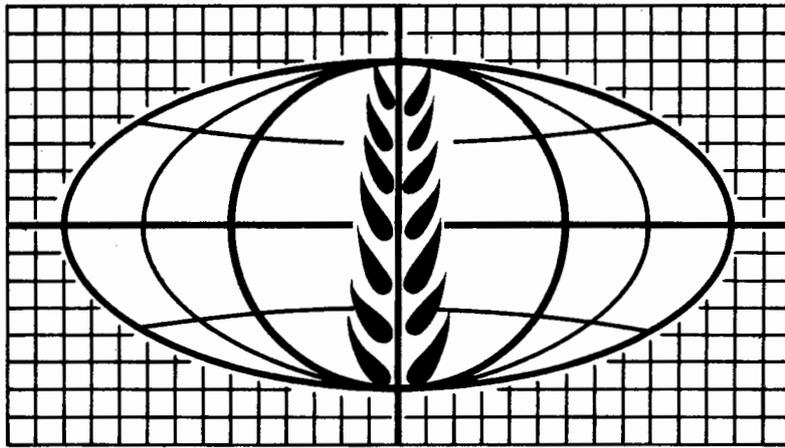


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THE AGRICULTURAL SITUATION IN THE PEOPLE'S REPUBLIC OF CHINA

AND OTHER ASIAN COMMUNIST COUNTRIES

Review of 1973 and Outlook for 1974

**U.S. DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE**

Washington, D.C.

Tri-Agency Reading Room
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CONVERSION EQUIVALENTS

Pounds per bushel

Wheat and potatoes	60
Rye and corn	56
Barley	48
Oats	32

One kilogram	equals	2.2046 pounds
One centner or metric quintal	"	220.46 pounds
One metric ton	"	10 centners or 2204.6 pounds
One hectare	"	2.471 acres
One acre	"	0.4 hectare
One kilometer	"	0.6 mile

Metric tons to bushels

<i>One metric ton</i>	<i>Bushels</i>
Wheat and potatoes	36.743
Rye and corn	39.368
Barley	45.929
Oats	68.894

Bushels to metric tons

<i>One bushel</i>	<i>Metric tons</i>
Wheat and potatoes02722
Rye and corn02540
Barley02177
Oats01452

To convert centners per hectare to bushels per acre, multiply by:

Wheat and potatoes	1.487
Rye and corn	1.593
Barley	1.8587
Oats	2.788

To convert bushels per acre to centners (metric quintals) per hectare, multiply by:

Wheat and potatoes	0.6725
Rye and corn	0.6277
Barley	0.5380
Oats	0.3587

One metric ton of ginned cotton = 4.593 bales of 480 pounds.

ABSTRACT

Agricultural production in 1973 increased in the People's Republic of China, the Mongolian People's Republic, and North Korea, but production declined in the Democratic Republic of Vietnam. PRC grain and cotton production and imports rose to record levels in 1973. All countries plan production increases for 1974 based on increased farm inputs. The weather situation for the first quarter of this year in China and North Vietnam was not as good as last year.

KEY WORDS: People's Republic Of China, Democratic Republic of Vietnam, Mongolian People's Republic, North Korea, Agricultural production, Agricultural inputs, Agricultural policies, Foreign trade.

FOREWORD

This report summarizes major agricultural developments in the People's Republic of China (PRC), the Mongolian People's Republic, North Korea, and the Democratic Republic of Vietnam (North Vietnam). Emphasis is on production, trade, and policy changes in 1973 with some outlook for 1974.

Authors of the PRC section were Frederick W. Crook, Linda A. Bernstein (trade), Sheldon Tsu and Frederick W. Crook (livestock), and James Scullen, Jr. (inputs). Charles Y. Liu also assisted in the preparation of this report. Principal authors of the other sections were James Scullen, Jr. (Mongolia), Sheldon Tsu (North Korea), and Marion R. Larsen (North Vietnam). The report was prepared under the supervision of Frederick W. Crook, formerly leader of the Communist Asia Program Area.

Comments of reviewers in the Economic Research Service and in the Foreign Agricultural Service are acknowledged with appreciation.

Other agricultural situation reports have been published for the Soviet Union, Western Europe, the Western Hemisphere, and the Far East and Oceania. A report on Africa and West Asia is forthcoming.

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THE AGRICULTURAL SITUATION IN THE PEOPLE'S REPUBLIC OF CHINA AND OTHER ASIAN COMMUNIST COUNTRIES:

Review of 1973 and Outlook for 1974

SUMMARY

In 1973, agricultural output increased over 1972 levels in the People's Republic of China (PRC), the Mongolian People's Republic, and North Korea. Only in the Democratic Republic of Vietnam (North Vietnam), where weather was unfavorable, did agricultural production decline. And aside from North Vietnam, the agricultural sectors of these Asian Communist countries were not affected by unusual domestic or international events. In North Vietnam, 1973 was a year of reconstructing the agricultural economy after the signing of the January 1973 peace agreement.

People's Republic of China

Crop output in the PRC rose sharply in 1973 from 1972's weather-damaged output. PRC officials claimed that 1973 grain production was at a record level. Cotton, sugar, and tobacco production was also declared to be at record levels and oilseed production was better than in 1972.

PRC livestock production increased in 1972, but 1973 output stagnated because poor weather reduced fodder availability and the carrying capacity of range and pasture lands. A PRC news source recently indicated that hog numbers in 1972 had increased 4½-fold over 1949 levels, sheep and goats increased 3½-fold, and draft animals, by nearly 60 percent.

The major agricultural policies implemented in 1973 represented a continuation of policies adopted in previous years. Investments continued to be made with the aim of increasing crop yields. China purchased 10 foreign chemical fertilizer plants slated to be on line by 1978. Domestically produced fertilizer increased again in 1973, while imports of chemical fertilizers remained at levels of the past few years. Improvements were made in irrigation and drainage systems. Mechanization of agriculture continued but seems to be limited to specific labor-intensive tasks such as sowing and threshing. A road-building program through the years has now made it possible for most communes and many brigades to be reached

by truck and bus. Agricultural planning continues to be decentralized, with the production team playing a major role in making plans. Increased procurement prices, decreasing tax rates, and stability in rural institutions provided farmers with moderate production incentives.

During 1972/73 (July-June), China's wheat imports increased 86 percent over 1971/72 to 5.3 million tons—the highest level since 1965/66. Corn imports in 1972/73 increased sharply to 0.9 million tons. Cotton imports rose 179 percent to 418,000 tons—again the most ever imported by China in any one year. Bad weather in 1972, continued population growth, efforts to maintain stock levels, and consideration of consumer welfare prompted the record imports.

On the export side, soybean exports dropped 90 percent from calendar 1972—down to 37,000 tons, putting China, traditionally a significant net exporter, into practically a net import position. Preliminary information on 1973 exports of fresh, chilled, and frozen meat indicates that shipments totaled about 145,000 tons—roughly the same level as in 1972. In contrast to the heavy grain imports and declines in soybean exports, China's rice exports in 1973 rose 71 percent above calendar 1972 to 1.4 million tons.

After a lapse of more than two decades, 1973 was the first full year of two-way agricultural trade between the United States and the People's Republic of China. U.S. agricultural exports to China reached \$575 million; agricultural imports from China were \$21 million. China obtained major proportions of its 1973 agricultural imports from the United States. On a value basis, 3 percent of total U.S. farm exports were shipped to the PRC in calendar 1973.

During 1973/74, China is expected to import 9.2 million tons of grain, with 6.55 million tons coming from the United States. Cotton imports will likely reach 482,800 tons of which 228,600 tons will be supplied by the United States.

China's grain and cotton imports in 1974/75 could be lower. Some of the grain and cotton for 1974/75, as well as for 1973/74, was purchased before the outcome of the 1973 harvests was known, providing China with a hedge against poor spring crops. If good weather prevails through the growing season, China's 1974/75 import requirements for grain and cotton could be reduced. Such a decline, if it occurs, could reduce U.S. agricultural exports to the PRC in 1974/75. On the other hand, if adverse weather seriously affects crop yields later this year, additional PRC purchases from U.S. markets may be made in July-December 1974.

Mongolia

The Mongolian People's Republic enjoyed a successful grain harvest in 1973 and, more importantly, was able to increase the livestock herds which are essential to its agricultural economy. Meat and meat products, mostly mutton, are shipped each year to the Soviet Union's eastern Provinces, which are dependent on Mongolia for their meat supplies. Mongolia's other agricultural exports to the Soviet Union—mostly hides and wool—continued at normal brisk levels.

North Korea

North Korea reaped a good grain crop in 1973. Output of rice, corn, barley, and wheat was reported to be equal to or greater than 1972 production. The Government continued to implement its agricultural development plans by making investments in chemical fertilizer and farm machinery plants and

irrigation projects. Agricultural trade with non-Communist countries has expanded in recent years. In 1973 Argentina agreed to sell 500,000 tons of corn and 300,000 tons of wheat each year from 1974-1976.

North Vietnam

North Vietnam's agricultural production was down in 1973 because of unfavorable weather. The effect of the crop production decline, however, was partially offset by the good 1972 harvest. The economy showed some gains in 1973, the first year of the peace agreement. Agriculture's disappointing performance did not deter the implementation of development plans or lessen agriculture's role in the economic rehabilitation program.

Agricultural production in 1974 is expected to be better than in 1973, but probably not as good as in 1972. Also, it probably will not meet the Government's goals.

Plans call for agriculture to gear up its production so that goals of the country's second 5-year plan (1976-80) can be met. As part of the Government's effort to build a socialist industrial economy, collective farms will continue to be consolidated into large-scale production units.

Implementation of production plans and practices during 1974 does not appear promising. Unfavorable weather during the winter-spring cropping period has adversely affected planting operations, crop growth, and livestock production. The short supply of inputs—particularly chemical fertilizer—poor management at the production level, and weather uncertainty militate against the fulfillment of production goals set for 1974.

PEOPLE'S REPUBLIC OF CHINA

China's 1973 agricultural production rebounded from 1972's weather-damaged output. At the end of the year, the New China News Agency (NCNA) reported that China's 1973 "harvests hit all-time highs for grain, cotton, hemp and jute, sugar-bearing crops and tobacco." That oilseeds are conspicuously absent from the above list suggests that total production of soybeans, peanuts, rapeseed, and cottonseed did not fare too well in 1973—probably because of decreased acreages.

Factors contributing to the good 1973 harvests were generally favorable weather conditions, use of the improved seeds, increased use of chemical fertilizers, and expansion of irrigated area. In addition, Chinese leaders made special efforts to organize production activities well, and the rural labor force was mobilized early for farming activities. Also, increased production in the industrial sector in 1973 provided inputs which supported agricultural growth.

Grain

Total Grain Production

All Provinces except Hunan, Kansu, Kiangsi, Kwangtung, Kweichow, and Tsinghai reported good to record grain harvests for 1973. Ting Chung, a representative of the Ministry of Agriculture, stated in early October that 1973 grain production would exceed the 1971 record of 250 million metric tons. The year-end reports published in the Chinese press said grain production for the year hit an alltime high.

ERS analysts began making estimates of Chinese grain production in 1960, when China ceased to publish economic statistics on a regular basis. Since then, our estimates of China's grain production have been consistently lower than figures sporadically published in Chinese sources. ERS analysts are reviewing estimates of China's grain production in an attempt to reconcile differences between the two series. Until that study is completed and published, it

is our best judgement that China's 1973 grain production totaled about 228 million tons. Production estimates for the major grains for recent years are as follows:

	1973	1972	1972	1970
	<i>Thousand metric tons</i>			
Wheat	28,000	28,000	26,000	27,000
Rice	103,000	98,000	103,000	100,000
Misc.	72,000	65,000	72,000	73,000
Tubers	25,000	24,000	24,000	25,000
Total	228,000	215,000	225,000	225,000

Early-Harvested Grains

On August 1, 1973, NCNA reported that China had "reaped a bumper summer grain harvest." Summer grains, which account for one-third of China's total grain harvest, include early rice, winter and spring wheat, barley, and pulses. Wheat is discussed below, and the other grain crops are discussed in the section on late grains.

