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The Economy

India

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NATIONAL INTELLIGENCE SURVEY

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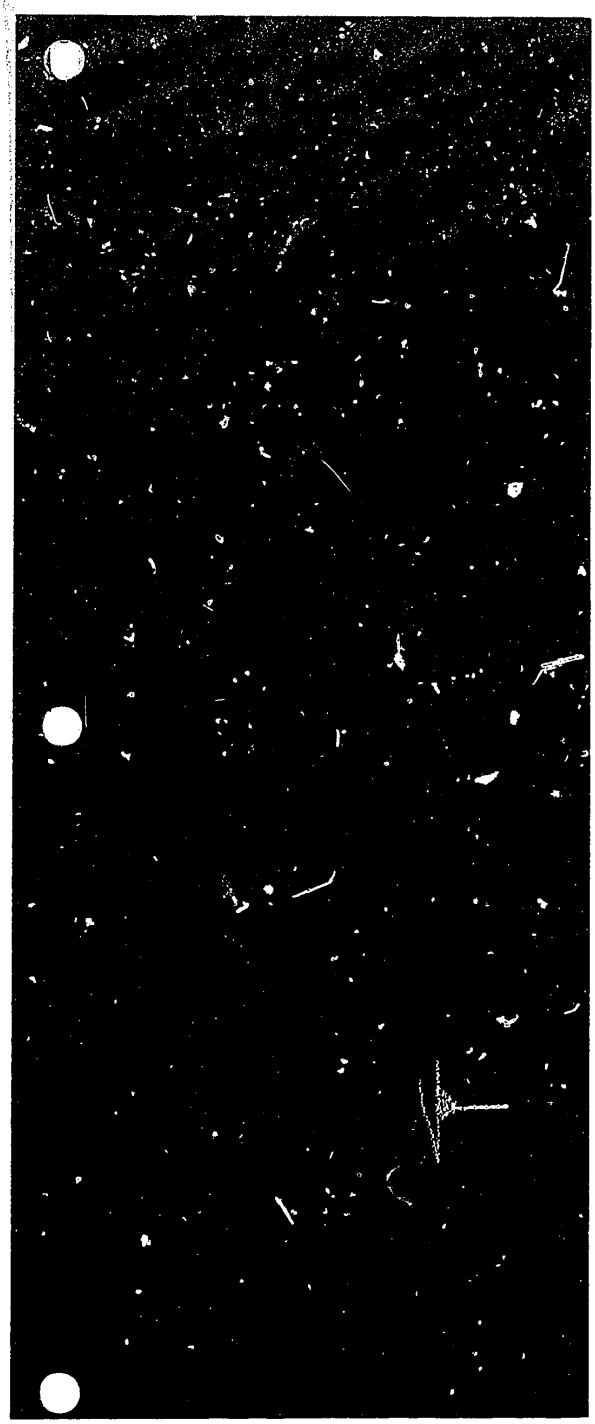

INDIA

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This chapter supersedes the economic coverage in the General Survey dated February 1970.

FIGURES

The Economy

A. Economic appraisal (U/OU)

India is the second most populous country in the world—578 million people by mid-1973—and by almost any socioeconomic standard, one of the poorest. It is predominantly an agricultural country, with about 80% of the population living in the countryside, mainly as subsistence farmers. Over the past two decades, population increases have consumed a major part of the modest economic gains (Figure 1). With an estimated gross national product (GNP) of US$56 billion (420 billion rupees in FY1972/73),[1] the average per capita income still was less than $100 annually. A development strategy of rapid industrialization, begun in the early 1950's, however, has greatly expanded the country's industrial base (Figure 2). India now produces nearly all of its supply of manufactured goods, with the exception of certain highly specialized and sophisticated equipment and components. Items produced by the industrial sector include precision instruments, electronic equipment, jet fighters and transports, tanks, frigates, motor vehicles, locomotives, railcars, tractors, steel, cement, cotton textiles, and jute manufactures.

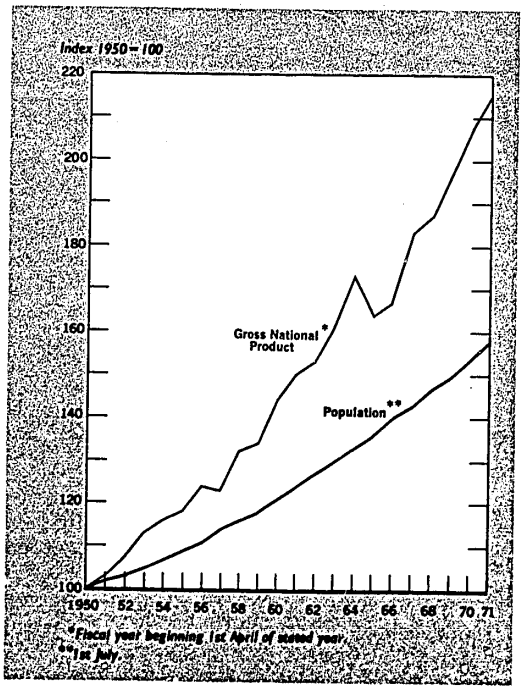

FIGURE 1. Indexes of population and gross national product (U/OU)

Periodic droughts and a rapidly increasing population continue to frustrate India's efforts to achieve self-sufficiency in foodgrains. Demographers familiar with the Indian scene estimate current population growth at about 2.5% annually and believe it will accelerate as mortality rates continue to decline and high birth rates persist. Growth of foodgrain production during the decade ending with crop year 1970/71[2] averaged less than 3% annually. Between 1967/68 and 1970/71 growth averaged more than 4%, but these were successive years of good weather. Poorer weather since 1970/71 has led to reduced foodgrain output. After 6 years of declining foodgrain imports, India almost achieved its long-sought goal of self-sufficiency in foodgrains, but declining production is again leading to increased imports.

One of India's principal economic problems continues to be the severe shortage of resources and capital. Investment for development has been further limited by heavy spending for other purpose such as defense; by the unwillingness of the central government to tax the agricultural sector sufficiently;

[1]The Indian fiscal year runs 1 April-31 March.

[2]Unless otherwise indicated, the Indian crop year runs 1 July-30 June.

