice. About 80 percent is located in the delta areas. Most of the other cultivated land is adjacent to the delta areas and in river valleys. The higher mountain areas are suitable neither for producing crops nor for supporting livestock. Much of the lower forest areas and savannas, however, is adaptable to the production of tree crops, many industrial crops, and large animals. Farmers have resisted planting crops which are new to them and whose product they cannot eat. These prejudices are gradually disappearing, however, and production of commercial crops is advancing modestly under the stimulus of energetic production programs.

## Cultivated Land

With only .31 acres of cultivated land per person, North Vietnam is hard pressed to maintain an adequate land-man ratio for its rapidly growing population. A persistent and gradual change is occurring in the utilization of cultivated land. Traditional crops and methods of production are gradually giving way under government influence to reduce the area devoted to the production of rice relative to that of other crops (table 1). Government plans call for secondary crops (corn, sweetpotatoes, manioc, and beans) to comprise 30 percent of total food production in 1965. Official claims placed the proportion initially at 21 percent in 1963, but the actual figure is nearer 13 percent. A large portion of the cropland is capable of producing two or more crops of rice or other crops per year (table 2). Without this extended use, North Vietnam's agriculture could not support the population. An example of the intense cultivation of the land is shown in the utilization plan for 1965 in which 18 percent of the cultivated land will be used for one crop, 37 percent for two crops, and 45 percent for three crops.

The use of land varies greatly from region to region. In the higher, remote areas of the northwestern mountains, the old system of slash and burn is utilized. In the delta area where over 80 percent of the total area is cultivated (with .18 to .27 acres per capita), as many as three crops of rice are produced on the same land in certain areas. Experimentation in interplanting with fast maturing crops gives promise of increased production. Rice can be produced any time of the year in the delta area, providing there is sufficient moisture.

## SOCIALIST STRUCTURE OF AGRICULTURE

The moulding of agriculture in North Vietnam into the socialistic pattern began long before the signing of the 1954 Geneva Agreement. The Provisional Government of the Democratic Republic of Vietnam, which was created in 1945 under the control of the Viet-Minh (Communist) Party (named the Lao Dong Party in 1951), effected various social reforms in those areas which came under its jurisdiction. Following 1954, the Communist regime in North Vietnam rapidly extended the social reforms initiated by the Provisional Government. The major programs in successive steps included agricultural tax reforms, land reforms, creation of state and military farms, and the collectivization of agriculture. The eventual goal is the establishment of a higher class type of collective



farm similar to the Soviet kolkhoz. Although the government's avowed policy has been the complete socialization of agriculture, it has lagged more than any other Communist country in implementing this policy. This slow pace resulted from government mismanagement in the early phases of the socialization drive following land reform, inadequately trained and seasoned cadres, the low level of technology, and the general lack of popular support from the peasants, particularly those of the middle and higher middle classes.

Tenure and Reform

Under the former colonial system in what is now North Vietnam, over 70 percent of the cultivated land was owned by about 5 percent of the population. This 5 percent was composed mainly of landlords, who rented most of their land, and of so-called rich peasants, who worked their holdings with the help of hired labor. Peasants, comprising about 90 percent of the population, owned only 30 percent. Over half the peasants held no land and either rented land from landlords or worked as hired hands. Land rents varied between 50 and 80 percent of the harvest, plus family work on the landlord's holding. Exorbitant interest rates (up to 300 percent) were charged on loans.

Table 1.--Use of cultivated land in North Vietnam, 1957, 1960, and 1965 plan

Type of crop	Percentage of total cultivated land in --		
	1957	1960	1965 plan
	- - - - - <u>Percent</u> - - - - -		
Food crops:			
Rice .....	86	83	76
Secondary <u>1/</u> .....	14	17	24
Total food crops ..	<u>2/</u>	95.4	91
Industrial crops .....	<u>3/</u>	4.6	9
Total cultivated land .	100	100	100

1/ Corn, sweetpotatoes, manioc, and beans.

2/ Not available, but about 96 percent.

3/ Less than 4 percent.

Source: Three Years of Cultural and Economic Development, Democratic Republic of Vietnam, Directorate General of Statistics, Hanoi, 1961; Council of Ministers Report to DRV National Assembly, April 29, 1963 (Nhan Dan, April 30, 1963); and Central Statistical Board Report, Nhan Dan, January 21, 1963.

Table 2.--Use of agricultural land in North Vietnam, 1960

Use of land	Area	Percentage of agricultural land	Percentage of all land in specified use
	<u>1,000 acres</u>	<u>Percent</u>	<u>Percent</u>
<b>Ricefields:</b>			
Fields harvested once:			
5th-month crop <u>1/</u> .....	531	10.6	33.0
10th-month crop <u>1/</u> .....	1,079	21.6	67.0
Total .....	1,610	32.3	100.0
Fields harvested twice:			
2 rice crops .....	1,670	33.5	76.8
1 rice crop, other crop ..	503	10.1	23.2
Total .....	2,173	43.6	100.0
Total rice fields ....	3,783	75.9	
<b>Other crops and uses:</b>			
Food crops .....	500	10.0	58.4
Seedbeds .....	146	2.9	17.1
Slash and burn .....	92	1.8	10.8
Fallow .....	117	2.4	13.7
Total .....	855	17.1	100.0
Total cultivated land	4,638	93.0	--
Perennial crops and other <u>2/</u> .	349	7.0	--
Total agricultural land ....	<u>3/4,987</u>	100.0	--

1/ Rice is harvested at 3 different times yearly in North Vietnam: in the 5th lunar month, June; in the 10th lunar month, November; and in the autumn. (Autumn-harvested rice is included with the 10th-month rice.)

2/ Includes areas in perennial crops (69,000 acres), areas of lakes and ponds (104,000 acres), jungles (164,000 acres), and forests (12,000 acres) which have significant agricultural uses.

3/ If to this is added the 510,000 acres reclaimed during 1961-63, the total agricultural area in 1963 is 5,497,000 acres.

Source: Three Years of Cultural and Economic Development, Democratic Republic of Vietnam, Directorate General of Statistics, Hanoi, 1961.

Although the Provisional Government lacked the power to enforce all its decrees, it nevertheless enacted numerous reforms. The first, in the form of a 25-percent reduction in the cost of leases, occurred in 1945. This was followed by a long series of reforms which aimed at further reduction of the cost of leases and interest rates, and to clarify types and tenure of leases. The basic goal of all these reforms was to break the power and control of the landlord class. 3/

In late 1953 the Provisional Government, having consolidated its power, launched its land reform program. By October 1956, the reform was basically completed. In all, over 2.1 million peasant families, comprising over 8.3 million working peasants, were the recipients of between 2 and 2.25 million acres of cultivated land, or about half the cultivated land in North Vietnam. 4/ Peasants also received over 115,000 head of draft animals, 1,846,000 farm implements, and over 71,000 tons of foodstuffs which were confiscated from landlords. Land was allocated to working peasants on the basis of the holdings of middle class peasants in a given locality. Landlords were eliminated as a class. Those who were not liquidated, particularly those who aided in the war effort, were allowed to retain a portion of their land equal in size to the smallest area given to the poorest peasant.

### Socialization of Agriculture

As practiced by the Communists, the socialization of agriculture is the process whereby the agricultural economy is transferred from a system of private ownership and individual enterprise to one of public ownership. The operation of agricultural enterprises can thus be controlled and directed the same as other nationalized industries. The aim of the Communist regime in North Vietnam is to provide agricultural commodities for the urban and industrial population at relatively low prices, to utilize rural labor more efficiently, and to increase agricultural productivity by applying the factors of large-scale production.

The process of socializing agriculture in North Vietnam followed the familiar pattern of other Communist regimes, with only few variations. The government rallied peasant support through its land give-away program, and then attempted to consolidate that support by uniting peasants in a "cooperative" effort. The first step in collectivization was the formation of so-called Agricultural Production Cooperatives (APC's), which instead of being cooperative in the Western meaning of the term were in fact rudimentary forms of collective farms. The next step was the consolidation of APC's into collectives with characteristics similar to those of the Soviet kolkhoz. Special government-operated institutions, christened supply-marketing cooperatives and credit cooperatives by the Communist regime, perform a watch-dog and propaganda function, in addition to carrying out the functions intimated in their titles.

---

3/ The landlord class also owned much of the capital, both currency and goods, which was loaned to peasants.

4/ Land reform directly affected almost 11 million people in 2,653 communities in 22 provinces. Its effects were nationwide.

None of these so-called cooperatives, therefore, bear any resemblance to Western cooperatives, and they lack the characteristic of voluntary association which is the trademark of U.S. cooperatives. The Communist regime adopted the term cooperative because of significance traditionally attached to it by the peasants prior to Communist rule.