Wheat is China's second most important early grain after early rice. In autumn 1972, reports from China disclosed that the area sown to winter wheat was larger than in 1971 despite unfavorable weather. Substantial wheat area in drier regions was irrigated in the fall of 1972 and again in the spring of 1973. During the autumn and winter months of 1972, Chinese farmers expended much effort building irrigation facilities, machine-operated wells, ditches, and canals. That bucket brigades were formed in Shantung Province to irrigate drought-stricken fields is indicative of the measures taken to support crop growth. Late spring and early summer rains in 1973 in the major winter wheat areas to the south and east of the drought zone supplied adequate moisture for sustained crop development. Output from these areas, together with output from the expanded acreages of winter wheat, probably more than compensated for the small output in the drier regions.

During the past few years, acreage planted to winter wheat has expanded in Provinces south of the Yangtse River—Provinces which have historically been less important in winter wheat than Provinces to the north. In May and June 1973, reports from the Provinces of Fukien, Hupeh, Kwangsi, Kwangtung, and Yunnan disclosed that their winter wheat production was greater than 1972 production. Harvest reports from the important northern Provinces of Honan, Hopeh, Kiangsu, Shantung, and Shensi claimed good to bumper harvests. However, in August 1973, the Chinese press reported that the country's total 1973 wheat harvest equaled but did not exceed the 1972 record crop. Dry weather during the autumn and the winter of 1972 probably was the

primary reason for China's lack of a record wheat crop this year.

Late-Harvested Grains

No specific national report for late-harvested grain was published, but it is inferred from the statement on total grain production that the crop was good. Late grains, accounting for two-thirds of Chinese grain production, include intermediate and late rice, miscellaneous grains, and tubers.

Rice accounts for a little less than half of total Chinese grain production. Three rice crops are harvested each year. An early crop, planted from the middle of February to May, is harvested in June and July. The intermediate crop is planted in March through May and harvested in August and September. Late rice is planted May through August and harvested in October and November.

Because of an early spring in 1973, sowing and transplanting of early rice was completed earlier than in 1972. Acreage reportedly expanded in Chekiang, Hunan, Kiangsi, and Kwangsi Provinces, all of which are important producers of early rice. A Chinese press report in September 1973 stated that early rice production was at an alltime high.

Rice is the most important late-harvested grain crop. In 1973, area sown to intermediate and late rice increased in Fukien, Kwangsi, Kiangsi, and Hupeh Provinces. Good to bumper harvests were reported for 6 out of the top 10 producers: Kwangtung, Hupeh, Chekiang, Kwangsi, Kiangsu, and Anhwei.

Szechwan and Fukien, two other important rice-producing Provinces, evidently had good rice crops because reports said total grain production was good.

Miscellaneous grains, which together comprise the second most important grain crop in China, include barley, buckwheat, corn, millet, oats, pulses, rye, and sorghum. Dry weather in 1972 reduced production of these crops to below 1971 levels. This past summer, national and provincial reports said that these crops were growing well, and with the return of more favorable weather in 1973, production probably was well above 1972 levels.

Tubers, including sweet and Irish potatoes, manioc, and taro roots, are included in Chinese grain statistics and are converted to a grain equivalent at the ratio of four units of tubers to one unit of grain. Currently, the Chinese press publishes very little information on tuber production and neither provincial nor national reports were found. In past years, however, official Chinese data sources placed tuber production at about the same level as wheat. Tuber production in the past few years has probably increased slowly as population pressures in villages induced farmers to plant tubers on marginal land and in private plots.

Other Crops

Fiber

Reports of bumper harvests of cotton, hemp, and jute indicate that natural fiber production was up in China in 1973.

The cotton harvest was reportedly up 20 percent from the 1972 level, setting a new record. Production had declined in 1972, falling an estimated 15 percent below 1971 output, mostly because of dry weather in the northern and western sections of the North China Plain. As a result, Chinese officials began to mobilize resources to ensure a production increase for 1973. A National Cotton Conference, held in Peking and attended by Premier Chou En-lai, brought forth the slogan "We must pay close attention to grain, cotton, and cotton cloth." The slogan, attributed to Chairman Mao Tse-tung, suggests that cotton has perhaps become as important as grain in China's agriculture. Previous crop priorities, in descending order of importance, were grain, cotton, oilseeds, and other industrial crops.

The structure of Chinese agriculture is such that the communes' production teams must carefully weigh directions such as increasing cotton acreage. Most of China's grain is produced by these teams, milled within the commune area, and consumed by the population of the team. The first concern of the team is to ensure the supply of grain rations, either through its own production or through the production and sale of other crops and the purchase of grain from the state. If a team with good cotton land is considering expanding the area sown to cotton, it must necessarily think carefully about its source of grain rations. In an effort to promote cotton production, Chinese leaders gave assurance to production teams that grain rations would be forthcoming to those teams whose grain output declined because of the substitution of cotton for grain.

Area planted to cotton has declined slightly from the 1970 peak and is estimated to have remained fairly constant in the past few years—the 1973 area planted was about the same as in 1972. Production has been maintained and even increased in some years on this static area, partly through increased application of chemical fertilizers and irrigation water.

Cotton harvest reports were published for all major producing Provinces except Hunan. These reports of record crops or large percentage increases over 1972 support the New China News Agency yearend claim that "a bumper harvest has been reaped in our country this year. Total production, an all-time record, is 20 percent more than in 1972." The previous record, generally agreed to have been set in 1967, was 1.810 million tons.

Oilseeds

Oilseed production (soybeans, peanuts, rapeseed, and cottonseed) for 1973 is estimated to have slightly exceeded 1972 and 1971 output. Production declined slightly in 1971 to 13.7 million tons and decreased further in 1972 to 12.7 million tons because of drought in North and Central China and heavy rains in Northeast China.

As a result of more favorable weather, output of all the oilseed crops was higher in 1973 than in 1972. Production of soybeans and peanuts, however, is estimated to be below 1970 levels because of the assumed decline in area sown to these two crops. Provincial reports suggest the area sown to rapeseed for harvest in 1973 increased over that sown in previous years. Chinese press releases indicate 1973 production probably was slightly more than last year's estimated 1 million tons. Finally, as noted above, China reaped a record cotton harvest in 1973.

Estimated PRC oilseed harvests in recent years are as follows:

Year	Soybeans	Peanuts	Rapeseed	Cottonseed
	<i>Mil. tons</i>	<i>Mil. tons</i>	<i>Mil. tons</i>	<i>Mil. tons</i>
1967 . . .	6.95	2.30	0.80	3.60
1968 . . .	6.50	2.15	0.80	3.40
1969 . . .	6.20	2.35	0.70	3.25
1970 . . .	6.90	2.65	0.80	3.40
1971 . . .	6.70	2.58	0.83	3.57
1972 . . .	6.30	2.40	1.00	3.04
1973 . . .	6.70	2.60	1.05	3.65

Sugar and Other Crops

Sugarbeet acreages in Heilungkiang, Inner Mongolia, and Kirin Provinces were increased in 1973 and the Chinese reported that these Provinces, along with Sinkiang and other Provinces, produced a record crop. Sugarcane acreage probably expanded further in 1973. The crop, harvested in late fall and early winter, was reported to be at a record level for 1972/73. Harvest reports for the 1973/74 crop have not been published yet. With the good beet and cane harvests in 1972/73, raw sugar production for the season was reported at an alltime high, surpassing the previous peak by 190,000 tons.

Other industrial crops also fared well in 1973. A good tea crop was picked, and tobacco production was reported at an alltime high. Little information was received on fruits and vegetables, but with the return of good weather, production of these crops probably returned to more normal levels.

Livestock

An NCNA report from Peking on September 18, 1973, said, "China registered the biggest increase in

livestock in 1972." Reconciliation of that statement with the reported decline in 1972 crop production—and probably reduced forage and pasture production due to the unfavorable weather—apparently lies in the fact that the cattle inventory date has been changed from December 31 to June 30. Since the unfavorable weather conditions in 1972 largely occurred after the June 30 inventory date for livestock, the above press statement could well be true. Fodder and pasture conditions were generally good between July 1, 1971, and June 30, 1972.

Livestock numbers on June 30, 1973, are estimated to be about the same as in the previous year. The manner in which the September 18, 1973, report discussed livestock production in 1973 suggests the industry suffered some setbacks. Instead of reporting on the livestock population for the June 30, 1973, inventory date, the report stressed the achievements attained in 1972 (July 1, 1971-June 30, 1972). Moreover, the statement made no mention of production in the critical period between July 1, 1972, and June 30, 1973, when unfavorable weather could have reduced available fodder. The return of more normal weather in the spring of 1973 was too late to be of much assistance to livestock production. However, the report indicated that by September 1973, livestock numbers exceeded the level reported on June 30, 1972.

The September 18 NCNA press release also indicated that on June 30, 1972, the number of draft animals was 59 percent more than in 1949, and the increase for sheep and goats was 3½-fold and for pigs, 4½-fold. Based on official statistics for 1949 for these livestock categories, table 1 derives animal numbers for 1972.

Animal husbandry specialists indicate that it is biologically possible for hog numbers to increase 4½-fold in a 23-year period. To put the reported increase in perspective, we made a survey of hog-number increases in other countries. Since the Chinese Civil War ended in the fall of 1949, closely following the end of World War II, it was deemed more realistic to compare the 23-year period 1949-72 for China with the 23-year period 1945-68 for other countries. During the latter period, hog numbers in the following countries increased as indicated: The United Kingdom, 2.89-fold; Denmark, 4-fold; the Netherlands, 4.6-fold; the USSR, 2.8-fold; Taiwan, 4.2-fold; and the Philippines, 6.2-fold.¹

Is it possible that China, with limited cultivated land, a growing population, and relatively modest increases in grain production, could produce fodder to feed hogs at the growth rate implied by the NCNA statement? According to official statistics, grain production increased from 108 million tons in 1949 to

246 million tons in 1971 (the relevant year for Chinese livestock numbers), or about 1-1/3-fold. Part of the reconciliation of a 4½-fold increase in hogs with a 1-1/3-fold increase in grain production may lie in the fact that the growth rates for grain production and hog numbers may not have a direct correlation because feed rations for Chinese hogs contain only a modicum of grain, with the balance consisting of kitchen scraps, vegetables, and fermented forage materials, for example.

Since collectivization of agriculture in 1956, the Chinese Government has fostered a policy whereby collective farms must allocate a certain amount of their grain production as hog fodder. Also, the Government has promoted the use of new sources of fodder for hogs—for example, oilseed cakes and meal and fermented feed made from corn, soybean, and soybean stalks. Because a large proportion of the hogs are raised on private plots, kitchen scraps are an important source of fodder. Also, farmers may raise fodder on their private plots and on spare barren land. Furthermore, in their spare time, farmers may forage for fodder for their pigs on collectively owned land, forests, and streams. Copious amounts of labor are required to collect, prepare, and feed this fodder. Population increases through the years amply supplied the labor force needed to provide the fodder and husbandry for the ever-growing hog numbers.

It is generally assumed that China's grain imports, and, in recent years, oilseed imports, are destined for human consumption in urban centers. But it is also true that without such imports, domestic grain output would be taken from rural areas to feed city workers, hence lessening the amount of grain available for hogs. Thus, grain and oilseed imports do help the fodder situation in China.