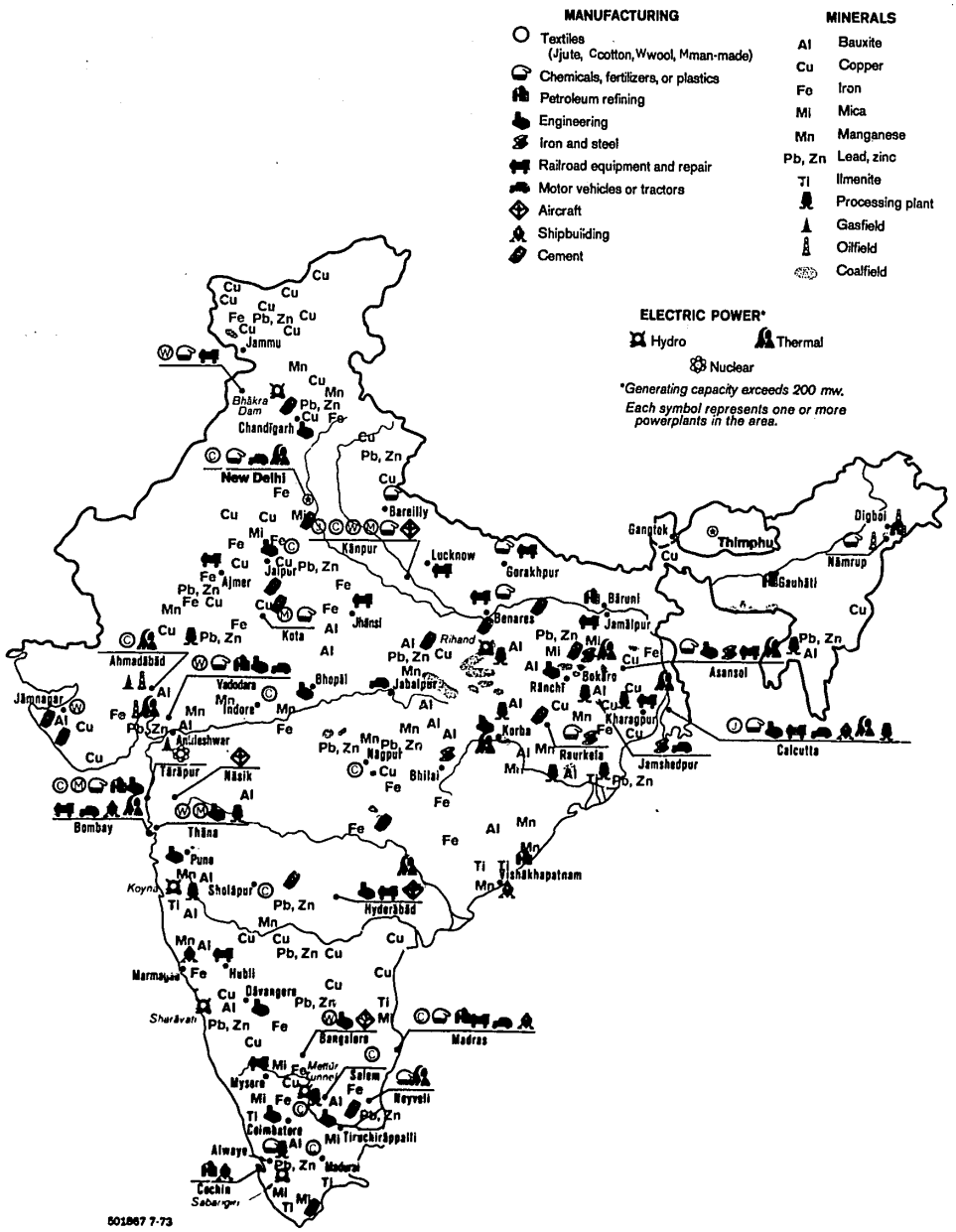

FIGURE 2. Manufacturing, minerals, and power (U/OU)

and by large expenditures for state-owned heavy industrial projects, many of which are characterized by excess capacities, low technical competence, and poor earning records. New Delhi has indicated its intention to direct economic policies more toward achieving social welfare goals, such as alleviating unemployment and individual poverty, but these goals can be achieved only through a rapid acceleration of national economic growth.

The structure of India's industrial sector has been strongly influenced by government policies directed toward achieving a more equitable distribution of income and an expansion of employment. Small-scale industry has been encouraged, although it often operates very inefficiently and is technologically backward. Small-scale industry is protected by a host of laws that include restrictions on the volume of production by large-scale industry, preferential licensing procedures, differential taxation, and direct subsidies. In the textile industry, for example, the government has protected the small-scale plants by holding down production in the modern, large-scale plants. Consequently, the smaller producing units have provided about four-fifths of the increase in textile output since 1950.

The output of India's capital goods industries has been constrained by bottlenecks in production, limited domestic markets, and the inefficiency of government-owned plants. New Delhi expanded the public sector at the expense of the private sector by reserving for the former most basic heavy industries such as coal, petroleum, iron, and steel. As a result, the public sector's share of industrial output increased from less than 5% in 1950 to about 20% in 1972. Public sector enterprises are tightly controlled by the central government; politics, not economics, is often the decisive factor with respect to employment, wage demands, and new industry locations. The public sector is free from the usual competitive pressures, resulting in less initiative, flexibility, and willingness to take risks and make quick decisions. There is also little incentive to reduce costs and improve efficiency. New Delhi now appears to be more committed than ever to a further enlargement of the public sector at the expense of the private sector. Because of this, the future growth of large-scale private industry, which is already limited by an extensive system of government controls, is likely to be slow.

Before independence was gained in 1947, India was a net exporter, but it subsequently became a net importer as a result of changing world trade patterns, particularly the decline in the old British imperial trading system. In addition, jute products, traditionally a major export item, suffered from the disruptions caused by the partition of the Indian subcontinent in 1947. Furthermore, since independence New Delhi's policies generally have hampered the growth of exports because the government gave priority to capital-intensive heavy industry at the expense of export-oriented light industry. India has a large potential for increasing mineral exports, but many large ore deposits, such as copper, remain virtually unexploited. The only major mineral products now being exported are iron and manganese ores, but these ores accounted for only 7% of India's total exports in FY1971/72. Thus, export growth must come primarily from the agricultural and manufacturing sectors. On the average, Indian exports have increased only 2.4% annually over the past 20 years, or about one-half the combined average rate achieved by all less-developed countries.