Work-exchange teams.--Land reform culminated in the formation of numerous small uneconomical units and a precipitous decline in the level of agricultural technology. To utilize manpower and scarce equipment more fully and to reintroduce cooperative effort, the regime initiated the work-exchange team, a tradition in North Vietnam whereby farmers pooled their implements, draft power, and family labor during the peak work season. By the end of the land reform movement in 1956, about 190,000 of these teams (which were patterned after the mutual-aid teams in China and comprised 5-10 families) had been formed and included 60 percent of the peasant population. Administrative blunders, however, brought a near collapse of these teams, and by mid-1957 over 60 percent of them had been disbanded.

Following a rectification period, there was a resurgence of exchange teams; many of these were organized on a permanent year-round basis. Some central guidance was accomplished in this stage, but the division of the crop was on a family basis. By the end of 1958, almost 245,000 work-exchange teams (comprising nearly 1.8 million families or over 80 percent of all peasant families) had been organized. Although not considered part of the socialist structure by the Communist regime, the work-exchange teams provided the springboard into socialism.

APC's.--As early as 1955, some experimentation with APC's was attempted, but the proper political and technological foundations had not been laid, and mistakes made during the land reform were not satisfactorily rectified. Therefore, progress was slow. APC's were formed through the amalgamation of several work-exchange teams. By the end of 1957, only 42 APC's had been formed. In the latter part of 1958, however, a sustained drive to collectivize the agricultural sector resulted in the establishment of 4,758 APC's by the end of the year. Following a series of collectivization thrusts and retrenchments, 41,400 of these units (including 4,400 collectives) had been organized by the end of 1960. By the end of 1963, this number had been reduced by consolidation and reorganization to 30,600, comprising 85.3 percent of the peasant families.

Members of APC's retained ownership of all their possessions and were paid rent for the use of their land and livestock. All farm work was done in accordance with a centralized plan and the income was divided according to a member's contribution of labor, land, and livestock. Labor was the most remunerative. Membership was granted to all peasants 16 years of age and older; if they were a member of a former landlord's family or that of a rich peasant, they could not be admitted until after they had been reoriented through "work and education." Leadership was chosen from among the lower class peasants because of their political reliability; middle class peasants, despite their greater knowledge of farming, could not hold responsible positions. Hastily trained agricultural cadres attempted to fill the technological gap but without success. Their failure to maintain a firm hand and dispense party guidance,

the inability of low class peasants to understand and grasp leadership responsibility and to direct the new complex of collective farming, and the general disinclination of middle class peasants and other workers to respond to collective measures stagnated the collectivization drive.

Collective farms.--Failure to solve the problems of the APC's has been the major deterrent in the organization of collective farms on a large scale. These collectives are similar to the Soviet kolkhoz. They originated from consolidation of several APC's. All of the peasant's belongings, except his personal effects and his house, became the property of the collective, either as part or full payment of the entrance fee; compensation from the collective was derived only from a member's labor. A small plot of land was provided for his use, and an additional 5 percent of the collective's land was made available for the raising of livestock.

By the end of 1964, about half of all APC's had been consolidated into collective farms. Failure to attain the collectivization goal resulted from lack of effective management, low-level technology, and weak party leadership at the state and local levels. The low level of production has narrowed the scope within which the regime can operate. Any action which may disrupt the delicate balance of production might prove disastrous. During recent years the government has placed more emphasis on increasing production of crops and livestock than on the creation of additional collective farms.

The drift to private enterprise has been very noticeable despite government claims to the contrary. In 1961, official statistics showed that 55 percent of the income of households in APC's came from supplementary activities--mainly from utilizing private plots for production of food and fodder, raising pigs, chickens, and ducks for consumption or sale, producing handicrafts outside the organization, planting and cultivating trees, and raising fish in small ponds. Some APC's have assigned more land to members, and in some areas important crops (cotton, sugarcane, tobacco, peanuts, and sesame) have been contracted out to families. In some instances, farmers were not mobilized to harvest crops in the cooperative because they had their own crops to look after. In certain mountain areas, cooperatives were depleted or dissolved because of member resignation.

Other institutions.--Other socialist production and service enterprises, directly or indirectly under state control, include livestock breeding, forestry, fishing (in coastal areas), supply-marketing and credit enterprises, and joint agricultural sideline enterprises in those areas where such diversification exists. The state-sponsored supply-marketing enterprises predominate. They are conveniently located throughout the rural areas to enable the managers and cadres to maintain a close watch on farming and production activities. They function as supply outlets where farmers may obtain equipment, tools, fertilizers, seeds, and even draft animals; they also provide an outlet for farmers to market their surplus produce. By early 1961, these enterprises constituted a network of almost 260 installations with 4,590 outlets and almost 2 million members.

Credit facilities also are an integral part of the socialistic structure in rural areas. These units, backed by the state bank, provide services and establish controls on the use of capital. Their main function is to provide APC's and collectives short-term credit to purchase seed, fertilizer, farm tools, and livestock. By the end of 1960, there were approximately 5,265 of these establishments, totaling almost 2.1 million members. Their importance, however, has diminished as collectivization has advanced.

State farms.--State farms had their origin in the land reform movement of 1955-56. French colonial possessions, amounting to 123,550 acres of plantations, were organized into 16 state-owned and operated farms. When the Ministry of State Farms was created on January 1, 1961, 33 army estates were transferred to the state farm sector, thus increasing state farms to 49. All labor on these farms is hired.

State farms produce only a small fraction of the agricultural output and little if any surplus food, but they perform numerous essential functions for the advancement of agriculture. One major function is the clearing of land for agricultural use. Their main objective, however, is to be model centers for agricultural production. Their role in North Vietnam's agriculture is similar but inferior to that of experiment stations in the United States. Most new developments in improved seeds, use of fertilizers, mechanization, and other technological innovations are tried on state farms before being released for general use. They are the only semblance of mechanized farms in North Vietnam.

#### AGRICULTURAL PRODUCTION PRACTICES

The age-old pressure of the land-man ratio exists in North Vietnam, particularly in the Tonkin Delta. This unfavorable balance between land and population has forced the Vietnamese farmer to support a fairly large family on a small area of land without unduly impoverishing the soil. To be sure, the level of living under these conditions has been one of bare subsistence. It has required the participation of all able-bodied members of the family in working the soil and in participating in other revenue-earning activities. The Communist regime's awareness of the unfavorable situation in agriculture has been demonstrated by various policies which have focused on increasing agricultural productivity. The programs and practices which have evolved, however, have not provided a solution. Agriculture has been designated the chief source of capital for industrialization, but investment in agriculture has been too small, and ideological orientation has, in most instances, superseded economic rationale.

#### Agrotechniques

By Western standards, farming technology in North Vietnam is still primitive. Except on state farms, almost all farm operations are still accomplished by hand. Technological progress has been tied to the socialization program. This accounts for much of the lag in technical advancements in agriculture. It was not until 1961 that specific action programs were instituted to raise the technological level. The First Five-Year Plan only began to lay the foundation for the practical approach to agriculture; that is, experimentation and dissemination of results and information through education media.

Current agrotechniques at the farm level include the use of improved hand tools and plows, application of new types of natural and chemical fertilizers along with traditional fertilizer practices, more double cropping through the expansion of irrigation and flood control facilities, introduction of new crops (particularly commercial), limited use of chemical insecticides and pesticides, development and use of limited amounts and kinds of animal vaccine, establishment of small experimental plots on which to demonstrate new agrotechniques, and the development of some models for mechanization. Numerous attempts to train cadres and leaders of cooperatives in the techniques of better farming have had only limited success, mainly because officials were chosen on the basis of political rather than agricultural reliability. According to official claims, 193 stations were engaged in experimental work in 1960. Only 93 did actual experimental work; the other 100 were utilized as demonstration stations for selling the above techniques to peasants.

### Mechanization

The lack of technical development, the nature of crop cultivation (small paddy units), the high initial cost, and the general backwardness of the peasant farmer are the major deterrents to the widespread use of improved farm machinery in North Vietnam. All farm implements are essentially hand tools, and industry cannot yet support an adequate level of modern farm equipment. Except for ploughs and harrows, which are not of the highest quality, all mechanized farm implements, particularly tractors, have to be imported. Any attempt, therefore, to alter its unfavorable trade balance would militate against necessary large imports of farm machinery and would increase the problem of spare parts.

A report in Nghien Cuu Kinh Te (Economic Research) for October 1961 claimed that 10 to 15 percent of North Vietnam's agriculture was mechanized and that it would require about 10,000 tractors (in 15 horsepower units) to mechanize agricultural operations. With a cultivated area of nearly 5 million acres, that would mean 1 tractor for every 500 acres. To mechanical power must be added complementary equipment. This in itself presents a staggering problem to the country's industrial base, which presently can produce only simple animal-drawn plows and harrows and certain improved farm tools.