Government encouragement of hog production began in the early 1950's and has continued. Hog production is promoted as a means of earning foreign exchange through the sale of hogs and hog products abroad, as a way for farmers to increase their income, as an important source of protein for the largely starchy Chinese diet, and as a means of increasing the supply of organic fertilizer through the utilization of waste products of the animals. The Government has stimulated hog raising by: (1) controlling procurement prices for hogs, (2) insuring fodder rations, (3) promoting improved hog-raising techniques, (4) improving veterinary services and disease prevention procedures, (5) providing insurance to hog raisers, (6) providing loans to farmers to purchase piglets, and (7) maintaining breeding stock in the communes.

Finally, in the past few years, numerous reports in the Chinese press have declared that the goal of "two to three pigs per household" has been achieved in many communes and counties. The September 18, 1973, NCNA report on livestock indicated that 800 of

¹The 1968 numbers minus the 1945 numbers divided by the 1945 numbers express the fold increases.

some 2,100 counties in Kiangsu, Hupeh, Chekiang, Yunnan, Heilungkiang, and nine other Provinces had achieved the pigs-per-household target. Assuming there were 874 million people in China in mid-1972, and that 80 percent, or 699.2 million, were rural, and that there were 4.4 persons per household, there were 158.9 million farm households in China in 1972. Even an average of one pig per household would yield 159 million hogs. One and a half pigs per household would yield 239 million hogs.

Tangential evidence uncovered, thus far, suggests that hog numbers in China have increased greatly since 1949, and that the growth could be of the magnitude indicated by the NCNA report.

Agricultural Policies

China's national economic objectives have changed little since 1949. They are: (1) to increase national power through rapid economic growth, (2) to build up a heavy industrial base (and related armament industries), (3) to achieve modern economic growth without large-scale foreign assistance, and (4) to socialize the economy under the direction of the Chinese Communist Party.

The main features of the current 5-year plan, 1971-75, were developed in the post Great Leap Forward period, 1960-62. Development of armament industries was given top investment priority, with heavy industry a close second.

General Agricultural Policies

The transformation of agriculture was to continue through increasing socialization of China's farmers. The technical transformation of Chinese agriculture was to be made viable through the allocation of more state investments than had been the case prior to 1962. Industry was to support agricultural production by providing modern inputs such as chemical fertilizers, pumps, and insecticides. During the Cultural Revolution (1966-69), a new line was added: agricultural production units were to provide as much of their own capital as possible in the spirit of the Tachai Production Brigade, which increased output through self-reliance and hard struggle. The decision was made to import grain to feed the urban proletariat so that rural areas with proper factor endowments could raise industrial crops.

China's policy of crop diversification was announced in 1971 along with declarations that China was basically self-sufficient in grain production. Crop diversification, it was argued, would provide light industry with raw materials, save foreign exchange by domestically producing goods formerly imported, and earn foreign exchange through the export of agricultural products.

In 1973, no major changes were made in China's general economic development strategy. Because of the poor weather and reduced crop production in

1972, however, changes were made in crop sowing plans and implementation of plans for the agricultural sector. China's leaders responded to this bleak situation by changing the direction of their crop diversification policy and again focused attention on grain and cotton production. After insuring production of these crops, production units in 1973 were encouraged to diversify their production according to their appropriate factor endowments.

The Government and Party also allocated unusual amounts of administrative energy to mobilize cadres and farmers for spring farming activities. Twice as many newspaper editorials and reports of Provincial-level conferences on spring farming were found in the Chinese press from January 1 to March 15 as were found for a comparable period in 1972. By putting more effort into mobilizing spring farming activities, China's leaders attempted not only to prevent a repeat of 1972's decreased harvest but also to recoup those losses through better harvests in 1973. If production declined again in 1973, they wanted to ensure that it was not due to mismanagement on their part.

Structure of Agriculture

No major structural changes occurred in Chinese agriculture in 1973. Private farms—including land of independent farmers and land in private plots—and state farms account for an estimated 10 percent of the cultivated land. The remaining 90 percent is cultivated by communes. A recent Chinese press report put the number of communes at 50,000, a decrease of 24,000 from the last reported number of 74,000 in 1964. Communes, on the average, now have 2,000 to 5,000 households, or about 8,800 to 22,000 people, and have about 1,900 hectares (4,700 acres) of arable land.

Production teams, however, continue to be the most important unit in Chinese agriculture. Communes and production brigades continue to coordinate various activities such as constructing water conservation projects, providing various agricultural extension and health services, and managing rural industries such as chemical fertilizer and food processing. *But* it is the production team which is the basic production unit. It owns and controls most of the agricultural means of production. It makes economic decisions in consultation with team members and with brigade and commune cadres. It calculates profits or losses and distributes income. Production teams are now estimated to number between 2½ and 12½ million. On the average, they have 20 to 40 households or 88 to 176 people, and each team cultivates 8 to 38 hectares (20-95 acres).

In 1973, the Government continued to reiterate the importance of the autonomy of production teams. Communes and brigades that mobilized the resources of production teams without the team's authorization

Table 1.--People's Republic of China: Livestock numbers, 1929 and 1972

Animal	1949	Reported increase	1972
	<u>1,000 head</u>		<u>1,000 head</u>
Draft animals.....	<u>1/59,775</u>	59%	95,042
Sheep and goats.....	42,347	3½-fold	148,215
Hogs.....	57,752	<u>2/4½-fold</u>	259,884

1/ Ch'en Nai-jen, Chinese Economic Statistics: A Handbook for Mainland China, Chicago: Aldine Pub. Co., 1967, p. 340. Draft animals are assumed to coincide with the Chinese definition of large animals, which includes cattle, water buffalo, horses, donkeys, mules, and camels. Admittedly, not all "large animals" are draft animals because there are some milk cows and beef cattle in China. But it is assumed here that since milk cows and beef cattle constitute a small portion of all large animals in China, they are included in that category.

2/ Scholars of the Chinese language and the PRC economy were consulted concerning the use of the words "fold" and "increase" in the press release. The general concensus was that the sentence on increases in sheep, goat, and hog numbers is ambiguous. The Chinese word "pei" is translated as fold or times, and generally one multiplies the base by the given fold coefficient. The addition of the Chinese compound word "tseng-chia," or "increase," however, makes the sentence ambiguous. A 4½-fold increase could mean simply 4.5 times the base year, or it could mean that the increase was 4¼-fold and one should add 100% to include the base, or multiply the base year by 550%, in which case the hog numbers for 1972 would be 317.6 million. In this ambiguous circumstance, prudence was our guide, a prudence bolstered by difficulties merely trying to **accomodate** the 260 million figure. We used 450% times the base year, but it is possible that the Chinese meant 317.6 million hogs.

were criticized. Farmers were encouraged to use their initiative to produce goods and services on their private plots, and on their own time. Private activities were permitted so long as capitalist tendencies did not arise, the collective sector dominated production activities, and state plans were fulfilled.

Incentive Systems

As during the past 10 years, the guiding principles of China's incentive policies continued to be opposition to egalitarianism, equal pay for equal work, and remuneration according to labor.

Material incentives continue to be the most important kind to encourage farmers to work. The "labor day" work payment system is now in its fourteenth year in China. Fixed-rate work measurement methods connect the work done by a farmer with payment in cash and grain.² Fixed agricultural taxes and increased production have meant a declining tax rate. Farmers have also received incentives through the Government's policy of increasing the price it pays for agricultural products at the farm level and lowering the prices it charges farmers for inputs such as chemical fertilizers.

Other incentives have come from satisfying farmers' demands for consumer goods. Recent visitors to China indicate that items such as bicycles, thermos bottles, and sewing machines are now available to farmers.

Nonmaterial incentives continue to be stressed but are judged less important than material incentives. Party efforts to inculcate nationalist and Marxist values in farmers continue. The virtues of frugal consumption, hard work, and sacrifice are stressed. Group and individual competition and selection of model farmers continue. Capitalist tendencies such as the use of the production-labor contract to households which restores some pre-1949 landlord tenant-like relationships continue to be criticized.

Moderate production incentives were provided in 1973. Production team members, cadres, and leaders at higher levels probably recognized the difficulties at the beginning of the year and cooperated to achieve high production levels. No major restructuring of rural institutions occurred, and well-recognized incentive patterns remained in effect. Income differentials were allowed to exist between production teams, brigades, and communes. Team members worked diligently with familiar members in the context of the small-sized team, encouraged by

the expectation that there would be fair compensation for work done.

Planning and Investment in Agriculture

China's method of planning agricultural production and investment remains an enigma. Press statements make mention of state plans, but specific targets and planting processes are not disclosed.

Three factors make it difficult for China's leaders to centrally plan agricultural production. First, there are large numbers of basic production units—millions of production teams are scattered over the vast subcontinent. Second, there are great variations in local conditions. Central planners cannot assume production units are similar because of differences in the soil fertility of their land, water availability, proximity to input and farm product markets, and literacy rates of the workers. Data gathering for central planning is difficult when there are so many and so dissimilar units. Third, the policy to promote food self-sufficiency in rural areas makes planning difficult. Teams as now constituted must bear responsibility for profits or losses. Their foremost concern is the physical survival of team members, which means providing adequate grain supplies throughout the year. Plans coming down from higher levels must coincide with this basic requirement to be effectively implemented by teams.

Little is known about the magnitude of China's yearly investment in the agricultural sector or what specific criteria are employed to allocate investment resources. We do know, however, that in the past, investments in agriculture have come from: (a) the state budget for large purchases, such as complete foreign chemical fertilizer plants, (b) commune budgets for the purchase of tools to manufacture and repair agricultural implements, (c) production brigades for provision of extension services, and (d) production teams for the purchase of water pumps and perhaps labor to clear new land or improve old land through terracing or leveling fields.

Since the mid-1960's, China seems to have had a dual agricultural investment policy. On the one hand, resources from the Government have been allocated where quick, high returns were most promising. These investments appear to be concentrated in South China, which has a favorable climate, precipitation, temperature, and irrigation and drainage systems. Also, these investments tend to be linked with more modern technology—for example, they have been used to construct plants to produce complex chemical fertilizer.

On the other hand, investments generated within the communes have tended to be used in areas with less favorable factor endowments. Local commune cadres probably choose investment projects which

²For a discussion of the labor day payment system, see *Agriculture in the United States and the People's Republic of China, 1967-71*, U.S. Dept. of Agr., Econ. Res. Serv., Feb. 1974, p. 5.

embody more traditional technology because scarce foreign exchange and construction materials have already been allocated by central planners to more productive areas.

Agricultural Inputs

Fertilizer

In 1973, according to a yearend press report, output of China's fertilizer industry surpassed the 1972 production level by some 25 percent. The nutrient content of many fertilizers produced in China is not known precisely, but generally it is thought to be lower than that produced in other countries. Production of nitrogen-based fertilizer in 1973 is estimated at 2.4 million tons (nutrient basis)—about 400,000 tons above 1972 production.

For several years, the PRC has been the world's largest importer of nitrogen fertilizers. Of the various commodities that China imports as well as produces, chemical fertilizers have shown one of the highest ratios of reliance on foreign trade. In 1972, China imported as estimated 1.95 million tons (nutrient basis) of nitrogen fertilizer. Because of decreased availability and higher prices of petroleum feedstocks, we expect that China imported a smaller amount, approximately 1.8 million tons, in 1973.

Also, last year, the PRC contracted the sale of 10 ammonia-urea complexes, which will employ modern technology and petroleum feedstocks. These complexes should be able to turn out almost 5 million tons of urea annually by 1978. Their importation may signify a change on the part of the PRC to a policy of import substitution.