Indian exports consist largely of a narrow range of goods, many of which face sluggish world demand and increased competition from synthetic substitutes. In addition, India has lost ground in international competition with other less-developed countries. From 1950 through 1972, India's share of world markets for its three main export products actually declined: from 87% to about 55% for jute manufactures, from 44% to 33% for tea, and from 20% to 8% for cotton textiles. Moreover, 90% of the increase in exports went to the U.S.S.R. and Eastern Europe, where price competition was not a decisive factor. Belated efforts were made in the late 1960's to boost exports by giving exporters preferential treatment for essential imports, lowering export duties, and raising export subsidies. Export growth accelerated somewhat during 1968-72.

India's international economic relations have been characterized by chronic trade deficits and a heavy dependence on foreign aid to help finance imports needed for economic development and basic food requirements. Although foreign firms have enjoyed a relatively favorable rate of profit and the right to repatriate capital within prescribed limits, they face a host of regulations, red tape, and even outright government hostility. Foreign firms are under constant governmental pressure to give more and more equity to Indian partners. Moreover, New Delhi severely restricts the industrial sectors in which new private foreign investment is allowed.

Indian dependence on foreign aid increased sharply after 1960, and during the decade of the 1960's total foreign economic aid amounted to about $11 billion, more than twice the total received during the 1950's. About one-half of the aid during the 1960's came from the United States. Food shipments, principally from

the United States, accounted for as much as one-third of the total volume of foreign aid received during drought years. Net aid receipts have been declining since 1964 because of sharply rising debt payments and little change in gross aid receipts, which now run about $1 billion annually. The U.S.S.R. and Eastern Europe have provided only slightly more than 10% of India's total foreign economic aid, and their contribution to the country's overall economic development has been restricted to specific heavy industrial sectors, such as steel production and electric power, with almost nothing earmarked for agriculture or for basic industrial raw materials.

The modest pace of economic progress recorded in India during the past 25 years reflects the constraints imposed not only by limited resources but also by the country's development policies. Future progress—at least through the 1970's—will be limited by these constraints, which include: conflicts between the goal of economic growth and the other goals of the government; the continuing predominance of the agricultural sector, in which production will probably grow very slowly; limited investment funds for industrial development; and limited markets and falling prices for traditional exports that, as a corollary, lead to a shortage of foreign exchange with which to finance essential imports.

Despite substantial gains in industrial production and technology, living conditions for the bulk of the population remain desperately poor. The typical Indian is a small subsistence farmer or tenant who ekes out a living in an isolated village under bare subsistence conditions. Because of the rapid growth of population and the slow growth of job opportunities in rural areas, millions of Indians have migrated to the cities, where they have swelled the ranks of the urban poor. Most Indians are susceptible to a host of debilitating diseases because of malnutrition and lack of medical care and proper sanitation facilities. A serious drought or other natural disaster often kills thousands of under nourished or sick Indians. Bitter religious, caste, and linguistic differences hamper economic progress and periodically flare up into riots that cause extensive damage to life and property.

B. Sectors of the economy

India's progress toward industrialization and urbanization is reflected in the altered distribution of national income since FY1950/51 (Figure 3). At that time, the industrial sector (manufacturing, mining, electric power, and construction) accounted for 16% of national income. By FY1971/72, however, the

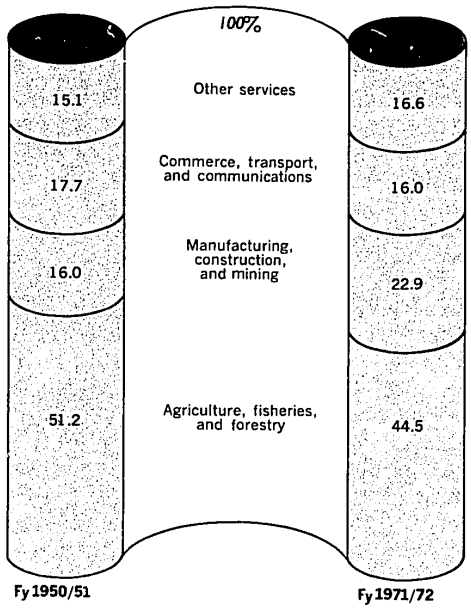

FIGURE 3. Distribution of national income, by sector (U/OU)

industrial sector's share had risen to 23%. Meanwhile, the share of agriculture (including fisheries and forestry) declined from 51% to 45%. Trade, services, and utilities expanded at about the same rate as overall national income. (U/OU)

1. Agriculture, fisheries, and forestry (U/OU)

a. Topography, climate, and land use

The Indian subcontinent contains three broad topographic and climatic areas that strongly influence land utilization patterns (Figure 4). The great mountain wall of the Himalayas consists of a series of parallel ranges with large plateaus and valleys extending about 1,554 miles from Jammu and Kashmir in the northwest to Arunachal Pradesh in the northeast.[3] Agriculture in this area is limited by high elevations, steep slopes, and cool weather. Rice and fruit orchards are cultivated in some of the fertile narrow river valleys, and tea is grown on the lower slopes in West Bengal and Assam. The Indo-Gangetic Plain extends from 155 to 186 miles south of the

[3]For diacritics on place names see the list of names on the apron of the Summary Map in the Country Profile chapter and the map itself.