### Irrigation and Flood Control

Three major problems confront crop production in North Vietnam: flooding during the rainy season (April-October), when 80 percent of the precipitation occurs; drought conditions during the dry season (November-March); and inundation of coastal areas by salt water from excessive high tides in typhoons. In many areas, irrigation and drainage systems are required side by side. This patchwork of dikes and canals extends from the great dikes along the coast far up the various river systems.

The major objective of irrigation and flood control programs is to regulate water resources by accumulating water during the wet season, thus negating the flood hazard, and then to release it to dry areas during the dry season. This would more nearly fulfill the possibility of a two-crop yield from each acre of cultivable land. Since over 33 percent of the rice and 90 percent of

the other food and commercial crops are grown during the dry season, this goal has particular significance. Fulfillment, however, depends on the ability to harness the major rivers at their upper reaches. So far this has not been successful.

The development of irrigation has been placed on a par with the socialization of agriculture because of its importance in food production. In spite of a major effort, the country has not solved its irrigation problem. Forty-seven percent of total investment funds for agriculture were earmarked for irrigation in the First Five-Year Plan, but by the end of 1963 only 41 percent of these allocations had been expended: moreover, work inputs were not commensurate with capital inputs. During 1963, the dry season was drier than usual and above-average precipitation occurred during the wet season. These weather extremes resulted in an even larger area of drought and floods than in any previous year during the Communist rule (table 3). These data discredit the claim of an increase in irrigated area from 2.3 million acres in 1957 to 5.3 million acres in 1963. On the other hand, they indicate the extensive program needed by the end of 1965 to increase the planned irrigated area by an additional 1.5 to 2 million acres.

### Crop Fertilization

Little use was made of chemical fertilizers in North Vietnam before 1954 because of technical inadequacies and high cost. The Vietnamese farmer, however, has applied as much fertilizer as possible from available sources, including green manure crops, stable manure, night soil, mud from stream beds and lake bottoms, compost, and other organic materials, such as duckweed, a swamp plant high in plant nutrients. Because of the low fertility of the soil, and especially its deficiency in nitrogen and phosphorus, farmers have devoted particular attention to the development and use of natural fertilizers.

North Vietnam has an abundant supply of raw materials for manufacturing phosphoric acid, but it has not been exploited extensively. The generous application of organic materials probably supplies most of the potassium requirements. Only during the past few years has the country developed its technology sufficiently to support the manufacture of chemical fertilizers and other agricultural chemicals. These chemicals are considerably below Western standards, but they are steadily improving. The recently completed 100,000-ton capacity superphosphate plant at Phu Tho and the 25,000-ton phosphate plant at Haiphong produce most of the phosphate fertilizers.

### Soil Conservation and Reclamation

The individual farmer, APC's, collective farms, and government are combating soil problems through several major programs: reclamation projects to prevent widespread flooding and sheet erosion in the hill and plains area; construction of dikes and planting of trees on them to prevent inundation of soil adjacent to the coast; drainage of brackish water; planting of vegetative belts to prevent the shift of sand along the coast; control of slash and burn farming in the mountain areas; and planting of catch crops during the dry season to prevent blowing of the soil and to restore organic matter and fertility.



Table 3.--Acreage of rice affected by drought and floods, by season, in North Vietnam 1955-63

Year	Drought		Floods
	5th-month crop, Chiem	10th-month crop, Mua	10th-month crop, Mua
	----- 1,000 acres -----		
1955	333.6	321.2	85.2
1956	359.0	348.6	431.4
1957	343.0	675.6	128.5
1958	403.3	420.3	208.3
1959	265.6	324.9	233.5
1960	266.1	414.9	259.7
1961	41.8	504.3	135.4
1962	340.0	158.4	202.1
1963	556.0	292.3	632.6

Source: Hoc Tap, No. 2, Hanoi, February 1964.

The government of North Vietnam estimates that nearly 2.5 million acres of land--almost exclusively in the hilly areas of the country--can be exploited for agricultural production. Almost one-half of this area has been earmarked for the production of numerous tree crops, fruits, nuts, fibers, upland grains, and vegetable oilseeds, particularly peanuts and soybeans. This land, however, is marginal; yields of crops grown on reclaimed land in this area have been disappointing.

A major drawback in the reclamation program has been the substitution of regimented labor by the state for capital investment in local projects. Impressive progress has been made in small projects (such as irrigation, drainage, clearing small parcels of land, building dikes, planting trees, and developing handicrafts to complement certain farming enterprises) carried out by local peasant organizations. But intermediate-sized projects which cannot be financed by local organizations have lagged, and in many instances have been affected by larger projects requiring state capital and central planning.

#### AGRICULTURAL PRODUCTION

Traditionally, food crops have dominated North Vietnam's agriculture. Scarcity of land and lack of a market economy forced the peasant to concentrate his efforts on those activities which filled his immediate needs, primarily the production of rice. Industrial crops, though insignificant in domestic production, were the country's main exports.

Noticeable changes have occurred and continue to take place under the Communist regime. Although self-sufficiency in food production is still emphasized, considerable efforts have been directed toward increasing industrial or commercial crops, and livestock and other food crops which bring a higher return than rice and which serve both human and animal needs. Whereas rice occupied 86 percent of the land for food production and provided 90 percent of the food in 1957, it is to be reduced to 76 and 70 percent, respectively, in 1965.

### Food Crops

Rice.--This staple occupies a major position in the economy of North Vietnam. No other indigenous food crop--with the possible exception of manioc--returns so many calories per unit of land, depletes soil fertility less, adjusts better to various environments, or adapts itself so well to successive plantings without rotation. Rice can be grown on relatively poor soils with small applications of fertilizers if there is sufficient water. Because of its comparatively short growing cycle, it allows double and, in some instances, triple cropping. It can be transplanted, thereby reducing the outlay for seed and making more efficient use of an abundant labor force. It is easily cooked, an important factor in a country generally short of fuel.

The production of rice is centered in the plains area of the Red River (Tonkin) Delta, the agricultural heartland of North Vietnam. It also is produced on the lowlands and deltas of many river systems along the entire coast of the country. All of the rice grown in the lowlands is under wet cultivation. Upland varieties are grown in scattered areas in the hill and mountain regions under dry land conditions.

Since 1954, the output of rice has been erratic because of unfavorable weather and the production program administered under the Communist regime. Official statistics show a rapid rise in the production of rice at the expense of other food crops from 1954 through 1959. Since then, however, production has declined (table 4). In 1960, the rapid response in production to increased capital inputs--including fertilizer, improved farm implements, irrigation, flood control, and increased draft power--slowed down under the impact of collectivization (which then reached its peak). Also, 1960 was a year of unfavorable weather. Increased inputs, expanded acreage, and intensified programs to orient peasants to the collective system and to educate farm leaders in agricultural techniques have been fruitless in increasing the production of rice. The failure is more significant when compared with the rate of increase in production in South Vietnam. With 1955 equal to 100, the index of production for both countries is as follows for selected years.

<u>Year</u>	<u>North Vietnam</u>	<u>South Vietnam</u>
1959	147	180
1960	120	176
1961	132	162
1962	129	183
1963	122	176
1964 (preliminary)	128	187

Table 4.--Area, yield, and production of paddy rice in North Vietnam, 1939 and 1954-64

Year	Area			Yield per acre			Production		
	Chiem <u>1/</u>	Mua <u>2/</u>	Total	Chiem <u>1/</u>	Mua <u>2/</u>	Total	Chiem <u>1/</u>	Mua <u>2/</u>	Total
	- - - - <u>1,000 acres</u> - - - -			- - - - - <u>Kilograms</u> - - - -			- - <u>1,000 metric tons</u> - - -		
1939 .....	1,742	2,806	4,548	497.1	549.2	529.2	866	1,541	2,407
1954 .....	1,715	2,975	4,690	471.1	602.4	554.3	808	1,792	2,600
1955 .....	1,968	3,409	5,377	591.0	692.3	655.2	1,163	2,360	3,523
1956 .....	2,174	3,470	5,644	728.6	735.4	732.8	1,584	2,552	4,136
1957 .....	2,086	3,330	5,416	706.1	743.2	729.0	1,473	2,475	3,948
1958 .....	2,039	3,484	5,523	600.3	962.4	828.7	1,224	3,353	4,577
1959 .....	2,108	3,510	5,618	838.2	976.1	924.4	1,767	3,426	5,193
1960 .....	2,110	3,534	5,644	550.2	821.3	746.3	1,161	3,051	4,212
1961 .....	2,242	3,712	5,954	766.7	789.9	781.1	1,719	2,932	4,651
1962 .....	2,301	3,654	5,955	701.4	801.3	762.7	1,614	2,928	4,542
1963 .....	2,250	3,590	4,840	695.6	760.7	735.6	1,565	2,731	4,296
1964 <u>3/</u> .....	2,309	3,685	5,994	768.7	742.7	752.8	1,775	2,737	4,512

1/ 5th-month crop harvested in May-June.