Production of phosphorous fertilizers has also been encouraged in the PRC. The soils of South China benefit especially from the application of phosphate fertilizer. Between July 1973 and June 1974, it is expected that China will produce some 725,000 tons (nutrient basis) and will import approximately 428,000 tons. Of the 1.3 million tons (product weight) of phosphate rock which China imports annually, some 50,000 tons will come from the United States this year.

Water Conservation and Irrigation

Farmers in every Province in the PRC use the slack winter season to work on water conservancy and irrigation and drainage projects. From each Province have come reports of expanded irrigated area, and new reservoirs, canals, and wells. Kansu Province, for example, reported in 1973 that more than a quarter-million hectares had been brought under irrigation since 1949. Despite similar claims from other Provinces, it is not clear that China is irrigating all its land effectively. The bumper 1973 harvest may indicate that China has been expanding effectively

irrigated area. But most of the increase in production probably can be attributed to the favorable weather that China has experienced since the 1973 spring season.

Mechanization

China's machine-building industry has reportedly completed its 1973 production plan. Output of major farm machines increased over the 1972 level. Industry reportedly produced equipment for 300,000 pump wells in North China. Several important new products were trial-produced, including large axial-flow pumps and tractor-mounted harvesters. But the emphasis in China still remains on semimechanization of agriculture, which calls for production and improvement of traditional hand tools and animal-drawn farm machinery.

Rural Transportation

For several years, China has mobilized its rural labor force to construct a road network. A news report from Peking recently declared that 77 percent of all communes can now be reached by motor vehicles.

This improvement in the rural transportation system should aid the Government in moving agricultural products from farm to urban centers and ports for exports. Agriculture will share in the benefits also, as modern inputs such as chemical fertilizer, plastic sheeting, insecticides, diesel fuel, and spare machine parts can now be moved with greater speed and reliability from supply points to farms to meet sowing and harvesting deadlines. Furthermore, the improved road system should aid in spreading agricultural technology, as farmers and agricultural extension cadres will be able to attend more conferences and exchange technical information more readily.

Crop Research and Seed Improvements

Achievements of China's long-range programs for seed selection and breeding were reported in numerous national and provincial conferences in 1973. New strains of wheat, rice, sorghum, barley, potatoes, corn, soybeans, and other crops were reportedly developed for higher yields; better resistance to severe weather, pests, and diseases; and better adaption to different climates, elevation, and soil conditions. For example, a short-stalk, early-ripening rice seed was developed and is now used in Kwangtung Province and 10 other Provinces and autonomous regions in the South. Also, new strains of wheat, barley, and beans were developed for adaption to the high elevation in Tsinghai, a Province in Western China. New seed varieties were also introduced from abroad, namely wheat seed from Chile and a short-stalk barley from Denmark. A Chinese mission visited the International Rice

Research Institute in Los Banos, Lauguna, the Philippines, and agreed to participate in the exchange of research scientists, crop materials, and research data.

Agricultural Trade

Grain

China's wheat imports in 1973/74 are expected to reach an alltime high of 6.5 million tons (table 2).³ In addition, China is expected to import a record 2.7 million tons of corn (table 3)—nearly all from the United States—bringing total grain imports to an unprecedented level of 9.2 million tons. The United States is expected to supply about 71 percent of China's total grain imports in 1973/74; Canada and Australia are expected to supply 16 and 11 percent, respectively. Thus, China will have diversified its supply sources compared with the previous 2 years, when Canada was the single or most significant supplier.

Wheat

At the end of calendar 1973, China signed long-term trade agreements with Canada, Australia, and Argentina for 1974 through 1976 (table 4). The Canadian agreement calls for the sale of 4.9 million to 6.1 million tons of wheat to China during the period. Separate "subcontracts" will be negotiated for the sale of specific amounts. The first contract was for 1 million tons for shipment between January and June 1974. A contract for a similar amount for shipment between July and December 1974 is to be concluded at a later date. As in previous contracts, the terms called for a 25-percent cash payment when each vessel is loaded, with the balance to be paid in 18 months with interest. The rate of interest was not announced.

The Australian agreement calls for shipment of 4.7 million tons of wheat over the 3-year period. In July 1973, Australia and China had signed a 3-year Umbrella Trade Agreement, granting each other most-favored-nation treatment.

Both agreements came at the expiration of preceding agreements. In November 1972, Canada had agreed to ship 1.7 million tons of wheat to China between April and September 1973. Actual deliveries as of September 30, 1973 totaled 1.6 million tons. In late September 1972, the Australian Wheat Board announced the sale of 1 million tons of wheat to China for delivery during calendar 1973. Deliveries through the end of 1973 reached only 800,000 tons, however.

The Argentine agreement—the first long-term agreement between Argentina and the PRC since

1966—calls for 3 million tons of wheat and corn to be exported to China during 1974-76. In 1975 and 1976, 50 percent of the shipments are to be wheat and 50 percent, corn. Only a small amount of wheat, if any, will be shipped in 1974. The first of the separate subcontracts to specify exact quantities and prices calls for 200,000 tons of corn to be shipped in the first half of 1974.

Rice

In 1973, China's total rice exports recovered sharply to an estimated 1.4 million tons, milled basis—the highest since 1967 (table 5). Sri Lanka, Hong Kong, Indonesia, the Philippines, Malaysia, and Cuba accounted for the bulk of shipments. In mid-1973, because of difficulties with other suppliers, Hong Kong lifted its limitation on imports of PRC rice. In response to this change, Hong Kong's imports from the PRC rose to nearly double the level of past years. Rice accounted for much of the 50,000 tons of grain donated by China to the drought-afflicted countries in Africa.

Corn

In the past two decades, China has fluctuated between a net export and a net import position in corn (table 3). For example, it imported as much as 491,000 tons in 1962, and exported as much as 245,000 tons in 1965. Japan has been China's main destination for corn exports. Through 1971/72, Argentina was the main source of the imports. The United States entered this market in the fall of 1972. U.S. corn exports to China in 1972/73 reached 828,000 tons valued at \$59.7 million. China is continuing to import corn at an unprecedented level in 1973/74. Net corn imports will total about 2.7 million tons—nearly three times the 1972/73 level—with the United States supplying an estimated 2.5 million tons valued at \$268 million.

Corn is normally termed a feed grain, and it is often assumed that this great increase in corn imports was to bolster China's huge hog population. While it is true that imports of any grain relieve pressure on domestic fodder supplies, ERS analysts believe that China's corn imports are destined for human rather than livestock consumption. As a massive importer of wheat, China apparently considered other grains when faced with soaring prices and limited supplies on the world wheat market.

Cotton

With new sources of supply, China's cotton imports rose to a record high in 1972/73 (August-July marketing year), reaching an estimated 418,036 tons (table 6). Imports during the 1973/74 marketing year are expected to be even larger—452,800 tons. The United States, exporting cotton to China for the first time since 1949, supplied nearly a third of the 1972/73

³Except where noted otherwise, split years in this section and in the outlook section refer to a U.S. fiscal year (July-June).

Table 3.--People's Republic of China: Trade in corn, averages 1951/60-1963/64 and 1964/65-1968/69, and annual 1969/70-1974/75 by trading partners. 1/ 2/

Year	Japan	Argentina	Cambodia	United States	Other	Total
<u>1,000 tons</u>						
1959/60-1963/64 <u>3/</u>	48	-130	-14	--	-13	-109
1964/65-1968/69 <u>3/</u>	102	-35	-19	--	<u>4/</u> -4	44
1969/70.....	--	<u>3/</u> -13	--	--	NA	-13
1970/71.....	24	<u>3/</u> -107	--	--	NA	-83
1971/72.....	70	<u>3/</u> -14	--	--	NA	56
1972/73.....	30	-111	--	-828	NA	-909
1973/74 <u>5/</u>	<u>6/</u> NA	-241	--	-2,500	NA	-2,741
1974/75 <u>5/</u>	NA	-650	--	-300	NA	-950

NA = not available.

-- = none.

1/ As reported by trading partners.

2/ Imports designated with minus sign (-).

3/ Data on a calendar year basis was utilized, setting 1959/60 = 1960, etc.

4/ Average 1964/65-1967/68.

5/ Preliminary, based on anticipated shipments, estimates, and long-term agreements.

6/ None in July-Dec. 1973.

Sources: R. Kirby, Agricultural Trade of the People's Republic of China, 1935-69, FAER No. 83, USDA/ERS, August 1972. Country trade statistics. Review of River Plate, Buenos Aires, various issues, 1973. Bolsa de Cereales, Numero Estadistico, 1973, p. 19.

Table 4.--People's Republic of China: Grain contracts, 1971-74*

Country	Date signed	Amount (1,000 tons)	Shipment period	Grade	Remarks
Canada...	Sept. 1971	517	Oct.- Dec. 1971	Manitoba Northern No. 2, 3, & 4	<u>2/ 5/</u>
Canada...	Dec. 1971	3,184	Jan.- Dec. 1972	No. 1 Canadian Western Red Spring. Manitoba Northern No. 3, 4. Some Durum.	Valued at \$195 million. Largest single grain purchase by China in one year.
Canada...	June 1972	1,524	July 1972- June 1973	No. 1 Canadian Western Red Spring, 12.5-13% protein.	Valued at \$100 million. Half of shipment due by Dec. 1972. <u>2/ 5/</u>
U.S.....	Sept. 1972	406	For delivery by 6/30/73	304,800 T. of White wheat; 101,600 T. of Soft Red Winter.	Transaction was handled by an international French firm. Valued at \$29.7 million.
Australia.	Sept. 1972	1,000	Jan.- Dec. 1973	F.A.Q.	Valued at \$77 million. <u>1/ 4/</u>
U.S.....	Oct. 1972	300 Corn		Corn.	Corn. Valued at \$17 million. Transaction handled by international French firm. First major purchase of any grain other than wheat since 1968.
U.S.....	Oct. 1972	26		Soft Red Winter.	
U.S.....	Nov. 1972	73		Soft Red Winter.	
Canada...	Nov. 1972	1,700	Apr.- Sept. 1973	No. 1 Canadian Western Red Spring, 12% protein; No. 2, 3, Canadian Western Red Spring.	Valued at \$150 million. To be shipped at rate of 272,000 T./month. <u>2/ 5/</u>
U.S.....	June 1973	2,500 wheat 1,000 corn	July 1973- June 1974		These quantities represent a number of individual contracts reported made by June 8.
U.S.....	July 1973	500	Aug.- Dec. 1973		Valued at \$75 million.
U.S.....	Aug. 1973	300 wheat 300 corn	Delivery probably by June 30, 1974		
Australia.	Oct. 1973	4,710	Jan. 1974 Dec. 1976		600,000 T. to be shipped Jan.-June 1974, valued at \$120 million. Another 500,000 tons to be shipped in balance of CY 1974; 1.5-1.8 mil. tons each in CY 1975 & CY 1976. Actual quantities to be determined in separate subcontracts.