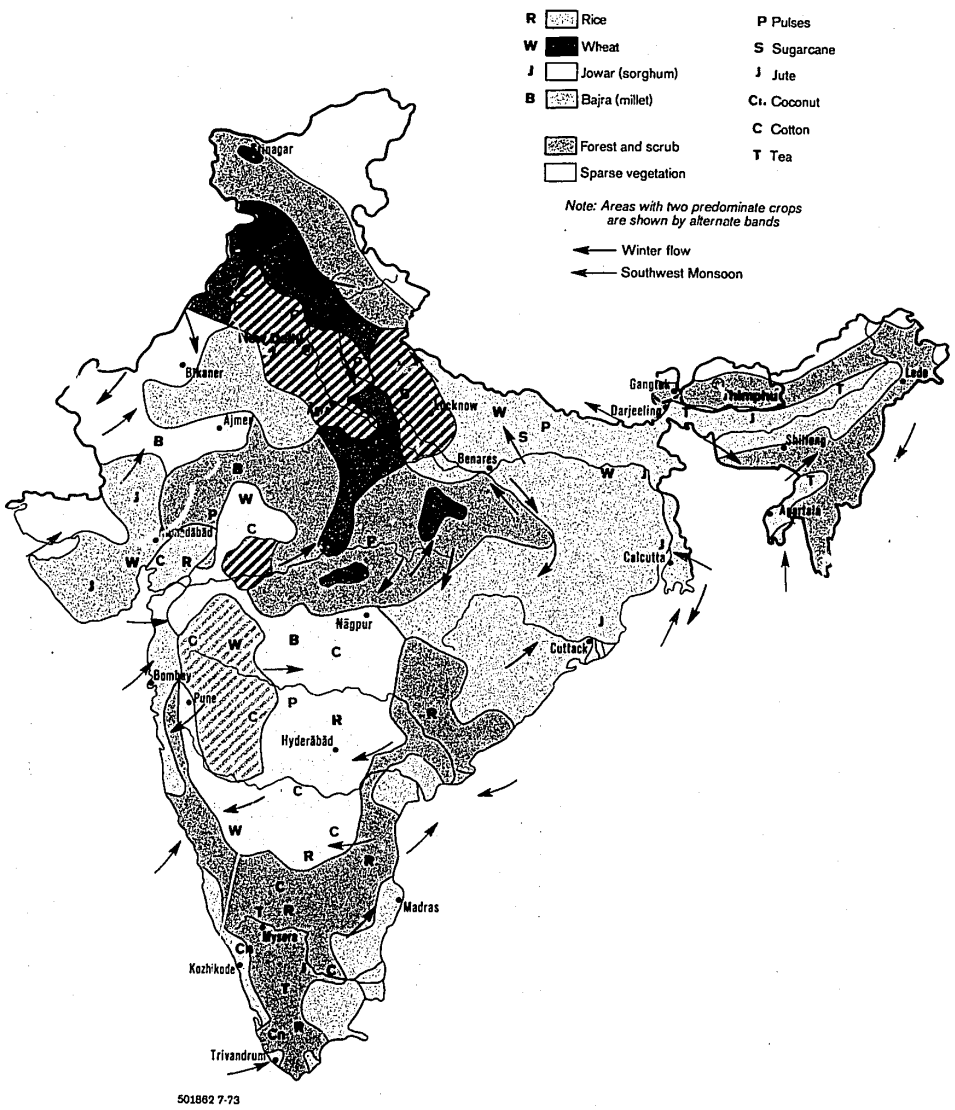

FIGURE 4. Major crop areas (U/OU)

Himalayas, and comprises the basins of the Indus, Ganges, and Brahmaputra rivers. It is one of the world's largest alluvial plains and most densely populated areas and contributes a large part of India's agricultural output. The eastern portion alone, including the states of West Bengal, Bihar, and Uttar Pradesh, accounts for more than one-third of the country's rice output and much of its sugarcane, jute, and tea. The chief crops in the drier western portion of the plain are wheat, barley, gram (mainly chickpeas), corn, and cotton. The Deccan plateau, which includes most of peninsular India below the Indo-Gangetic Plain, is separated from the plain by mountain ranges and hills. Two mountain ranges—the Western and Eastern Ghats—extend in a general north-south direction along the sides of the plateau, leaving a

narrow coastal strip on the west and a broader coastal plain on the east. The central part of the plateau is a comparatively dry agricultural area, which produces many types of millets and grain sorghums, as well as peanuts, tobacco, and cotton. The east coast sections receive heavy rainfall and are well suited for rice, while commercial crops such as spices, coconuts, coffee, and rubber are grown on the southwest coast.

India's climate is essentially monsoon-tropical. The Himalayas help to moderate the winter weather by preventing much of the frigid air from the north, from entering the country. Except at the higher elevations in the north and northwest, temperatures are favorable for year-round crop production during three main seasons. The southwest monsoon generally arrives in May or June, inaugurating the wet season that lasts, in most areas, through September or October. The winds originate in the Indian Ocean and travel northward up both coasts, on each side of the Deccan, to Bombay and to Calcutta and the Ganges valley. Rainfall is usually frequent and heavy; daytime temperatures generally remain at 90° F. or above, and relative humidity is high. In October, the cool season begins when the winds reverse direction and a northeast monsoon moves down the Ganges valley and heads southward over the peninsula. This season is quite dry except over southeastern India, where the coastal area near Madras has a winter rainy season. Mean temperatures reach a low in January, when they range from 50°F. to 70°F. in the Ganges Valley and 70°F. to 89°F. over most of peninsular India. A hot, dry season begins in March and lasts until the arrival of the southwest monsoon. There is little rainfall during this time, and dust storms can be quite destructive in places.

The two main crop-growing seasons are the summer season, or *kharif*, associated with the southwest monsoon, and the cool season, or *rabi*, associated with the northeast monsoon. Most areas receive about 70% of their total annual rainfall during the summer season, and about 75% of total agricultural production takes place at that time. Wheat, barley, flaxseed, mustardseed, and rapeseed are grown during the *rabi*, and most other crops during the *kharif*. Many tropical crops are grown year-round. The success of India's crops depends to a large extent on the unpredictable variations in time of arrival, duration, distribution, and intensity of the monsoons Crop yields decline when late monsoons delay sowing, and below-normal rainfall frequently results in crop failures. Since 1950, declines in foodgrain production due to erratic monsoons have occurred in about one out of every 3 years.