2/ 10th-month crop harvested in October-November. Includes autumn-harvested rice.

3/ Preliminary estimates based on information in official reports.

Source: Three Years of Cultural and Economic Development, Democratic Republic of Vietnam, Directorate General of Statistics, Hanoi, 1961. JPRS: 28,726, February 12, 1965, Statistical Data, 1963. (Translated from So Lieu Thong Ke, 1963), Hanoi, 1964. Annual and semi-annual announcements of plan fulfillment in various issues of Nhan Dan (The People) Hanoi, for years 1955-64.

In 1955, production of rice in South Vietnam was 3.1 million tons compared with a claim of 3.5 million tons in North Vietnam. In 1964, preliminary estimates were 4.5 million tons for North Vietnam and 5.3 million tons for South Vietnam. North Vietnam's original goal of 7 million tons of rice by the end of 1965 has been reduced to 5 million tons.

Other food crops.--Corn, sweetpotatoes, manioc, and beans (excluding soybeans) are referred to as subsidiary or secondary crops in North Vietnam. These and other crops grown for commercial uses (industrial crops) are rotated with the 10th-month rice crop in the plains area between November and the following June when about 90 percent of the production occurs. They are grown extensively in the hill area where production of rice is less profitable. With the general decline in the supply of rice for food, the consumption of secondary crops increased considerably after 1954 (table 5), despite the fact that most Vietnamese do not readily accept them as a substitute for rice or even as a supplement to vary their diet. During the past few years, however, production has been disappointing. Since 1959, yields of both secondary crops and rice have declined; 1963 was especially a poor crop year. These setbacks have occurred during the cultivated land-expansion program, reflecting both the marginal nature of the newly reclaimed land and the inability of peasants to acquire adequate fertilizer and develop good management practices.

Other miscellaneous food crops, including various legumes, vegetables, miscellaneous grains (excluding wheat which is not grown in the country), various wild plants, edible forest products, and fruits and nuts contribute a small but significant supplement to the peasants' food supply. The area and production of vegetables has increased materially from 31,085 acres in 1957 to 62,000 acres in 1963. With the aid of development loans by the USSR, much emphasis has been given to the expansion of citrus, pineapple, and bananas since 1960.

### Commercial Crops

Production of the major commercial crops grown in North Vietnam is shown in table 6. These products and their processed derivatives constitute the bulk of agricultural exports. Considerable pressure has been applied by the government to stimulate farmer participation in increasing these crops, but progress has been slow. By 1960, commercial crops occupied only 4.6 percent of the sown area. The goal for 1965 is 9 percent.

Sugarcane.--Until recently, sugarcane was grown exclusively for home consumption--to be eaten raw or crushed, or to be made into molasses or crude sugar. Because of the increase in acreage and production, however, (from 12,355 acres and 100,000 tons of cane in 1955 to about 31,000 acres and 732,000 tons in 1963) modern refining facilities have been constructed to process a portion of the crop. Distances from fields to factories, and peasants' persistence in selling their sugarcane on the free market and processing it themselves have contributed to numerous procurement problems of the state. In 1960, 10,100 tons of centrifugal sugar and 22,100 tons of molasses reportedly were produced. Production of centrifugal sugar increased to 25,000 tons in 1963; information was not available for molasses. The goal for 1965 is 50,000 tons of sugar and molasses from a planned production of 870,000 tons of sugarcane. The country has not yet reached the level of production necessary to provide export surpluses.

Table 5.--Area, yield, and production of specified secondary crops and their rice equivalent, in North Vietnam, selected years 1939-63

Crop and year	Area	Yield per acre	Production
	<u>1,000 acres</u>	<u>Kilograms</u>	<u>1,000 metric tons</u>
<u>Corn</u>			
Annual:			
1939 .....	294.0	476.2	140.5
1955 .....	381.0	489.5	186.5
1960 .....	434.3	442.9	214.5
1963 .....	583.4	372.0	217.0
Average 1959-63 .....	532.2	461.3	245.5
<u>Sweetpotatoes</u>			
Annual:			
1939 .....	168.0	928.6	156.0
1955 .....	417.4	1,281.5	534.9
1960 .....	307.6	1,593.5	490.0
1963 .....	453.9	1,785.6	810.6
Average 1959-63 .....	380.3	2,080.7	791.3
<u>Manioc</u>			
Annual:			
1939 .....	48.2	2,016.6	97.2
1955 .....	65.2	2,493.9	162.6
1960 .....	93.4	3,582.4	334.6
1963 .....	296.5	2,915.3	864.4
Average 1959-63 .....	187.7	3,272.2	614.2
<u>Beans (excluding soybeans)</u>			
Annual:			
1939 .....	53.6	182.8	9.8
1955 .....	103.3	103.6	10.7
1960 .....	151.2	74.1	11.2
1963 .....	153.7	87.2	13.4
Average 1959-63 .....	148.6	107.7	16.0
<u>Totals, in terms of rice equivalent 1/</u>			
1939 .....	563.8	377.8	213.1
1955 .....	966.9	384.2	371.5
1960 .....	986.5	461.5	455.3
1961 .....	1,364.7	527.2	719.5
1962 .....	1,451.2	503.2	730.2
1963 .....	1,580.0	435.4	688.0
1964 2/ .....	n.a.	n.a.	916.4

1/ Based on following: 1 unit of paddy rice equals 1 unit of corn or beans, or 4 units of sweetpotatoes or manioc. However, the practice of the Directorate General of Statistics since 1959 has been to accept 2 units of sweetpotatoes or manioc for 1 unit of paddy rice. 2/ Preliminary estimate.

Source: Same as table 4.

Table 6.--Production of major commercial crops in North Vietnam, 1939, 1956-63, and 1965 plan

Crop	1939	Average 1955-59	1956	1957	1958	1959	1960	1961	1962	1963	1965 Plan
	----- 1,000 metric tons -----										
Sugarcane .....	109.2	325.5	202.4	384.5	495.1	445.5	451.7	491.0	747.5	732.0	870.0
Peanuts (in shell)	3.4	24.6	18.8	23.7	32.1	34.5	26.0	30.4	38.3	34.5	50.0
Soybeans .....	14.9	8.4	7.4	7.0	11.1	11.8	11.2	10.4	8.7	7.9	n.a.
Sesame .....	0.9	2.0	2.5	2.0	2.0	2.4	3.3	2.8	3.1	2.4	n.a.
Castor beans .....	1.1	1.0	0.6	0.8	1.2	2.1	2.1	2.8	2.5	1.7	n.a.
Cotton (seed) .....	1.0	5.2	5.7	5.7	5.6	6.2	4.6	6.1	5.8	5.9	9.0
Jute .....	0.4	4.4	1.3	5.7	6.3	7.8	12.4	8.8	13.8	16.2	31.0
Hemp .....	0.3	0.4	0.3	0.3	0.8	0.5	0.4	0.4	0.6	1.0	3.0
Reed .....	2.2	9.8	8.0	9.4	12.4	14.7	14.8	15.6	21.6	22.0	40.0
Tobacco .....	3.2	1.0	0.9	1.7	0.8	0.8	1.6	2.8	4.0	4.2	6.0
Tea .....	3.7	2.5	2.4	2.6	2.8	2.4	2.6	2.5	2.7	3.6	3.6
Coffee beans .....	n.a.	0.3	0.3	0.3	0.3	0.5	0.2	0.7	0.9	0.9	3.0

Source: Three Years of Cultural and Economic Development, Democratic Republic of Vietnam, Directorate General of Statistics, Hanoi, 1961. JPRS: 28,726, February 12, 1965, Statistical Data, 1963. (Translated from So Lieu Thong Ke, 1963), Hanoi, 1964. JPRS: 8,980, Sept. 29, 1961, Agricultural Production in North Vietnam during Last 15 Years. (Translated from Thanh Tieh San-xuat Nong-nghiep Trong 15 nam Dueo Che-do Viet-nam Don-Chu Cong-hao), Ministry of Agriculture and Forestry, Hanoi, November 1960. Annual and semi-annual announcements of plan fulfillment in various issues of Nhan Dan (The People), Hanoi, 1955-64.

Vegetable oilseeds.--A variety of vegetable oilseeds are produced in North Vietnam; the major types are peanuts, soybeans, sesame, cottonseed, and castor beans. These crops are grown primarily during the dry season. Efforts to increase acreage and production have been more fruitful than those to raise yields. The crushing and refining capacity for these seeds has been expanded, and almost 5,000 tons of oil are produced annually from procured stocks, enough to provide small amounts for export. Much of the processing outside state facilities is traditional--and still wasteful.