Table 4.--People's Republic of China: Grain contracts, 1971-74*--Continued

Country	Date signed	Amount (1,000 tons)	Shipment period	Grade	Remarks
U.S.....	Oct. 1973:	400	Oct. 1974 : Sept. 1975 :	Corn	:Based on USDA/SRS <u>Exports</u> , 11-9-73. :
Canada....	Oct. 1973:	4,900- 6,100	Jan. 1974- : Dec. 1976 :		:Subcontracts will be negotiated for specific amounts :within this framework. The first subcontract is for :1 million metric tons, for shipment Jan.-June 1974. :A similar subcontract is anticipated for July-Dec. :1974. <u>5/</u> :
U.S.....	Oct. 1973:	500	July 1974- : June 1975 :	Hard Red Winter.	:Apparent sales, based on USDA/SRS <u>Exports</u> , 11-9-73 :and 11-16-73. It appears that 300-350,000 tons of :this is No. 2 hard, for shipment in July 1974. :
U.S.....	Nov. 1973:	500	Delivery : July-Sept. : 1974 :	50% Hard Red Winter; 50% Hard Red Spring.	:Based on USDA/SRS <u>Exports</u> , 12-7-73. : :
14 Argentina.	Dec. 1973:	3,000	Jan. 1974- : Dec. 1976 :	wheat and corn	:A contract for 200,000 tons of corn, valued at \$24.8 :million, for delivery Jan.-June 1974, was concluded :at the same time. This is a part of the larger :agreement. This agreement is the first long-term :agreement since 1966, although regular commercial ex- :ports, not under any overall agreement, have moved :since then. :

1/ Option to buy +/-10% of contract.

2/ Option to buy +/-5% of contract.

3/ 10% cash; 40% in 6 months; 50% in 12 months with interest.

4/ 10% cash; 20% in 6 months; 20% in 9 months; 50% in 12 months with interest.

5/ 25% cash; remainder in 18 months with interest.

* All sales are for wheat, except when noted otherwise. See The Agricultural Situation in Communist Areas: Review of 1970 and Outlook for 1971, ERS-Foreign 314, Economic Research Service, U.S. Department of Agriculture, Washington, D.C., April 1971, pp. 35-36 for PRC wheat contracts with Canada and Australia, 1960-70.

Table 5.--People's Republic of China: Exports of rice by major countries of destination, 1967-73 1/.

Country	1967	1968	1969	1970	1971	1972	1973 <u>2/</u>
	<u>1,000 tons, milled</u>						
Cuba.....	130	130	130	130	230	230	230
Sri Lanka (Ceylon)....	183	200	221	310	129	23	220
Pakistan.....	100	29	--	100	120	<u>3/16</u>	--
Hong Kong.....	86	105	87	93	<u>4/99</u>	<u>4/108</u>	<u>4/180</u>
Malaysia and Singa- pore.....	203	158	139	98	119	98	100
Indonesia.....	NA	NA	NA	NA	--	113	372
Philippines.....	NA	NA	NA	NA	8	75	160
Other.....	<u>5/448</u>	<u>6/264</u>	149	154	141	148	125
Total <u>7/</u>	1,150	886	726	885	846	811	1,387

NA = not available.

-- = none.

1/ As reported by importing countries.

2/ Preliminary.

3/ Excludes Bangladesh.

4/ Excludes re-exports.

5/ Includes 203,000 tons to Japan.

6/ Includes 105,000 tons to Japan.

7/ Excludes exports to North Vietnam.

Source: FAO, Rice Trade Intelligence, 4-10-73, 12-10-73. ERS and FAS estimates.

imports and is expected to provide slightly more than half the 1973/74 imports. (Between 1923 and 1949, U.S. cotton exports to China averaged about 44,000 tons annually.) As indicated in table 6, China's purchases of U.S. cotton in the 1972/73 marketing year were larger than those from any other single country in recent history. The same is expected to be true for the 1973/74 imports. Rising incomes, population growth, pressures to maintain cloth rations, and insufficient man-made fiber production in China have all combined to sustain demand for imports.

Oilseeds and Products

China's exports of vegetable oils and seeds on an oil basis generally declined after 1968, until finally, in 1973, China became a net importer of these commodities. The reasons behind this change are twofold. First, domestic oilseed production declined in 1971 and 1972. Second, the Government ostensibly decided to maintain per capita consumption levels rather than ask for belt-tightening. Given the large and constantly expanding population of China, even a slight change in the share of consumption not met by domestic sources could necessitate substantial imports. Per capita consumption of soybean, cottonseed, peanut, and rapeseed oils was estimated at 2.7 kilograms in 1973.⁴

Preliminary data for 1973 compared with 1972 revealed export declines in cottonseed oil, rapeseed oil, peanuts, and soybeans. (table 7). For example, cottonseed oil exports declined from 8,000 tons in 1972 to only 500 tons during the first 9 months of 1973—the lowest in 10 years. Rapeseed oil exports totaled only 3,000 tons during the first 9 months of 1973, compared with 19,000 tons for all of 1972 and an average of 17,000 tons in 1969-72. Peanut exports dropped from 36,000 tons in 1972 to 23,000 tons in the first 9 months of 1973—the 1969-72 average was 34,000 tons. Peanut oil exports, however, increased. China, traditionally a heavy net exporter of soybeans shifted from net exports of 370,000 tons in 1972 to only 37,000 tons in 1973, primarily because of large imports—198,000 tons—of U.S. soybeans.

Similar part-year data for castor bean exports indicate a decline from 22,000 tons in 1972 to 9,000 tons in 1973. The annual average for 1969-72 was 24,000 tons.

Traditionally, China has been an importer of small quantities of vegetable oils such as palm and coconut oil. For the first time in recent history, however, China imported soybean oil in 1973, with 58,000 tons coming from the United States and 9,200 tons from Brazil and France. Reports of imports of fish, palm, coconut, and linseed oils, and sesameseeds round out

the picture of China's changed net position as a trader in oils and seeds in 1973.

Livestock and Products

Complete information on China's exports of fresh, chilled, and frozen meat in 1973 is not yet available. But trade data received thus far suggest that 1973 meat exports were about the same as in 1972 (table 8).

Data for the first half of 1973 show that pork accounted for about one-third of China's meat exports to Hong Kong, chicken accounted for a fifth, and assorted offals, for most of the balance. China's 1973 exports to Hong Kong also included an estimated 2.6 million head of live hogs valued at \$125 million to \$140 million.

Although Japan imported sizable quantities of meats from China in pre-World War II years, it currently bans the import of fresh red meat from China, despite a great deal of pressure from traders. Restrictions were eased in October 1972 to permit imports of cooked meat, but only negligible quantities of any prepared or preserved meat were imported from China in 1973.

Part-year data from Italy, France, and Spain show that their 1973 fresh meat imports from China consisted primarily of fresh pork. The United States imported 174 tons of fresh, chilled or frozen meat from China in 1973—apparently all rabbit meat—valued at \$179,000.

In addition to fresh meat, China exports significant quantities of various kinds of prepared, preserved, dried, and canned meats. In 1973, a fraction of such exports—74 tons valued at \$62,000—went to the United States.

Trade with the United States

After a lapse of more than 20 years, the United States began importing small quantities of agricultural goods from China in 1971. But U.S. agricultural exports to China did not resume until the fall of 1972. Thus, 1973 was the first full calendar year of two-way agricultural trade between the countries.

Agricultural commodities constituted 83 percent of total U.S. exports to China in 1973, and they were valued at \$575.0 million (table 9).⁵ These exports represented 3 percent of all U.S. agricultural exports and 7 percent of total U.S. wheat exports, 4 percent of the corn exports, 10 percent of the cotton exports, and 13 percent of total U.S. soybean oil exports.

In 1973, \$51 million worth of U.S. wheat, corn, and soybeans moved ultimately to China in the form of transshipments via Canada. Such transshipments are considered a normal commercial occurrence, but are *never* included in data on direct U.S. exports to

⁴Oil World Weekly, Dec. 1, 1972, p. 452.

⁵For the convenience of the reader, U.S.—PRC trade data is presented on a calendar year basis in tables 9 and 10, and on a fiscal basis in tables 11 and 12.

Table 7.--People's Republic of China: Trade in soybeans by major trading partners,
1966-73 1/ 2/

Importing country	1966	1967	1968	1969	1970	1971	1972	1973 <u>3/</u>	1974 <u>3/</u>
	<u>1,000 tons</u>								
Japan.....	393.0	392.0	417.0	377.0	290.8	283.4	254.0	226.0	250.0
Hong Kong.....	12.0	14.0	16.0	16.0	15.6	17.4	16.3	9.0	NA
Malaysia.....	13.0	13.0	14.0	14.0	14.9	14.1	NA	NA	NA
Singapore.....	10.0	13.0	11.0	14.0	12.2	13.7	12.8	NA	NA
Western Europe.....	104.0	134.0	112.0	66.0	36.6	93.7	<u>4/</u> 30.0	NA	NA
United States.....	--	--	--	--	--	--	--	-198.0	-665.4
Other.....	18.0	--	1.0	1.0	53.9	37.7	56.9	NA	NA
Total Exports.....	550.0	565.0	571.0	488.0	424.0	460.0	370.0	NA	NA
Total Imports <u>2/</u>	--	--	--	--	--	--	--	-198.0	NA
Net Trade <u>2/</u>	550.0	565.0	571.0	488.0	424.0	460.0	370.0	37.0	NA

--= none

NA= not available

1/ As reported by importing countries.

2/ Imports designated with minus (-) signs.

3/ Preliminary.

4/ Finland only.

Source: Kirby, R. Agricultural Trade of the People's Republic of China, 1935-69, FAER No. 83, ERS, U.S.D.A., 1972; Importing country trade statistics, 1970-73; U.S. Dept. of Commerce, Country-by-Commodity series, 1971 and 1972; FATUS, 4/73.

Table 8--People's Republic of China: Exports of fresh meat by selected importing countries, 1966-72 1/

Importing country	1966	1967	1968	1969	1970	1971	1972	1973 <u>2/</u>
	<u>1,000 tons</u>							
Hong Kong.....	28.0	26.3	37.2	35.6	39.4	38.3	38.6	<u>3/</u> 21.4
Poland.....	20.3	24.1	35.1	16.5	9.0	11.8	22.6	NA
Czechoslovakia.....	19.3	14.0	18.0	25.0	16.0	8.0	19.0	NA
France.....	0.1	0.8	1.9	17.6	19.6	19.5	21.7	<u>4/</u> 15.3
Italy.....	8.0	8.5	4.2	1.5	--	9.4	14.2	<u>3/</u> 1.8
Japan.....	2.5	3.3	7.2	6.3	4.1	7.2	10.7	<u>5/</u> 10.9
United Kingdom.....	3.5	4.9	6.5	6.8	7.5	7.3	7.4	8.4
Spain.....	--	--	--	0.1	0.1	0.3	9.5	<u>3/</u> 8.4
Other.....	<u>6/</u> 87.9	27.9	7.6	7.4	9.3	<u>7/</u> 3.7	<u>7/</u> 1.1	NA
Total.....	169.6	109.8	117.7	116.8	105.0	105.5	144.8	NA

--= none.

NA= not available.

1/ As reported by importing countries.

2/ Preliminary.

3/ Jan.-Jun.

4/ Jan.-Oct.

5/ Jan.-Nov.

6/ Of which 69,100 to the USSR.

7/ OECD countries only.

Source: FAO, Trade Yearbook 1971, vol. 25. OECD, Statistics of Foreign Trade 1972. Commonwealth Secretariat, Meat & Dairy Produce Bulletin, 12/73, 1/74. Country trade statistics.

Table 9.--United States: Agricultural exports to the People's Republic of China, by quantity and value, calendar years 1972 and 1973^{1/}

Item	1972		1973	
	Quantity	Value	Quantity	Value
	1,000	1,000	1,000	1,000
	<u>M.tons</u>	<u>dollars</u>	<u>M.tons</u>	<u>dollars</u>
Wheat	565	35,293	2,649	277,701
Corn	376	23,792	1,393	132,384
Tobacco	---	---	1	1,359
Cattle hides, whole	---	---	<u>2/10</u>	244
Sheep skins, w/wool	---	---	<u>2/25</u>	147
Soybeans	---	---	198	43,365
Cotton	---	---	<u>3/610</u>	100,527
Vegetable seeds, excl, cotton & onion	---	---	neg.	43
Tallow, inedible	---	---	3	1,344
Soybean oil, crude	10	2,200	58	17,863
Total agricultural commodities	---	61,284	---	574,976
Total nonagricultural commodities ..	---	2,253	---	114,128
Total exports	---	63,537	---	689,104

^{1/} Excludes transshipments via Canada.