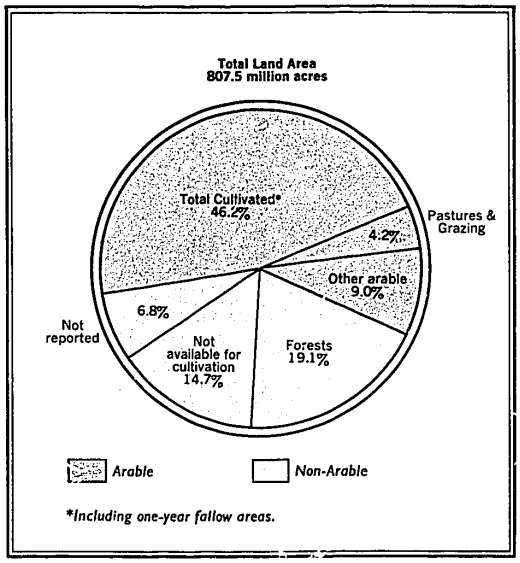

FIGURE 5. Land use, crop year 1970/71 (U/OU)

About 60% of India's total land area is classified as agricultural land, and of this about 75% is cultivated (Figure 5). Forests account for about one-half of the non-cultivated area, and the remainder is mountainous, barren, or uninhabited. During 1971, only about 64 million acres, or about 17% of the cultivated area, was sown more than once within the year, and most of this multicropped land was nonirrigated.

During the main summer crop season, rainfall on about 70% of the cultivated area generally is inadequate and too erratic for intensive cultivation. Irrigation is vital, but its development is proceeding slowly. Estimates of irrigated area vary from 65 million to 100 million acres, depending on the reporting method used. Even in irrigated areas, however, most water storage facilities are too small to support year-round cultivation, and by crop year 1971/72 less than half the irrigation potential had been developed. Small-scale irrigation has received special emphasis since the droughts of 1965/66 and 1966/67, and by June 1972 India had about 470,000 tube wells—nearly four times the number in 1966—and 2.4 million diesel or electric pumpsets, compared with 980,000 in 1966. Small-scale irrigation works have spread rapidly, but major irrigation projects have lagged behind schedule, due mainly to the lack of coordination among numerous government and private agencies.

Most farmers in India plant the bulk of their cultivated land in foodgrains, with rice alone

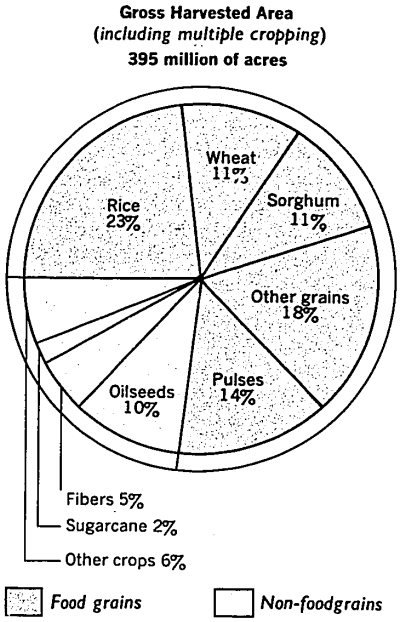

FIGURE 6. Use of cultivated land, crop year 1970/71 (U/OU)

accounting for nearly one-fourth of the planted area (Figure 6). Much of the cultivated land is marginal; it is easily eroded, and has poor fertility and a low moisture content. Yields in such areas are very low.

b. Agricultural policy and the Green Revolution

Serious efforts to improve the performance of Indian agriculture did not begin until the mid-1960's, prompted by a disastrous drought and rising imports. New Delhi's new strategy consisted of applying new technology in areas of adequate water supply, increasing the general availability of chemical fertilizers, pesticides, and other modern inputs, and maintaining farm prices at incentive levels. The success of the new technology—the so-called "Green Revolution"—depended mainly on new high-yielding varieties (HYV) of seeds and the whole package of technical and material inputs required to make them productive. By 1972, the use of HYV foodgrain seeds had spread to 42 million acres, or almost 15% of the total foodgrain area.

High-yielding rice seeds were first developed at the International Rice Research Institute in the Philippines during the early 1960's. Scientists there attempted to raise the yields of the traditional tropical Asian rice and still retain its disease and drought resistance by cross-breeding it with high-yielding Taiwanese seed, which is disease-prone under tropical conditions. The new varieties have stiff stems, which are the key to their increased productivity. Because of this characteristic, they can be heavily fertilized and watered, and can produce a heavy seed head without falling over, or lodging. Traditional varieties, when heavily fertilized, grow taller and lodge when the heads grow heavy. The HYV seeds also have a short growing season, making more multiple cropping possible.

By 1965, the TN-1 and IR-8 varieties were developed and were imported into India without further adaptation to local requirements. These high-yielding varieties of rice encountered problems in India, however, largely because they are prone to local diseases and have poor milling and taste characteristics. Meanwhile, Indian research in Tamil Nadu produced another HYV, ADT-27, which has consumer acceptance, but is suitable for use in only one growing season and in a limited area of India. The development of HYV rice which can be fully acclimated to local conditions and the accompanying agricultural technology is expected to take at least several more years.

High-yielding varieties of spring wheat were first developed in Mexico by using dwarfing genes discovered in Japan to give the plants short, stiff stems and nonlodging qualities. In 1963, four varieties of the dwarf seeds were sent to India, where they were tested in numerous locations. Lerma Rojo and Sonora 64 varieties were eventually selected for their high yields and relative resistance to wheat rust (Figure 7). These strains were released for general use, and a program to distribute the seeds over a wide area began in 1966. In 1967 Indian researchers developed an amber-colored, high-protein seed that was more suited to Indian tastes, by treating the Sonora 64 variety with gamma rays. The amber seeds are rapidly replacing the original Mexican varieties. Both the Mexican and amber wheats are adaptable for use throughout India's wheat area because of its relatively homogeneous topography and climate, which are similar to the Mexican wheat areas.

High-yielding varieties of coarse grains (corn, millet, and grain sorghum), first introduced in 1963, have spread very slowly. Their yields are not substantially above those of local varieties, unless sufficient and carefully controlled water is available, a condition that does not exist in much of the area in which these grains are grown. HYV pulses are not

available, nor has India invested much time and effort in this development despite the importance of pulses as a main source of protein in the Indian diet.