Peanuts and soybeans constitute about 80 percent of the acreage of vegetable oilseeds (excluding cottonseed) and almost 90 percent of the production. Peanuts, the most important oilseeds, were grown on 105,300 acres in 1963, more than double the 1955 acreage. Production more than doubled (14,000 tons in 1955 to 34,530 tons in 1963) during that period. Plans call for 50,000 tons in 1965. Soybeans have not been so successful. Prewar (1939) acreage and yield declined from 79,810 acres and 186 kilograms per acre to 59,675 acres and 133 kilograms per acre, respectively, in 1963.

Fibers.--Total production of fibers in North Vietnam is meager chiefly because of poor soil and unfavorable weather. Acreage and production have made substantial gains since 1955, but the increase has not been sufficient to meet the needs of the textile processing industry. Cotton and the two common bast fibers, jute and hemp, are the major textile crops in the country.

Although the acreage of cotton has almost doubled since 1955--from 23,360 acres in 1955 to 45,930 acres in 1963--its production provides only a small portion of the cotton needed to meet the demand of the cotton industry. Domestically produced varieties are characterized by short fibers (five-eighths to seven-eighths of an inch) and low yields (about one-fourth bale of ginned cotton per acre). Based on efforts to improve varieties, increase fertilization, and improve cultural practices, the state planning commission has set a goal of 9,000 tons of seed cotton for 1965.

Jute has become a major commercial crop in North Vietnam. The crop is grown near swamps and water holes, which provide the natural facility for retting. Jute has increased rapidly--from 1,360 acres and 1,120 tons in 1955 to 27,880 acres and 16,250 tons in 1963. Official plans project a production of 31,000 tons in 1965. In addition to being a good export item, the fiber is used in the manufacture of burlap, rope, fishing nets, bagging material, bedding, floor mats, and sandals. A closely related plant, ramie, which produces a better quality fiber, has much expansion potential. It is best suited to the highland area. The production of reeds also has assumed significant proportions in recent years.

Other commercial crops.--Among minor tropical and semi-tropical crops, tobacco, tea, and coffee are the most important for home consumption and for export. Rubber, lac, citronella, and mulberry trees also have some importance. Development of these crops and their products has been slow and unstable.

Tobacco, traditionally a family-garden type enterprise, generally is grown throughout the country on higher land adjacent to paddy fields. It is more prevalent, however, in the hill areas surrounding the plains. Acreage

expanded from about 4,100 acres in 1956 to 19,740 acres in 1963; production increased in about the same proportion. This rapid expansion has boosted production by one-third compared with prewar production. Many domestic varieties of tobacco are produced, but few foreign strains have been introduced.

The production of tea is one of the oldest industries in North Vietnam. The plant is quite ubiquitous in the country, especially in the higher elevations, but Phu Tho Province is the center of production. The tea industry has advanced from the home to the factory. With assistance from the USSR, modern tea processing facilities have been built at Phu Tho. These factories, with an annual capacity of 6,000 tons, operate considerably below capacity and produce both black and green teas. Despite these modern achievements, however, production has not regained prewar levels. Peasants have resented the loss of their home-type enterprise and have passively resisted government efforts to expand acreage. Thus, a planned production of 3,600 tons in 1965 compared with a prewar production of 3,700 tons is not surprising. This static production is particularly the result of extensive destruction of the tea plantations during the Indochina War and of the subsequent land reform programs. By 1960, prewar acreage (19,150 acres) had been attained, and by 1964, that acreage had doubled. Yields were less because of the time needed for tea plants to reach productive age.

Coffee in North Vietnam is produced only on state farms. Essentially all the coffee trees are new plants and have not reached full production. Official plans call for over 85,000 acres to be used for coffee trees by the end of 1965. Potential production is thus far greater than the planned production in 1965 of 3,000 tons.

Three varieties of coffee with different harvesting dates are being planted to make the industry a year-round enterprise. Arabica, the lowest yielding but best liked, is harvested in January-February; Robusta, a higher yielding variety, is harvested in March-April; and Shari, the highest yielding variety (280 to 360 kilograms per acre), is harvested in July-August. Besides extending the season of production, raising of these varieties enables better utilization of trained laborers. Coffee also is a good export item. Moreover, coffee does not compete with food crops for land. Its potential will be greatly influenced by the development of the trade economy of the country.

Other commercial products, including lacquer, citronella, rubber, and silk, are derivatives of small but significant industrial plants. A large proportion of the output is exported. Lac, the raw product of lacquer, has little expansion potential because of the substitution of chemicals in paints and varnishes. Production has been static at about 560 metric tons per year since 1960. Rubber, new to North Vietnam, is still in the experimental stage. Production of citronella is likewise small, but there has been a rapid increase since 1960--from 4,120 tons to 10,880 tons in 1963 according to official data.

Added emphasis has been placed on increasing sericulture in recent years. This industry, one of the oldest in North Vietnam, is a cottage-type industry from the production of mulberry trees to the spinning of thread. Mulberry trees occupied about 6,600 acres in 1963. They are common throughout the country, but are most heavily concentrated south of Hanoi in the Tonkin Delta.



From available information, it is estimated that 1 acre of mulberry trees can support enough silkworms to produce about 220 pounds of cocoons, from which about 12 pounds of silk thread can be obtained. Production of silk cloth increased from 300,000 meters in 1955 to almost 10 million meters in 1963. This rapid increase may not continue because of the growing emphasis on artificial fibers in world trade.

## LIVESTOCK AND LIVESTOCK PRODUCTS

Livestock is a subordinate part of North Vietnam's agriculture but is slowly growing in importance. In 1963, the value of the output of this industry (including fish raising on farms) amounted to almost 19 percent of the total value of agricultural output. The country's livestock industry is important principally as a source of draft power and secondly as a source of food and fertilizer.

During the pre-Communist era and up to the enforcement in May 1963 of regulations regarding the use of cropland for producing feed for livestock, there were no specific provisions for using cultivated land for the production of livestock feed. Pigs and poultry were scavengers, and cattle, horses, and buffaloes--used mainly for draft power--were grazed along paddy dikes, trails, and in uncultivated areas of native grass because of the lack of feed.

In 1961, over one-half of the buffaloes, one-fourth of the cattle, and over one-third of the hogs were in the hill and mountain areas. Today farmers still obtain large animals from the hill areas. Pigs and poultry are raised in cultivated areas where agricultural, industrial, and kitchen wastes are used to supplement feed produced on private plots and on designated areas in the APC's and collective farms.

The Model Laws for APC's and collectives, issued in 1959 and implemented in 1963, are part of a policy which has been emerging for a number of years in North Vietnam. <sup>5/</sup> Its basic goal is to increase the production of livestock through collective effort. It provides for collective centralized hog raising, hog raising production teams, and other members assigned to raise hogs. In 1964, 3,822 APC's and collectives were breeding pigs on a collective basis, but the number of pigs averaged only 25 per collective unit. The production of livestock has been erratic under Communist rule, although some progress has been made (table 7). During the poor crop year, 1960, production of cattle, milk cows, rabbits, goats, chickens, and ducks declined sharply.

Social, economic, and cultural factors have hindered the development of the livestock industry. In North Vietnam, native breeds of hogs and poultry are kept for meat and the large animals are used for draft. Exceptions occur in the highlands where some cattle are raised for slaughter and around the larger cities where a dairy industry is being developed. Breeds classified according to use have not become prominent, although such identification is the aim of the breeding programs. Only recently has attention been directed to the care and feeding of livestock in the cooperatives.

---

<sup>5/</sup> The Communist terminology is Model Laws for Agricultural Cooperatives.

Table 7.--Numbers of major types of livestock in North Vietnam, 1939, 1955-63, and 1965 plan 1/

Year	Cattle	Water buffalo	Horses	Hogs	Poultry <u>2/</u>
	----- <u>Thousands</u> -----				
1939 .....	563	788	35	2,255	n.a.
1955 .....	756	1,084	n.a.	2,137	n.a.
1956 .....	834	1,165	21	2,500	n.a.
1957 .....	906	1,238	23	2,950	n.a.
1958 .....	992	1,376	28	3,985	n.a.
1959 .....	950	1,447	32	3,629	n.a.
1960 .....	879	1,451	39	3,751	47,469
1961 .....	781	1,450	n.a.	3,740	42,579
1962 .....	786	1,480	n.a.	4,239	43,611
1963 .....	796	1,508	n.a.	4,208	57,684
1964 <u>3/</u> .....	820	1,535	n.a.	4,230	n.a.
1965 plan ...	<u>4/</u>	<u>4/</u> 2,550	54	5,800	n.a.

1/ The livestock census is dated October 1. Officials often use a common livestock figure for both the inventory date and end of the year.

2/ Includes chickens and ducks.

3/ Preliminary estimates.

4/ Plans for 1965 aggregate cattle and water buffaloes.

Source: Same as table 4.