^{2/} Numbers in thousands.

^{3/} Thousand bales.

Source: U.S. Census Bureau, U.S. Agricultural Exports, country-by-commodity, 12/31/73.

Note: Numbers may not add to totals because of rounding.

China. These transshipments to the PRC in 1973 consisted of 166,205 tons of wheat valued at \$29.8 million; 106,503 tons of corn valued at \$8.8 million; and 49,682 tons of soybeans valued at \$12.0 million.

Agricultural commodities comprised a third of all merchandise imported by the United States from the PRC in 1973. They consisted largely of speciality items and totaled \$21.4 million. Those valued at over \$100,000 are listed in table 10. China supplied less than 1 percent of total U.S. agricultural imports, by value. However, China was the major supplier of raw silk, accounting for 76 percent of total U.S. import volume. Also in terms of quantity, China supplied more than a third of the following U.S. agricultural imports: rabbit meat, and other fresh, chilled, or frozen exotic meats; walnuts; bristles; camel hair; and anise and cassia oils.

In calendar 1973, the United States supplied about half of China's wheat and cotton imports, and virtually all of its corn and soybean imports. The uncertainties of Chinese grain purchases may have great effects on U.S. agriculture. Canada and Australia's long-term agreements with the PRC enable them to plan production well in advance. But U.S.-PRC contracts extend only through 1974/75 marketing years at most. It appears that China may regard the United States as one of many suppliers in normal times, but an important or major source in difficult times.

Why China Imports

Given the paucity of information on the PRC economy, it is very difficult to explain PRC agricultural import levels. Some factors which are thought to affect Chinese decisions on imports are outlined below.

In the past, China has imported sizable quantities of grain not only when grain production declined, but also when it remained the same, or even increased. Quantities imported apparently are not simply a function of variations in the harvests. The continuing rapid increase of population is probably one of the factors involved in China's imports. The net increase of 10-15 million people to China's population every year places considerable pressure on supplies of domestically produced goods.

China purchases grain, cotton, and oilseeds from domestic and foreign producers and distributes these goods to its citizens via a comprehensive rationing system. Within certain limits, the Government can by fiat raise or lower quantities of grain, cloth (mostly cotton), and edible oil distributed to its people. The upturn in the level of imports suggests the possibility of a policy decision on the part of the Chinese leadership to give more priority to consumer demands.

Another factor which must be considered in any attempted explanation of China's imports is that of

stocks and procurements. The Chinese may have decided to increase the level of imports to maintain stocks, even when world prices are high, as a precaution against a national emergency or perceived external threat. Regarding procurements, the leadership may have opted to supply the northern urban coastal areas with imported grain rather than tax internal transportation facilities. Shipments almost without exception have been delivered to the northern industrial cities. Increasing procurements from internal rural surplus areas could have certain disincentive effects, so that the problem would be better handled by imports than through extraction programs.

Outlook for 1974

Renewed Cultural Revolution?

Because of the shortfall in agricultural production in 1972, the energy of the Chinese administrative apparatus seems to have been focused on agriculture in 1973. Efforts were made to ensure that farmers were well organized, and that necessary agricultural inputs were produced and delivered to communes at the proper time.

After the good harvests in 1973, the concern this year is of a political nature and involves a mass movement to criticize Lin Piao and Confucius. Lin Piao was formerly designated to succeed Mao Tse-tung. However, Lin died in 1971 and has since been repudiated for attempting to restore reactionary policies in China. Provincial conferences this year are held to criticize Lin and Confucius, whereas last year they were held to insure maximum effort in agricultural production.

What effect will the mass movement have on the agricultural sector? It is unclear. Since 1962, Chinese leaders have been reluctant to disturb rural institutions. The 1964-65 "Socialist Education Movement" and the more recent "Cultural Revolution" were largely urban phenomena and did not greatly affect agricultural production.

Chinese leaders have been concerned for many years about the remnants of capitalism which exist in rural China, about the private plots of land, black markets, and farm worker tendencies to seek profits. The capitalist deviations have been tolerated for a decade, but Maoist doctrine calls for their ultimate removal and the creation of a new farm worker motivated by nonmaterial incentives. To date, the mass movement does not appear to be designed to overhaul rural institutions or to purge China's peasants of capitalist tendencies. But the existence of the movement adds another element of uncertainty to the China scene, making it more difficult than ever to grasp the current situation and to foresee trends in trade and production for 1974.

Table 10.--United States: Major agricultural imports from the People's Republic of China, by quantity and value, calendar years 1972 and 1973

Item	1972		1973	
	Quantity	Value	Quantity	Value
	1,000 pounds	1,000 dollars	1,000 pounds	1,000 dollars
Rabbit meat, fresh, chilled or frozen ^{1/}	---	---	384	179
Water chestnuts	---	---	448	114
Lotus roots and bamboo shoots, dried	92	103	100	130
Bamboo shoots, canned	266	80	503	191
Mushrooms	137	85	210	120
Chestnuts, crude, dried or baked ..	72	32	442	193
Walnuts, shelled, not pickled ...	533	336	526	405
Honey	270	61	621	230
Pepper, red cayenne	289	117	1,571	315
Tung oil	---	---	5,721	705
Dried soup mixes, w/noodles	277	134	322	223
Feathers, crude, excl. ostrich ..	416	549	912	1,375
Down, crude, excl. ostrich	65	186	142	353
Bristles, crude or processed	1,176	6,741	1,107	5,125
Horse mane, tail, hair, n.s.p. ...	336	635	148	249
Camel hair, sorted, greasy	387	219	458	323
Hair, cashmere, goat, sorted, greasy	201	248	320	473
Gelatin, inedible	6,816	873	8,623	1,255
Tea	837	299	1,279	613
Cassia spice	2,653	1,713	1,269	1,051
Silk, raw	299	2,421	428	4,329
Natural additives, drug, veg. ...	33	158	61	397
Anise oil	20	33	60	111
Cassia oil	79	190	47	145
Citronella oil	69	70	473	764
Other essential oils	8	457	11	488
Other agricultural commodities ..	---	676	---	1,588
Total agricultural commodities ..	---	16,416	---	21,444
Total nonagricultural commodities	---	16,006	---	42,508
Total imports	---	32,422	---	63,952

^{1/} Included under TSUSA No. 1067500, 'meat, n.e.s., fresh, chilled, or frozen. It was determined that meat entering the U.S. under this tariff category was primarily rabbit meat.

Source: U.S. Census Bureau, U.S. Agricultural Imports, country-by-commodity, 12/31/73.

Table 11.--United States: Agricultural exports to the People's Republic of China, by quantity and value, fiscal years 1972/73 and 1973/74.

Item	1972/73		1973/74 ^{1/}	
	Quantity	Value	Quantity	Value
	<u>1,000</u> metric tons	<u>1,000</u> dollars	<u>1,000</u> metric tons	<u>1,000</u> dollars
Wheat.....	591	38,232	4,000	524,000
Corn.....	828	59,700	2,500	268,000
Tobacco.....	--	--	2	4,077
Cattle hides, whole.....	<u>2/10</u>	244	<u>2/3/25</u>	<u>3/147</u>
Soybeans.....	33	9,384	900	196,000
Cotton.....	<u>4/447</u>	71,700	<u>4/2,080</u>	227,000
Tallow, inedible.....	--	--	<u>3/14</u>	<u>3/5,959</u>
Soybean oil, crude.....	61	17,592	3/7	<u>3/2,471</u>
Total.....	--	196,852	--	1,227,654

-- means none.

^{1/} Preliminary.

^{2/} Numbers in thousands.

^{3/} July-Feb. only.

^{4/} Thousand running bales.

Source: U.S. Census Bureau, U.S. Agricultural Exports, country by commodity, 6/30/73, 2/28/74.

Table 12--United States: Major agricultural imports from the People's Republic of China, by value, fiscal years 1972, 1973, and 1974

Item	1971/72	1972/73	1973/74 <u>1/</u>
		<u>1,000 dollars</u>	
Bristles, crude, processed.....	5,924	4,776	3,978
Silk, raw.....	642	5,260	1,303
Cassia and other spices.....	2,742	1,290	320
Feathers and downs, excl. ostrich.....	330	1,179	1,552
Gelatin, inedible.....	429	1,026	697
Wool, camel hair and cashmere hair.....	564	767	496
Nuts.....	219	737	429
Horsehair.....	122	669	192
Essential oils.....	336	571	1,458
Tea.....	78	545	365
Tung oil.....	0	504	202
Other items.....	853	2,256	2,542
Total.....	12,239	19,580	13,534

1/ July-February only.

Source: U.S. Census Bureau, U.S. agricultural imports, country-by-commodity, 6/30/72, 6/30/73, 2/28/74.

Flood and Drought-Control Measures

China's ongoing water conservancy program has increased its capacity to withstand flood and drought. If adverse weather does occur this year, its effects won't be as severe as in the past. To date, efforts have included the construction of both small and large water conservation projects, afforestation, drilling of hundreds of thousands of new tube wells, electrification, and installation of electric pumps.

Energy Problems

The energy crisis probably won't have a severe effect on China's 1974 fertilizer supplies, but they may nevertheless be somewhat below 1973 levels. Fertilizers of various kinds were applied to winter crops planted in the fall of 1973. Fertilizers for spring-planted crops—cotton, early rice and corn, and sugarbeets—probably have been produced and distributed to communes.

China's domestic fertilizer plants do not rely on imported petroleum for feedstock, but use locally produced coal and petroleum. In the past, China imported large amounts of nitrogen fertilizer from Japan, West European countries, and Middle East oil-producing countries. However, current limited quantities and high prices of these imported fertilizers may reduce the amount available to China for summer-planted crops—late rice and corn—and for fall-planted wheat. In recent months, farm managers in a number of Provinces have been instructed to collect additional natural organic fertilizers instead of relying solely on chemical fertilizer. These policies suggest China's leaders may now expect some reduction in the supply of chemical fertilizer this year. If the world energy problem continues through the rest of this year and if substantial fertilizer shortages occur in China, the subsequent reduction in crop yields could result in increased food and cotton imports in the next few years.

Crop Plans for 1974

Press reports in late 1973 and early 1974 suggest that China is continuing its 1973 efforts to increase grain and cotton production. After ensuring output of these crops and oilseeds, production units are encouraged to diversify their output according to local conditions.

Winter Weather

In 1972, Chinese leaders, anticipating drought-reduced harvests in the fall of that year, seem to have applied pressure on production units to increase area sown to winter wheat. A survey of current press reports suggests that the pressure to increase wheat area was repeated in autumn 1973. Provincial daily newspaper editorials and Party directives stress the

importance of growing wheat and note that where possible, area sown to wheat should be increased. A number of major producing Provinces did report increased area sown to wheat. National and provincial conferences have been held, presumably to instruct cadres on the importance of wheat growing as well as new production techniques.

Three different weather phenomena could affect yields of winter and spring crops in some Provinces. Heavy rains in North China in September and October may have disrupted the sowing of winter wheat and possibly could have reduced stands. Dry weather in November and December was reported to be affecting winter crops in Anhwei, Hupeh, Kiangsu, and Shensi Provinces. However, the outlook for winter crops in the dry areas was improved by rains in January and February and by irrigation. Finally, cold weather was reported to have damaged early rice seedlings in Kwangsi, Kwangtung, and Yunnan Provinces. While the weather situation thus far this year has been less favorable for crop growth than for the comparable period last year, normal temperature and precipitation patterns in April and May could turn the situation around.