HYV seed yields are much higher and the input requirements are much greater than for traditional varieties. In general, HYV rice yields are up to 300% higher and HYV wheat yields even greater, compared to local varieties. The actual yield advantage over traditional seeds depends upon the degree of fertilization. Without fertilizer, HYV seeds yield little or no additional output over traditional seeds. High-yield varieties can absorb 200 pounds of plant nutrient per acre before the positive response materially falls off, com, ared to an optimum of 125 pounds of nutrient for traditional varieties. Under optimum conditions, each pound of fertilizer gives a 50% higher yield when applied to HYV seeds than traditional seeds.

FIGURE 7. High-yielding varieties of Mexican wheat (U/OU)

For the fertilizer to be effective, HYV seeds require water application rates of 3 to 4 acre feet of water per year, compared with only 1 acre foot for traditional varieties. Planting, cultivating, and harvesting schedules are very exact for the HYV seeds and require larger amounts of labor during peak season. As multiple cropping is increased, peak labor requirements occur more frequently. More machinery is also needed, particularly mechanized driers, in order to harvest the early maturing HYV crop before the end of the wet season. Increased quantities of insecticides and other protective chemicals are required because, as the ecological balance (in the short run at least) shifts with the use of the new seeds, the conditions become ideal for the spread of pests and diseases. The HYV technology also requires improved farm and water management, as all inputs must be made available at the right time and in the right amounts. Without all these requirements, the use of HYV seeds can result in almost total loss.

In order to induce farmers to adopt the new technology, the government took measures to stabilize producer prices. Government procurement prices were raised in crop year 1964/65 to bring them nearer the prevailing open market prices, which were well above world prices. The rise in the procurement price for wheat, combined with favorable growing conditions in the Punjab for high-yielding wheat, led to a rapid expansion in investment for irrigation, fertilizer, machinery, and other modern technology.

High wheat prices, while spurring a rapid increase in output, also caused shifts in land use from other crops and in some areas actually lowered the quality of the Indian diet. Wheat also competed with opium poppies, judging from the government's failure to expand the poppy area to meet the strong world demand for medicinal opium in the early 1970's. The planting of wheat on land traditionally used for coarse grains and pulses reduced per capita availability of these crops and raised their prices. Coarse grains are the staple food of a large segment of the poorer classes, especially the landless laborers, and pulses are a major source of protein. Conversely, the new varieties of wheat are low in essential protein and amino acids.

Wheat prices were maintained at about double the world export prices, resulting in a heavy fiscal drain on New Delhi. The Food Corporation of India, which is responsible for pricing, stockpiling, and selling

foodgrains through fair price shops, steadily increased its procurement of domestic wheat in order to support wheat prices and to build a stockpile. During crop year 1971/72, the Corporation bought about 6 million tons[4] of wheat at US$102 per ton and sold it for about the same price, thus absorbing the cost of transportation, processing, and storage. Until recently, no budgetary subsidy was necessary because profits from the government's sale of low-priced, imported wheat more than offset the losses on domestic wheat. For FY1971/72, however, the budgetary allowance for wheat subsidies was about $176 million, up from $40 million in the previous fiscal year.

Rapid growth of wheat production since crop year 1967/68 has resulted in a sixfold increase in the amount of wheat marketed and scheduled to be purchased, stored, and distributed. The resulting congestion in market centers, many of which possess no organized facilities for handling grain, has increased grain losses and has even resulted in the imposition of controls on production in some areas. In Andhra Pradesh, the state government in 1970 urged that areas normally planted to a second rice crop be used for some other purpose to avoid market congestion. Nevertheless, government-held foodgrain stocks increased from 5.5 million tons in 1969 to a reported record 9.5 million tons in July 1972. Because of decreased foodgrain production in crop year 1972/73, these stocks had been drawn down to only 2.7 million tons by March 1973.

The Green Revolution has increased India's already severe income disparities among various agricultural areas and between large and small landholders. Because one-third of the sown area normally receives less than 30 inches of rainfall annually (concentrated over a three-month span), greater benefits tend to accrue to irrigated areas and to farmers who have more irrigated land. Since 1962, the government has concentrated its agricultural spending in the irrigated area (20%-25% of the total cultivated area) and in areas that have adequate rainfall. These areas received even more emphasis after 1966 with the planting of the HYV seeds, which require better water control. Consequently, progress has been concentrated in the Indo-Gangetic Plain and in river valleys, and in other areas of the country where irrigation is available. The areas in which HYV wheat could be grown were particularly favored, especially the states of Punjab, Haryana, Rajasthan, and western Uttar Pradesh. Research was only recently begun on raising yields in areas without irrigation or adequate rainfall.

[4]All tonnages are metric, unless otherwise indicated.

Within the irrigated areas, gains from new technology have been unevenly distributed, with the benefits being heavily weighted in favor of the larger farms, while the position of small farmers and tenants actually has been made more difficult. In general, farmers with 10 acres or more—accounting for only 10% of all holdings in the country—have been able to invest in minor irrigation and new farming equipment. Farmers with holdings of 5 to 10 acres generally have managed to increase yields by applying small amounts of fertilizer, thereby increasing their incomes, but have been unable to invest in land development. Farmers with 2½ acres or less—about 40% of the holdings in the country—have been barely able to stabilize their standard of living in the face of rising costs; most are experiencing a cost-profit squeeze, and some are selling or renting their land to large-scale operators. With rising land values, large owners who have continued to lease out land are raising rents or are demanding a larger share of the crop. Most tenants cannot afford to invest in the new production techniques and many are becoming landless laborers. With more intensive cropping and greater crop diversification, agricultural laborers have tended to find work more readily, and their wages have increased since the late 1960's. With a 25% increase in consumer prices between 1966 and 1972, however, laborers generally experienced little improvement in real incomes.

Although fertilizer is a key requirement for higher yields, its use actually slowed considerably after crop year 1968/69. In the previous decade, the consumption of nitrogenous and phosphatic fertilizers increased by an average of 26% annually, from 174,000 tons (nutrient content) to 1.7 million tons. This growth still left India with a fertilizer consumption of only 9.5 pounds per acre of arable land, compared to a world average of about 35 pounds. In 1969/70 and 1970/71, the growth in fertilizer consumption averaged only 15% annually, but in 1971/72 it increased by about 20%, raising total fertilizer consumption to about 2.7 million tons. The two-year slump apparently resulted from marketing problems and a price rise that followed the elimination of fertilizer subsidies and imposition of a 10% excise duty. The marketing system was improved in 1971/72, but the excise duty was increased to 15% in April 1972. India remains dependent on fertilizer imports despite its rapidly growing domestic fertilizer industry and its relatively low level of fertilizer consumption. About 710,000 tons of fertilizer were imported in crop year 1970/71.