The most recent development in the livestock industry in North Vietnam has resulted from the implementation of the Model Laws for APC's. It is an obvious effort by the government to gain greater control over the livestock industry and stimulate its expansion. The law declares that all horses, oxen, and water buffalo are public property, and that agricultural units surrender these livestock to community ownership. The APC or collective acts as the agent for the community. It contracts with and encourages peasants to raise livestock. Owners of livestock are paid the going price when they surrender their livestock; they raise livestock on a contractual basis.

Incentives to peasants include extra payment for overfulfillment of goals, a share in the increase from offspring, the right for raisers of stud stock to receive dues, and for raisers of hogs to keep 30 percent of the salable pork for individual use, and permission to those raising hogs as a special enterprise to sell any surplus in the free market. The collective must allocate 5 percent of its land for peasant use and an additional 5 percent for the production of feed. It also must set the standard for raising and maintaining livestock, including the inspection and inoculation of animals, and recognize persons who perform livestock raising outstandingly.

## MARKETING

Two marketing systems, private and state oriented, exist side by side in North Vietnam. The private marketing system, once significant, declined after 1955; it handled 80 percent of the retail trade in 1955 but less than 9 percent in 1960. Some increase in private trade is believed to have occurred since 1960 when the government was forced to relax domestic trade restrictions because of the tight food situation. In the state-controlled sector, three types of marketing institutions exist: state-controlled stores, so-called supply-marketing enterprises which are under the direction of State Trading Corporations, and stores owned jointly by the state and private citizens. Although many private merchants still play a significant role in domestic trade, they operate under state contract and sell a limited variety of products at fixed state prices. Private trading is more abundant in rural than in urban areas.

Trade in grain (mostly rice) constitutes the bulk of the marketing activity. A large proportion of farm products is marketed through the network of peasant supply-marketing units in rural areas. They constitute a thinly disguised mechanism whereby the government can tightly control the collection of crop production quotas and also regulate the distribution of food, farm supplies, and other processed products.

Under the system of collective farms, marketing of farm products has become an impersonal function for most peasants; exceptions are those peasants who market the surplus produce from their private plots at food fairs in the villages and at designated food stalls in the provincial capitals and larger cities. These activities have been discouraged by the government in line with its promotion of the collective. The government-controlled marketing system is organized to utilize the limited transportation facilities as efficiently as possible. The collective may act as the agent for the government in collecting surplus produce from the peasant member (at lower than free market prices) and in delivering it to the supply-marketing units. All collection units are linked by the transportation network to state-operated warehouses, which in turn supply raw materials to processors and are sales points for unprocessed farm products.

The distribution and storage system has been improved considerably since the Indochina War (in which the transportation system suffered the heaviest losses). Many inadequacies still exist, especially in the storage function. Indeed, much of the heavy losses of food occurs from inadequate storage and improper handling. Reports from various technicians indicate that the annual loss of food in North Vietnam varies from 15 to 20 percent and that the loss of all agricultural products amounts to as much as 10 percent. Much of this loss is attributed to insects, pests, and rats during storage. Cold storage and processing industries are still in their infancy. The inadequacies of these facilities have been major deterrents to a more rapid increase in perishable foods (fish, meat, and dairy products) and account for much of the loss of fresh foods. Primitive methods of storage and preserving often greatly alter the flavor and physical characteristic of food and increase the risk of shortages in periods of poor harvest. Such conditions seriously limit the diet.

## FOREIGN AID AND TRADE

Two major factors account for the rapid change in the makeup and expansion of North Vietnam's foreign trade: (1) the large amount of foreign grants and loans by Sino-Soviet Bloc countries, and (2) the exploitation of agriculture as a means of obtaining foreign exchange. The country was oriented into the Bloc's foreign trade complex by initial large grants, followed later by loans at low interest rates. These grants and loans, amounting to over \$900 million between 1953 and 1961, helped to avert the collapse of the new country's economy. Communist China, which contributed over 50 percent of total grants and credits, played the leading role in rehabilitating and expanding the transportation and irrigation systems. Communist China also helped in developing light industry, including the construction of 14 rice mills, 3 sugar refineries, 2 cigarette factories, a match factory, a knitted goods factory, an iron and steel plant, a rubber goods factory, and several chemical plants. The USSR contributed food processing plants and helped develop electric power, mining industries, and the chemical industry. The Soviet Satellites furnished mostly materials for the construction and operation of light industry.

Most of North Vietnam's current trade, which is a virtual state monopoly directed by the Ministry of Foreign Trade, grew out of these transactions. Long-term credits for developing industry extend over much of the 1960's and are interest free until the beginning of installment repayments. These provisions were granted to provide time for the development of industries and agriculture. Agricultural production, however, did not respond as expected. The value of exports subsequently increased from 10 percent of total imports in 1955 to only 59 percent of total imports at the end of 1961. A large proportion (82 percent) of these exports were industrial and homemade products, many of which were earmarked for domestic consumption. Although agricultural exports increased during this period, the proportion of agricultural exports to total exports declined (table 8). The regime's efforts to counteract this decline has resulted in directives aimed to stimulate production of exportable products, increase high yielding crops, cut consumption (thereby increasing exports), and decrease the import of goods for food consumption.

The Communist Bloc maintains a firm grip on North Vietnam's trade: 85 percent of the country's exports go to Communist countries and 90 percent of imports derive from the Bloc. This influence is likely to continue for many years because of credit arrangements, and because many of the country's exports are not popular in many Free World countries. Major exports include timber, wood flooring, tea, canned fruits, tobacco, rush mats, rattan products, leather goods, horns, bones, rice, corn, sweetpotatoes, peanuts, castor beans, coffee, and minor forest products. Major imports include whole installations (factories, communication centers, irrigation facilities, and heavy equipment), machinery, spare parts and equipment, tools, minerals and other raw materials, cotton, wool, fuels, electric appliances and parts, building materials, industrial chemicals, fertilizers, and consumer goods (grains and other foodstuffs, office supplies, art works, pharmaceuticals, etc.). Based on official trade figures, with 1960 equal to 100 and the 1965 goal equal to 174 for exports and 130 for imports, the country will still have a trade deficit of almost 50 million U.S. dollars.

Table 8.--Value and composition of imports and exports in North Vietnam, 1955-61

Item	1955	1956	1957	1958	1959	1960	1961
	- - - - - Million U.S. dollars - - - - -						
Total trade:							
Imports .....	73.6	78.6	99.4	63.3	104.5	127.9	143.7
Exports .....	6.8	20.4	40.8	51.2	67.3	79.8	79.8
	- - - - - Percent - - - - -						
Exports:							
Industrial <u>1/</u> ....	22.7	64.3	39.7	53.1	59.0	65.1	82.0
Agricultural <u>2/</u> ..	77.3	35.7	60.3	46.9	41.0	34.9	18.0
	- - - - - Percent - - - - -						
Imports:							
Capital goods ....	45.1	69.0	70.0	71.0	81.0	90.0	90.2
Consumer goods ...	54.9	31.0	30.0	29.0	19.0	10.0	9.8

1/ Includes handicraft and homemade articles.

2/ Also includes forestry, fishery, and animal products.

Source: Three Years of Cultural and Economic Development, Democratic Republic of Vietnam, Directorate General of Statistics, Hanoi, 1961. Annual and semi-annual announcements of plan fulfillment in various issues of Nhan Dan (The People), Hanoi, for years 1955-64.

## FOOD SUPPLY

### Availability

Traditionally, North Vietnam has been a food-deficit area. Although the present regime claims self-sufficiency in food production, average consumption likely is below prewar levels. The government's system of collection, rationing, and utilization has probably improved distribution, but these actions may be a substitute for the claim of increased production.

The Communist regime claims that from 1959-64 foodstuffs increased an average of 4.5 percent per year; that the perennial food shortages between the fall (October-November) and spring (May-June) harvests were eliminated; that the daily intake of food for a large part of the population rose from one to two meals a day; and that the composition of the food changed from gruel to rice, corn, and potatoes. If the minimum standard by which the regime determines self-sufficiency in food (300 kilograms of paddy rice produced per person) is applied, the country has been self-sufficient for 6 of the 10 years of its existence. This assumes that subsidiary food crops are included in the rice figure, otherwise self-sufficiency was attained only in 1959. Estimates of per capita food production for the years after 1959 are shown in table 9.

Table 9.--Estimated per capita production of major food crops in North Vietnam, selected years 1/

Year	Rice	Secondary crops (rice equivalent) <u>2/</u>	Total food
----- <u>Kilograms</u> -----			
1939.....	175.7	15.6	191.3
1955-59 (average) ..	280.0	31.0	309.0
1959 .....	330.8	32.6	363.4
1960 .....	263.2	28.4	291.6
1961 .....	285.3	44.1	329.4
1962 .....	273.6	44.0	317.6
1963 .....	254.2	40.7	294.9
1964 <u>3/</u> .....	260.8	53.0	313.8
1965 plan <u>4/</u> .....	260.2	119.8	380.0

1/ Based on official reports of production for rice and secondary crops and on estimates of population, which were larger than official figures prior to 1960 but smaller than official figures since 1960.