Trade

China's rice exports in 1974 will include 200,000 tons shipped to Sri Lanka under an agreement to supply that country with its total rice import requirements. Part of this will be rice of Burmese origin, paid for by the Chinese. Sri Lanka will supply China, in exchange, with 40,000 to 50,000 tons of raw rubber. China's rice exports to Japan, which have been negligible since 1968, are slated to reach about 30,000 tons in 1974. Exports to Indonesia are expected to continue, although at a lower level than in 1973.

So far, China has signed long-term agreements and contracts to import an estimated 5.7 million tons of grain during 1974/75 (July-June).⁶ This will consist of 4.7 million tons of wheat and nearly 1.0 million tons of corn. Such a quantity would be well below that imported during 1973/74. But given the weather situation so far this year, as well as the record 1973 grain harvests, grain imports of 5.7 million tons could meet the minimum requirements.

Anticipated U.S. sales, registered with the Statistical Reporting Service and included in the 5.7-million-ton figure for July 1974-June 1975, amounted to 1.15 million tons of wheat and 300,000 tons of corn as of March 31, 1974. (Sales registered with SRS

⁶For another discussion of China's grain import needs, see *Foreign Agriculture* (U.S. Dept. of Agr., Foreign Agricultural Service, Apr. 22, 1974). The article shows an estimate of China's total grain imports in 1974/75 of 9 million tons. The figure presented here—5.7 million tons—represents only quantities committed thus far under long-term agreements and contracts.

currently do not extend beyond the 1974/75 marketing years.)

China's cotton imports in 1974/75 are expected to range between 261,000 and 327,000 tons, with the United States supplying an estimated 163,000 to 218,000 tons.

The PRC is expected to import 665,000 tons of U.S. soybeans in calendar year 1974. The United States will probably continue to be the only significant supplier.

To date, China's total agricultural imports for delivery in 1974/75 seem prudent and will probably

cover China's minimum needs for the period. Additional farm imports would depend on the following considerations:

Poor weather conditions during March-October 1974 could have an adverse effect on harvests.

Chinese leaders could decide to rebuild stocks, or in the case of bad weather, maintain stock levels. They could likewise decide to increase or maintain consumer rations.

Finally, the world supply and price situation for agricultural commodities could influence purchases of additional imports.

MONGOLIAN PEOPLE'S REPUBLIC

The Mongolian People's Republic is about one-fifth the size of the United States. It is a landlocked country sandwiched between the Soviet Union and China. Of the total land area of approximately 156.5 million hectares, less than one percent or 685,000 hectares are cultivated. Natural pastures cover about 90 percent of the total area. Of this, natural hay meadows of 2.2 million hectares, or a little more than 1 percent of the total land area, provide hay for livestock during the cold winter months.

Agriculture is organized into a system of state farms, agricultural associations, and other specialized farms. The principal crops are wheat, oats, and barley. Of much greater importance are the country's livestock herds. Mongolia has the world's highest livestock-to-population ratio and livestock production provides a large share of the national income.

For 1973, the third year of the current 5-year plan (1971-75), Mongolia set the goal of increasing gross agricultural production by 14 percent over the 1972 level. Livestock numbers were to increase 3.2 percent, and deliveries of grain and vegetables to the state, by two to three times.

Over the past few years, to encourage greater production, the Government has considerably raised procurement prices paid to farmers. In addition, a new incentive system for fulfilling and exceeding state procurement plans has been introduced. Wages of hay procurers have also been increased as a fodder procurement incentive.

The livestock sector produces about 80 percent of agricultural output in Mongolia. According to available data, as a result of raising 8 million head of young livestock in 1973, the total number of livestock increased by 250,000. These figures compare with an

unofficial report that in 1972 Mongolia raised 7.9 million head of young livestock and increased the country's total number of livestock by more than 400,000 head over 1971.

The increases in livestock numbers are due in part to the building of livestock shelters and the development of Mongolia's veterinary service. According to a December 1, 1973, radio broadcast from Ulan Bator, "nearly 4,000 veterinarians and their aides are presently working in agriculture, or one to three qualified veterinary service personnel for every livestock breeding farm. Mongolia has more than 1,200 veterinary hospital facilities and 40 veterinary laboratories and stations." These developments have helped reduce annual livestock losses, which are much higher than in the United States.

Total sown area increased some 12,400 hectares in 1973, up from 475,000 hectares in 1972. The increase in grain area was 2.6 percent, fodder crop area was up 8 percent, and area sown to potatoes, a minor crop, was up 22.2 percent. The 1973 grain harvest yielded some 525,000 tons.

U.S. imports of Mongolian camel hair, cashmere, and other agricultural commodities totaled \$1,162,000 in 1973. No U.S. agricultural exports were sent to Mongolia.

Mongolia trades almost exclusively with the Soviet Union. Large exports of meat and meat products (29,100 tons in 1972) are shipped each year to the Soviet Union's eastern Provinces, which are dependent on Mongolia for their meat supplies. Mongolia also exports hides and wool to the Soviet Union in return for imports of sugar, fruits and vegetables, fertilizer, insecticides, agricultural machinery, and many other commodities.

NORTH KOREA

Crop production in North Korea in 1973 appears to have been fairly good. According to official press reports, a bumper harvest of wheat and barley was

reaped, with an average yield of about 3 to 4 tons per hectare. The Government also reported a bumper harvest of rice. Rice is the most important grain crop,

and South Pyongan Province is the major producing area. Production in the Province increased more than 40 percent over the 1972 level. Good rice harvests were also reported in North Pyongan Province, South Hwanghae Province, Kaesong, and Kangwon Provinces near the demarcation line. Corn is another important grain crop, and the harvest this year was good. A total grain production figure was not disclosed, but based on 1970's production of 5 million tons, production in 1973 is estimated to be between 5 million and 5.5 million tons.

At present, no up-to-date information is available regarding the type and number of livestock. However, the latest figures indicate that during 1946-64, the number of large domestic animals rose from 470,000 to nearly 700,000 head. Hog numbers increased from 220,000 to 1.4 million head, and the number of sheep and goats increased from 7,000 to 350,000 head. Collective farms are encouraged to produce more than 2 tons of meat per work team and more than 100 kilograms of meat per family in rural areas. From 1961 through 1963, the number of chicken and duck farms in the state-operated sector increased 3.3 times. It is claimed that most of the chicken-raising facilities are mechanized and automated. To meet the livestock sector's demand for feed, the Government constructed some 200 feed mills throughout the country. Twenty-five facilities have been completed in North Pyongan Province, 15 in Kangwon Province, and 20 in South Hwanghae Province.

Much of the animal protein part of the Korean diet comes from the consumption of fish. In 1965, the country's haul of fish was about 735,000 tons. It was recently disclosed that shipbuilders of the Chongjin shipyard launched a large stern trawler of 3,750 tons, whose refrigerated capacity is 30 percent more than previous ones. Another large-sized stern trawler and a 14,000-ton freighter will be built in 1974.

North Korea's agricultural policies are designed to improve agricultural productivity and the average

income of farm people. To implement these policies, steps have been taken to adjust land ownership, structure of collective farms, prices and methods of farm management.

North Korea is controlled by the Communist Korea Workers Party (KWP). The economy is coordinated by means of a central plan and a 6-year plan (1971-76) is currently in force. For agriculture, special emphasis has been placed on mechanization, irrigation, electrification, and chemical fertilizer.

Mechanization of farm tasks such as sowing grain crops has increased in recent years. In 1970, there were about 30,000 standard tractor units or 1.2 units per 100 hectares. Chemical fertilizers and insecticides are being produced locally and more fertilizer plants are being constructed. In 1969, an average of 674 kilograms of chemical fertilizer was applied per hectare of paddy rice. Irrigated area in 1967 was reported to be 624,000 hectares, with reservoir and pumping capacity increasing 1.5 times and 3.2 times, respectively, over the 1961-69 average. In 1958, 59 percent of the villages and 47 percent of rural households had electricity. By 1970, most rural towns and 31 percent of rural families had electricity.

North Korean trade is generally balanced, with exports only slightly in excess of imports. The country's major trading partners are the USSR, China, and East European countries. In recent years, however, Korea widened her trade relations with some other countries, notably Japan and Hong Kong as well as certain countries in Latin America.

North Korea exports about 50,000 to 100,000 tons of rice each year. Other exports include apples, silk, tobacco, and some coarse grains. Agricultural imports include wheat, wheat flour and meal, sugar, raw cotton, and vegetable oil. Last year, North Korea signed a 3-year agreement with Argentina to purchase each year 500,000 tons of corn and 300,000 to 500,000 tons of wheat.

DEMOCRATIC REPUBLIC OF VIETNAM

Despite efforts by the Democratic Republic of Vietnam to rejuvenate its economy following the peace agreement in January 1973, the economy remained stagnant. However, some gains were made in restructuring the economy, an endeavor which is to continue through 1975. Growth was limited primarily because of declines in agriculture, the most important economic sector. The decline in agriculture was due to poor harvests of grains, particularly rice, other food crops, and some industrial crops. The official assessment was that agricultural production was . . . "generally encouraging, though slow and still confronting difficulties"—a disappointing contrast to the good crop year of 1972.

North Vietnam's first priority in 1973 was to restore transportation and communication networks,

which strengthened agricultural operations somewhat. Total internal trade rose slightly with increased purchases of agricultural products exceeding those of the industrial sector. However, poor management of materials and a disorganized distribution system hindered farm production, as supplies of inputs did not meet the demand. Prices remained steady. In sum, the year was viewed officially as one of adjustment rather than of economic growth.

Crop Production

Total crop production in North Vietnam in 1973 was less than in the previous year but was substantially above the level of 1971, when prolonged

flooding adversely affected the late rice crop. Total food crop production was down, primarily because of the effect of weather on rice and subsidiary crops such as corn, tubers, manioc and beans, buckwheat, wheat, and barley. Production of industrial crops was generally down. Increases occurred for peanuts and tobacco. The area of tea, bananas, and pineapple increased in line with a long-term program begun in the late 1950's with Soviet aid. Under the program, North Vietnam was to become a major source of tropical fruits for most Communist countries. The 1973 area planted to wheat, barley, and white potato crops, newly introduced into North Vietnam, exceeded that of 1972.

In 1973, area planted to the early rice crops expanded. Production, however, was 6 percent below the level in 1972, which in turn did not equal the record 1971 crops, harvested ahead of flooding. Two crops constitute North Vietnam's early rice harvest. One crop, referred to as the 5th-month crop, has been the traditional crop, but it is declining in importance. The other crop, referred to as the spring rice crop, is planted later than the 5th-month crop. This crop is becoming more important since it is planted to high-yielding varieties and has a shorter maturing period than the 5th-month crop.

North Vietnam's late rice crop—referred to as the 10th-month crop and comprising almost two-thirds of total rice production—suffered from a prolonged drought at seeding and transplanting time (consequently reducing acreage) and from typhoon damage and waterlogging later in the season. Official tabulation indicates that about one-fourth of the late rice area was affected and that about 13 percent (170,000 hectares) was completely lost. Although losses were substantially less than those in 1971, they had a depressing effect on 1973 agriculture. The good total rice crop in 1972 apparently provided sufficient carryover to modify the effects of the shortfall in 1973.⁷

Production of subsidiary crops was likewise disappointing in 1973. Area planted to these crops has been declining since 1968 and declined still further in 1973, reaching less than 80 percent of plan goals and only 90 percent of the 1972 area. Cold and dry weather during winter 1972/73 reduced production to two-thirds of the planned target and 88 percent of that in 1972.