India has made some progress in expanding the irrigated acreage, but such acreage is still far short of the estimated potential of about 200 million acres. Until the mid-1960's, the government concentrated on extending irrigation over as large an area as possible rather than on fully irrigating a smaller area to maximize its output. Moreover, the development of large- and medium-sized projects was slow, partly because of the failure to synchronize the construction of dams with the building of canals. Throughout India there are many major projects under various stages of construction which, when completed, will increase irrigated acreage by about 50%. In some irrigation projects, the entire reservoir storage capacity is used annually and must be replenished.

India has made good progress in research to develop high-yielding seeds and, with foreign assistance, has increased the capacity to produce such seeds. Insufficient irrigation remains the principal limitation to the increased use of these high-yielding varieties, particularly rice. Installation of private tube wells has helped to expand the use of high-yielding varieties of wheat, which have already been sown on most of the available irrigated wheat acreage. Although the new rice varieties have a shorter growth period than traditional strains, they do not lend themselves readily to year-round cropping in India because of the lack of adequate drying facilities and the likelihood that the harvest will coincide with the wet season. The potential for increased rice production during the main growing season is good, however, if proper control of irrigation water can be achieved in traditional rice areas of the Indo-Gangetic Plain.

Increased availability of rural credit is an essential prerequisite for the extension of the Green Revolution to most of India's farmers. Much of the agrarian progress thus far has occurred on the rich, well-irrigated land and larger farms of the Punjab that are hardly typical of Indian farmland. In accordance with the Fourth Five Year Plan (FY1969/70-FY1973/74), the government-sponsored cooperative system has continued to provide a significant share of farm credit.

In 1972, cooperatives provided about 30% of the production loans obtained by farmers. Short- and medium-term credit is extended through a three-tier system composed of 25 state cooperative banks and about 160,000 primary agricultural credit societies. Cooperatives have helped to expand badly needed credit at 8.5% to 11% annual interest rates, which are reasonably low rates in India. However, losses resulting from bad debts have been great enough to endanger the cooperatives' existence. A crop-loan system was introduced in cooperatives in 1966 whereby farmers can borrow needed materials rather than cash. As is the case with most of India's national programs, states vary greatly in the efficiency and usefulness of credit cooperatives. In addition to cooperative credit, the contribution of the commercial banks increased sharply after their nationalization in July 1969. Direct advances by commercial banks for agricultural purposes increased from Rs440 million to Rs2.4 billion between June 1969 and June 1971. Among the institutions providing long-term credit for agricultural development are the Land Development Banks. In crop year 1969/70, the volume of new loans by those banks reached Rs1.6 billion, compared with Rs120 million in 1960/61.

Another major factor essential to the success of the Green Revolution has been an increase in the number of trained extension workers to demonstrate to the farmers the cultivation practices necessary for high-yielding seeds. Agricultural universities and colleges are playing an increasingly important role in this area and in accelerating the general pace of agricultural development. From 1960 through 1971, 13 new agricultural universities were started with significant help from American universities under AID contracts, bringing the total number of such institutions in India to 14 agricultural universities, 73 agricultural colleges, and 20 veterinary colleges. Agricultural extension work on the whole, however, continues to be weak. Moreover, formidable political and sociological barriers to effective agricultural performance still exist. For example, each state controls its own agricultural policies, and the states are not always willing to cooperate with the central government. Diverse interests of the states and the central government, differences in religion and language, competition for projects and resources among the states, rural resistance to change, fragmentation of landholdings, and the paucity of technical agricultural skills present a critical challenge to accelerated agricultural growth.

c. Food crops and livestock

Although India is one of the world's leading producers of grain, the per capita supply remains low, and only in 1970 and 1971 did total output approach domestic requirements. In crop year 1972/73, however, output fell substantially below requirements because of widespread drought. Foodgrains (cereals and pulses) account for about 80% of food consumption. Although per capita availability of these grains increased after the mid-1960's, it was still no higher in 1971 than in 1959. The increase in foodgrain output, instead of raising per capita consumption, has been used to build buffer stocks and to reduce

dependence on foodgrain imports. Food availability in India varies widely among states, between rural and urban areas, and seasonally. In addition, the shift in production—from pulses and coarse grains to wheat and rice—that has occurred since the mid-1960's, has made the Indian diet more deficient in protein than before. Some areas have chronic food shortages and other areas have periodic low consumption levels due to natural calamities or other special situations, such as the Bengalee refugee influx from East Pakistan into the adjacent Indian border states during 1971.

With its population increasing by about 14 million annually, India needs an additional 2.5 million to 2.75 million tons of grain annually to maintain per capita consumption levels. Between crop years 1967/68 and 1970/71, average annual increases in production exceeded these levels, and imports were gradually reduced. Foodgrain imports reached a peak of more than 10 million tons in 1966, but they declined steadily thereafter to 2.2 million tons in 1971 (Figure 8). India had hoped to export wheat in 1972 for the first time since independence, but such hopes were dashed by drought during the summer of 1972.

After the disastrous droughts of the mid-1960's, agriculture recovered rapidly. Favorable weather conditions, and the increased use of high-yielding grain varieties—mainly wheat—raised foodgrain output from 95 million tons in crop year 1967/68 to 108 million tons in 1970/71 (Figure 9). Production in 1971/72 declined to 105 million tons. The area under high-yielding varieties increased from 15 million acres in 1967/68 to about 42 million acres in 1971/72.

Production of all grains was adversely affected by serious flooding in the Indo-Gangetic Plain and a drought in some highland areas during the summer of 1971. Rainfall during the 1972 monsoon season was even more erratic, and foodgrain production was expected to decline during crop year 1972/73. The premonsoon rains failed, and the ground could not be prepared for planting in many areas. The northwest monsoon arrived several weeks late, further delaying planting, and in mid-July the rains ceased in most of the subcontinent. During August, rainfall resumed, but the monsoon weakened again in September. The overall extent of the damage to the 1972 crop probably would not be known until the late spring of 1973.