2/ See footnote 1 of table 5.

3/ Preliminary estimates.

4/ If the ratio of 4 to 1 (conversion of sweetpotatoes and manioc to rice) is applied to the secondary crop figure, it is reduced to 75.1 kilograms per person. This reduction results in a total per capita food figure of 335.3 kilograms or 6.3 million tons of food in 1965, compared with the official goal of 7.1 million tons.

Source: Tables 4 and 5.

Despite official claims of adequate supplies, the food problem is serious. The original goal of 9.5 million tons of food (rice equivalent) in 1956 was drastically reduced to 7.1 million tons and the goal for hogs, a major source of animal protein, was cut from 8 to 5.8 million. Performance during the first 4 years of the First Five-Year Plan offers small hope for attaining even the modified plan goals.

To maintain its control over the economy in times of scarcity, when survival becomes an individual problem, the regime has tightened its policy on food collection and distribution. Policy measures include imposition of compulsory deliveries and the purchase of surplus food from peasants, restriction of the free market, reduction of the population in urban areas, adoption of more stringent standards for distribution of food and industrial goods to peasants, and placement of greater responsibility on APC's and collectives to feed their own members. The regime has advanced the principle of payment "according to labor" to encourage increased effort in food production.

## Consumption

Consumption of food in North Vietnam is at a low level and prospects for improvement in the near future are not bright. The general consensus from available information and reports by Western visitors is that the present level of consumption is lower than the prewar level.

Studies made of food consumption and dietary habits related to various periods prior to and after World War II in areas including the present area of North Vietnam indicate that a reduction occurred from about 1,800-2,300 calories per day before the war to about 1,400-1,900 calories per day during the early 1950's. These estimates of calorie yields were for diets composed of 67 to 75 percent rice and corn and 10 to 15 percent tubers (sweetpotatoes and manioc) and legumes. Other important items were fish and fish products and miscellaneous items such as irregularly consumed meat, poultry, oilseeds, vegetables, and fruits. Changes that have occurred in the availability of some foods since the early 1950's have not been sufficient to significantly alter the basic traditional diet.

Applying the above proportion of rice to official claims of rice consumption (including subsidiary crops) for the period 1957-60 (the period of highest food intake under the Communist regime), the average annual calorie value is about 1,700-1,900 calories per person per day. Since 1959, the food condition has deteriorated. Major food items such as rice, meat and animal fat, and sugar are rationed. During the critical food shortage of 1960-61, the monthly rice ration fluctuated from a high of 15 kilograms per person in the latter part of 1960 to 9 kilograms per person in early 1961. Meat and fats were rationed at 500 grams per person per month in May 1961--an average of 6 kilograms per person per year. In May 1963, the meat ration was reduced to 100 grams per person every 2 weeks--an average rate of consumption of 2.6 kilograms per person per year.

The problems of distribution and consumption have been traditionally associated with the country's efforts to produce adequate food. Food supplies are smallest during the period preceding the May-June harvest of rice and secondary crops. Adoption of a rationing system and tighter government controls on compulsory deliveries have resulted in a more even distribution of foodstuffs, but at a lower level of consumption in many areas. Furthermore, the government has siphoned off a larger amount of agricultural products for export. The government's goal to increase the levels of food consumption and agricultural exports in the magnitude suggested in the First Five-Year Plan appeared to be beyond realization at the beginning of the final year of the Plan.

## FISHERIES

The fishing industry of North Vietnam is state owned and is administered by the Department of Fisheries of the Ministry of Agriculture and Fisheries. The construction and administration of state processing enterprises are under the jurisdiction of the Ministry of Industry. Most of the approximately 500,000 fishermen and their families belong to Socialist groups whose organization and functions are similar to collectives in agriculture. Not all the

fishermen are fully employed in fishing activities; many are members of APC's and collectives and others work at various handicraft trades. In many areas, fishing enterprises are being incorporated into APC's.

Although backward by Western standards, the fishing industry is an important branch of the country's economy. Fish is the main source of animal protein; its consumption is almost double that of meat. The extensive coastline, numerous rivers, lakes and ponds, and the large area of rice paddies provide an almost unlimited resource for fish culture. Only a small percentage of these natural resources has been exploited. The main reasons are lack of marketing, transportation, refrigeration, processing, fishing equipment, and technical competence. Areas of fishing and consumption are confined mainly to the coastal areas and to a lesser extent to inland waterways. Processing is geared mainly to preparing fish for fresh consumption. The fish factory at Haiphong (built by the Soviets in 1958), however, processes small quantities of fish for export. Large amounts of fish are utilized in the making of Nuoc-man--a very nutritious but foul-smelling fish sauce derived from a traditional formula; this sauce is used in inland areas and during the slack season. Small amounts of fish are preserved by salting and drying.

Numerous species and varieties of marine life make up the annual fish catch. The annual catch has steadily increased from about 94,000 tons in 1955 to over 220,000 tons in 1961 (table 10). Although most of the catch is taken from the ocean, it is made up primarily of the varieties which inhabit shallow waters near the shore. Deep sea fishing has developed slowly because of lack of equipment and slow technological development.

During recent years, the government's major effort has been concentrated on developing inland fishing because of its large potential. Inland fishing areas include almost 2.5 million acres of ponds, lakes, rivers, canals, and paddy fields. Fresh-water fish production increased from 1,500 tons in 1955 to about 85,000 tons on 320,000 acres of water area in 1963. The goal for 1965 is 200,000 tons of fresh-water fish and 670,000 tons of all types of marine products, a goal which appears far in excess of fulfillment.

## FORESTRY

Forests occupy 50 percent of the land in North Vietnam, or 19.5 million acres, with official estimated reserves of 1.5 billion cubic meters of timber. Twelve percent of the forest area has dense forests with over 120 cubic meters (51,475 board feet) per acre; 65.5 percent has medium forests with 70 to 120 cubic meters per acre; and 22.5 percent has no commercial trees. Most of the country's forests are second growth. Evergreen forests with a large diversity of tree species are found on the plains and hill areas up to about 2,300 feet. At higher elevations are deciduous vegetation of subtropical and temperate climate types. Bamboo, the country's major building material, grows profusely on the lower hills and plains, and palms and marsh-loving trees, particularly mangrove, are found along the shoreline. The country's hot climate, abundant precipitation, and high humidity are conducive to the rapid growth of tropical forests.



Table 10.--Fish catch, prewar and annual, in North Vietnam, 1939 and 1955-63

Year	Fresh water <u>1/</u>	Salt water	Total
	- - - - - <u>1,000 metric tons</u> - - - - -		
1939 .....	n.a.	n.a.	97.5
1955 .....	1.5	92.5	94.0
1956 .....	n.a.	n.a.	119.6
1957 .....	18.3	111.1	129.4
1958 .....	27.8	128.2	156.0
1959 .....	38.2	167.3	205.5
1960 .....	54.2	177.8	232.0
1961 .....	78.0	<u>2/</u> 144.9	<u>2/</u> 222.9
1962 .....	66.3	n.a.	<u>3/</u> 288.7
1963 .....	85.0	n.a.	n.a.

1/ Includes ponds, lakes, and ricefields.

2/ Calculated from report by Director of Fishing Enterprises, Hanoi, April 6, 1962.

3/ Planned production according to Director of Fishing Enterprises, footnote 2.

Sources: JPRS: 8,980, Sept. 29, 1961, Agricultural Production in North Vietnam during Last 15 Years. (Translated from Thanh Tieh San-xuat Nong-nghiep Trong 15 nam Dueo Che-do Viet-nam Don-Chu Cong-hao), Ministry of Agriculture and Forestry, Hanoi, November 1960. JPRS: 28,726, February 12, 1965, Statistical Data, 1963. (Translated from So Lieu Thong Ke, 1963), Hanoi, 1964. Nghien Cuu Kinh To (Economic Studies), Hanoi, No. 19, February 1964.

Of the two major forests types (broadleaf, comprising mixed evergreen and deciduous, open or scrubby deciduous, and mangrove species, and coniferous, comprising pine), the broadleaf types predominate. Within the mixed evergreen and deciduous types are numerous species and subtypes which vary in composition according to latitude and elevation; such species comprise the tropical rain forest, the subtropical moist forest, and the monsoon forest. These trees make up a large percentage of second-growth forests on land in areas where slash and burn farming practices are common. The more valuable of these species, located in remote areas, are utilized for lumber. Only a few commercial stands of pine remain; their depletion has resulted from overcutting for lumber and for pitprops by the mining industry. In recent years, the government has made continuous efforts to reforest large areas with pine species.

Nonwood resources of the forest are abundant: besides bamboo, they include rattan, naval stores, cardamom, star anise, cinnamon, pinks, various tannins, lac, benzoin, astringent and aromatic substances, and dyes. The forests also provide the natural habitat for a large assortment of wild animal life and numerous edible herbs and fruits, all of which are valuable sources of food, especially during poor harvests.