Per capita consumption of subsidiary crops also has been declining. Under the first 5-year plan (1961-65), subsidiary food crop production in 1965 was to account for 24 percent of food crop acreage and supply 30 percent of food needs. The 1965 goal was not fulfilled, and in subsequent years, area and production of subsidiary crops declined while the

⁷Officials claimed that the 1972 rice crop was the highest in 12 years. The record in the past 12 years was 4,650,000 tons in 1961.

proportion of cropland for rice increased as did also the proportion of rice in the peasant's ration.

Official comments from North Vietnam intimate that area planted to all food crops has declined since 1965. For example, officials state that the 500,000 hectares of cropland in the midland and highland areas remained about the same during the past 10 years, but that per capita acreage declined.

Official statistics for rice production (1939 and annual 1955 to 1965) and preliminary ERS estimates for rice production since 1965 are as follows in thousands of metric tons, paddy:

Official statistics for rice production (1939 and annual 1955 to 1965) and preliminary ERS estimates for rice production since 1965 are as follows in thousands of metric tons, paddy:

1939 - 2,407	1964 - 4,512
1955 - 3,523	1965 - 4,511
1956 - 4,136	1966 - 4,100
1957 - 3,948	1967 - 4,000
1958 - 4,577	1968 - 3,800
1959 - 5,193	1969 - 4,000
1960 - 4,212	1970 - 4,200
1961 - 4,651	1971 - 3,500
1962 - 4,542	1972 - 4,660
1963 - 4,296	1973 - 4,100

Livestock

The livestock situation closely parallels that for crop production in North Vietnam, since the supply of feed is the limiting factor in livestock production. A North Vietnamese analysis of buffalo and cattle breeds in mid-1973 revealed that: (a) buffalo and cattle breeds had declined in quantity as well as quality; (b) milk production was very low; (c) cows sometimes did not produce sufficient milk to feed their calves; and (d) slaughter-carcass output was slightly over 40 percent of liveweight.

Livestock numbers were not released in 1973. At the beginning of 1970, buffalo numbers showed a 14-percent increase over the 1.45 million head in 1960. Cattle numbers declined 24 percent between 1959 and 1970, from 906,000 to 690,000. This trend appears to have slowed since then, but there is no indication that the trend has been reversed. Nothing has been said recently about the sheep purchased in the early 1960's from Mongolia. Owners encountered numerous problems in raising sheep, including the adverse effect of high temperatures and high humidity.

A possible bright spot in North Vietnam's agricultural sector in 1973 was that hog numbers reportedly increased 9 percent over the 1972 level. One official report gave a figure of 6.2 million hogs, but a subsequent report gave that figure as the goal for 1974. Another report in mid-1973 stated that hog numbers had never surpassed 5.5 million.

However, problems in the hog industry were: (a) the slow rate of increase, from 5.1 million in 1966 to possibly 5.5 million in 1973; (b) the low production per

sow (1.5 litters per year with 6-7 surviving pigs per litter); (c) the slow rate of gain per hog of only up to 40 kilograms in 12 months; and (d) the poor quality of native breeds. These problems stimulated the Government to adopt broad measures for improving hog production. These include: the increased use of cropland to produce feed, allotting a specific portion of grain production to livestock consumption, strengthening management and control measures, and developing breeding standards and breeds which are more adaptable to the country's climate. Although the number of hogs in the collective sector allegedly increased by 80 percent during 1973, they accounted for only slightly more than 11 percent of total hog numbers.

Policy and Agricultural Inputs

National agricultural policy during the Indochina conflict was to provide food, fiber, and shelter for the nation. Goals included: (a) the cultivation of one hectare of cropland by one worker, (b) the output of 5 tons of grain per hectare per year, (c) the raising of one hog per hectare per year, and (d) the utilization of 2 percent of grain production for animal feed to boost livestock production. These goals were not met because the necessary inputs were not available.

North Vietnam's agriculture is scheduled to play an increasing role in achieving the regime's goal of a socialist industrial economy. Collective farms will continue to be consolidated into large-scale production units. An indication of the past success of this effort is that between 1960 and 1972, the number of collective farms fell from 41,446 to 19,564, while the cultivated area per farm increased.

This reorganization of agriculture is thought by official planners to be especially necessary during the 1974-75 period of economic rehabilitation and development to revitalize the agriculture sector. Agriculture is to gear up its production through intensive use of inputs so that requirements of the second 5-year plan (1976-80) can be met.

Management is to be strengthened substantially at the production level. Zoning of agricultural production in the plains, midlands, and highlands is to be implemented not only to systematize production of crops with similar growth characteristics, but also to intensify cultivation through the use of increased inputs. The proportion of cultivated land used in producing subsidiary food crops and industrial crops is to be expanded.⁸ Inputs such as chemical fertilizer, water conservancy projects, improved seeds, electrification, and mechanization are to be utilized at increasing rates. Completion of the goals in the

vaguely defined plans is scheduled for the next 10 to 15 years, the equivalent of two to three 5-year plans.

Input requirements to underwrite the new development plans are enormous. For example, a 1972 study estimated the following chemical fertilizer needs for North Vietnam's agriculture:

Time period	Nitrogen sulfate	Phosphorus
	<i>1,000 metric tons (20-percent nutrient basis)</i>	
1972	600-800	Not given
1977-79	1,000-1,500	750-1,000
1982-87	2,000-2,500	1,250-1,500

During 1972-73, available chemical fertilizer, including both nitrogenous and phosphorous types, amounted to about half the requirement for nitrogenous fertilizers. Essentially, all supplies were imported. By the end of 1973, enough capacity had been restored to produce over 100,000 tons of nitrogenous and phosphorous fertilizers. This output, occurring so soon after cessation of hostilities, was due to the installation of machinery previously removed to safer inland areas. The level of other inputs needed is not known, but mechanization has not received as high priority as other inputs.

Level of Consumption

Per capita income in North Vietnam is among the lowest in the Far East. The country depends on substantial imports of food, probably in excess of 10 percent of consumption, although officials claimed about 10 percent during the war years.

Of a diet yielding between 1,800 and 1,950 calories per day a few years ago, about 80 percent of the calories came from starchy food, primarily grain. A little over 10 percent of the caloric intake came from proteins. The major source of protein was rice. Consumption of animal protein has remained low because of inadequate output from the livestock and fishing industries.

Despite the large food imports, the level of food consumption follows closely the level of domestic production. Food intake probably increased during 1972/73 because of the good crops in 1972. Consumption in 1973/74, however, probably will be down somewhat due to the shortfall of crops in 1973. Numerous irregularities in distribution at the retail level have been cited in the press during the past few months.

Agricultural Trade

The level of North Vietnam's agricultural trade is a national secret. Aside from military materials, grains have been a major import during the past two decades, followed by sugar, cotton, processed dairy

⁸During the first 5-year plan, rice area was to be reduced from 86 percent of food cropland in 1957 to 76 percent in 1975. Subsidiary crops were to occupy 24 percent of food crop acreage and supply 30 percent of total food needs.

products, animal fats, and natural rubber. Although the magnitude of imports probably will decline now that North Vietnam has entered a period of peace, the above imports are expected to continue.

Major exports of farm products have included rice, peanuts, coffee, tea, eggs, and tropical fruits. (table 13).

It is expected that additional farm products will be exported and that export volume will expand. This expansion is part of the country's economic policy whereby agriculture is to earn foreign exchange to enable the purchase of capital goods to speed the development of industry. As proof of this, the North Vietnamese have broadened negotiations with both Communist and non-Communist countries in an effort to increase trade. Exports of commercial crops have been given high priority.

Outlook

As the end of March 1974, the outlook for the current crop year in North Vietnam was not promising. Typhoons and waterlogging took a heavy toll of the 1973 10th-month rice crop and affected "tens of thousands of tons of grain" which were inadequately stored last fall. Some of the area designated for the 1974 5th-month and spring rice crops was affected as well as area designated for the winter-spring subsidiary and industrial crops.

From December 1973 through February 1974, dry, cold weather prevailed. Rice seedbeds in some areas had to be replanted. Other areas of 5th-month rice were irrigated by bucket brigades to facilitate transplanting. Some subsidiary and industrial crops were affected by the dry weather.

The cold spell also froze some crops in the higher elevations and northern sections of the country, destroyed some rice seedlings, and prolonged the period of transplanting. In some regions, buffalo and cattle died because of the cold and a lack of feed.

The 5th-month and spring rice crops, together with the subsidiary crops, account for over a third of North

Vietnam's food production. When output from all of these crops declines, food production for the year generally is down. Such an occurrence 2 years in a row would be a major setback to the rehabilitation and development program of 1974-75.

While it was claimed that the 5th-month rice crop was transplanted on time, there is evidence of poor quality work and thinner stands. Intensive planting operations were underway to complete transplanting the spring rice crop by March 9, the beginning of spring on the lunar calendar. Because of the shortage of seedlings, cadres were instructed to plant fewer seedlings per hectare. One hectare of seedlings was to be transplanted on 10 hectares; ordinarily it is transplanted on 7 to 8 hectares.

In late January, it was reported that the long dry spell had resulted in a drying up of water in lakes and ponds in many areas. The water level in the Red River was reportedly lower than in many previous years.

While North Vietnam has never had sufficient chemical fertilizer to meet crop needs (it is applied only on rice land), it was announced that less would be available in 1974 than previously. Despite the increased production of chemical fertilizers in 1973, as well as large imports, demand far exceeds supply.

Plans for 1974 call for a 16-percent increase in the gross value of agricultural production, a gain of 16 to 18 percent in grain production, and a substantial increase in production of industrial crops. Area of industrial crops is slated to increase 16 percent. Finally, hog numbers are to increase from 6.2 million to 6.3 million.

North Vietnam's agricultural production in 1974 will probably exceed 1973 output. But the country will be hard pressed to equal or surpass the high 1972 production level. Considerable improvement in crop production would be necessary during the second half of the year to more than compensate for the possibly reduced production during the first half of the year. In addition, the short supply of fertilizer, the perennial problem of water conservancy, and the weather have not favored the outstanding agricultural production needed to meet the Government's goals.

Table 13. North Vietnam: Major agricultural imports and exports,
1961-65 average, annual 1967-72

Commodity	: 1961-65 : average	: 1967	: 1968	: 1969	: 1970	: 1971	: 1972	
			<u>1,000 tons</u>					
Imports:								
Grains.....	49.6	80.0	361.0	338.0	622.0	449.0	516.0	
Of which wheat and flour <u>1/</u>	13.7	54.7	335.7	312.5	391.8	418.5	486.2	
Sugar, raw..... <u>2/</u>	26.2	45.5	51.0	60.0	57.6	92.3	97.8	
Animal fats.....	0.4	0.7	2.5	2.0	2.0	2.0	2.0	
Cotton.....	1.1	3.0	3.0	3.0	3.0	3.0	3.0	
Rubber, Natu- ral <u>3/</u>	2.6	2.4	1.8	1.5	1.0	1.0	1.0	
Exports:								
Rice.....	10.9	3.4	2.4	20.1	18.5	20.0	20.0	
Bananas.....	7.4	2.7	0.6	0.4	2.6	2.4	2.5	
Téa.....	0.8	1.1	1.8	1.6	1.8	1.7	1.8	
Peanuts.....	2.0	1.4	1.4	1.1	3.5	2.0	1.0	
Oilseed cake.....	0.4	0.2	0.5	0.4	0.7	0.8	0.8	

1/ In wheat equivalent.

2/ Average for 1962-66.

3/ Average for 1964-66.

Source: FAO, Rome: Trade Yearbook, Vol. 26, 1972.

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