The tradition of state ownership of forest land has continued under the Communist regime. Forests were administered by the Main Administration of Forests under the Ministry of Agriculture and Forestry until 1963 when forestry became a separate branch. State control has been only partially effective because of the low level of technology in both utilization of forest resources and in developmental programs. Technological backwardness has resulted from inability to train native technicians and administrators after the departure of the French. Heavy exploitation and destruction of forest areas during the Indochina War and indiscriminate cutting of wood for home use near population centers further devastated the forests. Consequently, forestry has become the poorest developed sector in the economy.

Attempts at reforestation have been meager; they include planting pine seedlings on eroded hills and establishment of tree belts along the coast to strengthen sea dikes. During the period 1960-63 an annual average of 150 million trees reportedly were planted.

The utilization of forest products generally is far removed from the source of supply. Most processing plants are located near cities or population centers--adding time and cost to the product. The most important product is timber. Though small, its output has increased significantly; from 362,380 cubic meters in 1955 to 992,300 cubic meters in 1963, according to official claims. The plan for 1965 is 1,310,000 cubic meters.

With the completion of new processing facilities, demand has increased for construction timber, furniture timber, and luxury woods. Also, demand for firewood and wood for charcoal is heavy. In the past, the use of timber for fuel exceeded that for commercial uses. In recent years, timber and wood products have increased in importance as exports, along with nonwood products.

#### OUTLOOK

The delicate balance between land availability and an increasing population is the root of North Vietnam's economic problems. As yet, industrialization is minimal; therefore, the country must depend all the more on a sound agricultural economy. Not only must the land feed the population, it must also produce raw materials and earn foreign exchange. Shifts in emphasis due to policy changes, natural disasters, and increase in population leave little if any margin of safety in which the regime may operate. The country's surge toward industrialization has led to a larger demand for foreign exchange, an increased urban labor force which consumes but does not help to produce food, and an increased demand for types of consumer goods which either the country cannot yet produce or which it must export to prevent an even larger imbalance in trade.

The short period of independent farming, the initial stimulus of land reform, and the beneficial accruals of monetary and credit reform and foreign aid resulted in a rapid rise of the economy from 1958-60. By the end of 1959, the Communist regime could justifiably say that the country had attained self-sufficiency in the production of basic foods. There were even some surpluses for export.

During 1960, the cumulative effects of socialization, overexpansion, and miscalculation of peasant support, together with a poor agricultural year, were manifest in almost every sector of the economy. To compound the difficulty, the regime was then inaugurating its First Five-Year Plan. This plan, calling for an increase of 148 percent in the industrial sector and a 61 percent increase in agricultural production, was revised downward in 1963 to 119 percent and 37 percent, respectively. Even the revised goals appear to be beyond the reach of the regime, particularly those for agriculture. Revisions in the goal for food crops were the most radical; the goal of 9.5 million tons, of which 7 million tons were rice, was reduced to 7.1 million tons with rice reduced to 5 million tons. These revised figures were 200,000 tons smaller than production in 1959 and 2.6 million tons less than the original plan for 1960. The plan for hog numbers likewise was revised--from 8.5 million to 5.8 million. These revisions were forced following 10 years of claimed improvement in technology, increases in the irrigated area, production of fertilizer, and the cultivated area, and substantial increases in the area of multiple cropping.

The Communist regime, failing to realize the need of the farmer to use his traditional tools and experience to maintain a livelihood within very narrow economic limits, has imposed its socialistic structure. The condition which has resulted testifies to the fallacy of imposing central rule in agricultural production, particularly where labor is the major input.

The above examples are bleak evidence that the regime has not been successful in establishing the new social order. Collectivization of agriculture, the mainspring of Communist control of that sector, has missed its goal by a wide margin. Peasants have been forced to consume only what the state would allow, and as producers to give up all but their minimum needs and to yield to a set standard for work, evaluation, and payment. Control of this kind is unsuited to the temperament of the Vietnamese farmer. Politically reliable but incompetent peasants have become the administrators of cooperatives and directors of production. Training these personnel and orienting cadres to field work with cooperative members have encountered almost insurmountable barriers. After years of training, it was admitted in 1962 that only 43 percent of the socialized farming units were able to draft their own yearly production plans.

A general deterioration of Communist morals has occurred and many economic crimes are committed against the state. Breakdowns in discipline among cadres and cooperative directors are common. In 1963, some peasants left cooperatives and many earned the major portion of their income outside the cooperative. Many agricultural and industrial developmental projects have been slowed down or abandoned because of reduced aid and the withdrawal of technicians by the USSR and the European Satellites. Numerous delta families have been uprooted during the past 3 years and have been sent to unfamiliar mountain and hill areas to clear and settle on land claimed by hostile non-Vietnamese mountain dwellers. These families reportedly produce less than 200 kilograms of food per person annually, or about two-thirds of needed production. Following the poor grain harvests in 1963, food prices rose sharply and rations were further reduced.

The economy thus is following an uncertain course, on somewhat of a hand-to-mouth basis. The food situation eased somewhat following better harvests in 1964. However, it is likely that this occurred at the expense of agricultural tax collections and export commodities, which in turn are expected to lead to scarcities of foreign exchange. Thus, the purchase of raw materials for the industrial sector will probably be affected. After admitting serious setbacks in 1963, the regime indicated that the two major tasks facing the country were to increase production on the basis of the existing material and technical basis and to raise further the sense of economy in every sphere so as to build the fatherland and socialism economically. This resignation implies a slowdown in the industrial expansion program, a reduction of plan goals, and more self-reliance both economically and technically. The methods to be employed in rejuvenating the economy resemble those which have been standard under the Communist banner, that is, "belt tightening." With few exceptions, however, inadequacies of trained technicians, shortages of raw material, and the general lack of foreign currency provide little hope for increasing the economy at a rate even approaching the magnitude envisioned in the First Five-Year Plan.

## SELECTED REFERENCES

China Quarterly, The

1962. A Special Survey of North Vietnam. No. 9, Jan.-Mar.

Directorate General of Statistics

1961. Three Years of Cultural and Economic Development. Democratic Republic of Vietnam, Hanoi.

Fall, Bernard B.

1956. The Viet-Minh Regime, Government and Administration in the Democratic Republic of Vietnam. Institute of Pacific Relations, New York.

Gourou, Pierre

1953. The Tropical World. Longmann, Green and Co., New York.

Pacific Affairs

1958. Economic Development in North Vietnam. Vol. 31, No. 1, Mar.

Radio Free Europe

1959. Collectivization in North Vietnam--Second Attempt. Munich, Jan.

---

1959. Collectivization in Vietnam. Munich, June 29.

U.S. Department of Commerce, Office of Technical Services, Joint Publications Research Service (JPRS), Washington, D. C.

### Translations from North Vietnam Serial Publications

Selected Translations on North Vietnam

No. 1 (JPRS: 8,247, May 11, 1961) to No. 9 (JPRS: 8,610, July 21, 1961).

Translations from Nhan Dan (The People), North Vietnam

No. 1 (JPRS: 9,410, June 14, 1961) to No. 33 (JPRS: 14,392, July 6, 1963)

Translations from North Vietnam Periodicals

No. 1 (JPRS: 8,985, March 10, 1961) to No. 38 (JPRS: 14,160, June 19, 1962).

Translations on North Vietnam's Economy

No. 1 (JPRS: 14,603, July 26, 1962) to No. 126 (JPRS: 26,571, Sept. 28, 1964).

### Special Translations

JPRS: 607-D, March 20, 1959, Natural Resources of North Vietnam.

JPRS: 632-D, April 1, 1959, Government Report on the Three Year Plan of North Vietnam.

JPRS: 894-B, Sept. 3, 1958, Agricultural Reforms and Cooperativization in North Vietnam and North Korea.

OFFICIAL BUSINESS

- JPRS: 394-D, Sept. 3, 1958, Economic Problems of the Eastern Countries.
- JPRS: 1,656, June 9, 1959, Vietnam Forest and Problems of Forestry.
- JPRS: 7,437, Jan. 8, 1961, The Democratic Republic of Vietnam: Economy and Foreign Trade.
- JPRS: 8,980, Sept. 29, 1961, Agricultural Production in North Vietnam During Last 15 Years.
- JPRS: 10,174, Sept. 19, 1961, Selected Translations from Nghien Cuu Kinh Te (Economic Research).
- JPRS: 13,278, April 2, 1962, Physical Nature of North Vietnam.
- JPRS: 17,831, Feb. 26, 1963, Economy in China, North Korea, and Vietnam.
- JPRS: 19,952, June 20, 1963, North Vietnam's First Five-Year Plan.
- JPRS: 28,726, Feb. 12, 1965, Statistical Data, 1963.