Rice, the principal crop and staple food of most of the population, accounts for more than 40% of India's foodgrain consumption and about 25% of total food consumption. India is the world's second-largest rice producer, surpassed only by the People's Republic of China. Average rice yields, however, are among the lowest in the world.

FIGURE 8. Foodgrain Imports* (U/OU)
(Thousand metric tons)

CALENDAR YEAR	WHEAT	RICE (MILLED)	COARSE GRAINS**	TOTAL***
1947–50†	1,467	628	701	2,796
1951	3,004	761	976	4,801
1952	2,551	734	641	3,926
1953	1,711	178	146	2,035
1954	200	635	8	843
1955	442	269	0	711
1956	1,113	330	0	1,443
1957	2,898	748	0	3,646
1958	2,716	397	111	3,224
1959	3,553	295	143	3,391
1960	4,386	699	143	5,228
1961	3,092	384	134	3,610
1962	3,250	390	87	3,728
1963	4,073	483	61	4,617
1964	5,621	645	113	6,378
1965	6,583	783	229	7,595
1966	††7,832	787	1,780	10,399
1967	†††6,400	455	1,882	8,735
1968	4,765	446	529	5,740
1969	3,090	487	295	3,872
1970	3,350	220	0	3,570
1971	1,907	306	16	2,229

*Not including small quantities imported by the private trade overland from Nepal, and some P.L. 480, Title II, imports from the United States.

**Including corn imported from the United States under Title I by the All-India Starch Manufacturers Association.

***Because of rounding, components may not add to totals shown.

†Annual average.

††Including 48,000 tons of wheat flour.

†††Including 52,000 tons of wheat flour.

Rice is grown in all states; West Bengal, Tamil Nadu, Andhra Pradesh, Bihar, and Orissa are the leading producers, accounting for three-fourths of total rice production. Two main rice crops are harvested annually—a small summer crop in the river deltas of the south and a large winter crop in the other areas of the country. The major crop, which accounts for almost all rice production, is sown from May to September and is harvested from September to January. Early-maturing varieties are sown from March to August and harvested from June to December. India's main rice crop is dependent on the southwest monsoon, which contributes the greater part of the annual precipitation. Less than 40% of the country's rice area is irrigated.

Rice production in India fluctuates considerably in response to weather conditions. It averaged about 35 million tons in 1960-63, increased to 39 million tons with unusually good weather in 1964, then fell to about 31 million tons during the two drought years of

FIGURE 9. Foodgrain production (U/OU)
(Million metric tons)

CROP YEAR*	RICE (MILLED)	WHEAT	COARSE GRAINS**	PULSES	TOTAL***
1949/50	23.54	6.39	16.82	8.16	54.92
1950/51	20.58	6.46	15.38	8.41	50.82
1951/52	21.30	6.18	16.09	8.42	52.00
1952/53	22.90	7.50	19.61	9.19	59.20
1953/54	28.21	8.02	22.97	10.62	69.82
1954/55	25.22	9.04	22.82	10.95	68.04
1955/56	27.56	8.76	19.49	11.04	66.85
1956/57	29.04	9.40	19.86	11.55	69.86
1957/58	25.52	8.90	21.23	9.56	64.31
1958/59	30.85	9.96	23.19	13.15	77.14
1959/60	31.68	10.32	22.87	11.80	76.67
1960/61	34.57	11.00	23.74	12.70	82.02
1961/62	35.66	12.07	23.22	11.76	82.71
1962/63	33.22	10.78	24.63	11.53	80.15
1963/64	37.00	9.85	23.72	10.07	80.64
1964/65	39.31	12.26	25.37	12.42	89.36
1965/66	30.66	10.42	21.15	9.80	72.03
1966/67	30.44	11.39	24.05	8.35	74.23
1967/68	37.61	16.54	28.80	12.10	95.05
1968/69	39.76	18.65	27.18	10.42	94.01
1969/70	40.43	20.09	27.29	11.69	99.50
1970/71	42.45	23.25	30.54	11.58	107.82
1971/72	42.73	26.48	24.38	11.06	104.65

*1 July–30 June.
**Including grain sorghum, millets, corn, and barley.
***Because of rounding, components may not add to the totals shown.

1965 and 1966. Thereafter, small annual increases in production were recorded through crop year 1971/72, raising output to 43 million tons. Poor rainfall in 1972, however, reduced rice production in 1972/73 to an estimated 33 or 34 million tons. During the 1960's, the area sown to rice increased only about 10%, and average yields increased by about the same percentage. India was able to narrow the gap between production and consumption of rice mainly by promoting the consumption of wheat instead of rice. Rice imports fell from 522,000 tons in FY1969/70 to 230,000 tons in FY1971/72, excluding about 150,000 tons donated for East Pakistani refugees in the latter year.

Wheat production, which has been influenced by the Green Revolution more than any other crop, is India's second most important foodgrain and accounted for about one-fourth of total foodgrain production in crop year 1971/72. Wheat is grown primarily in Uttar Pradesh, Madhya Pradesh, Punjab, and Haryana. It is sown in October and November, and harvested between March and May. The rotation of wheat with such crops as gram, corn, grain sorghum, cotton, and millet is common. Wheat production has set new records in each year since 1966/67, and reportedly reached 26 million tons in 1971/72. About 43% of the wheat acreage receives some irrigation, but wheat production is still highly dependent on timely rainfall. More than 40% of the total area planted to wheat in 1971/72 was sown to new, high-yielding dwarf varieties, which contributed about 70% of total wheat production. By 1971, the new varieties had already been sown on most of the irrigated wheat acreage. The rise in wheat production after 1966 was also due in part to the government's maintenance of wheat procurement prices at relatively high levels and the subsidizing of chemical fertilizers, HYV seeds, and insecticides.

Coarse grains, which accounted for 23% of foodgrain production in crop year 1971/72, include grain sorghum, corn, barley, and millet. These grains are generally grown on relatively infertile soils where water resources are poor; about one-half of the barley area is irrigated. Due to competition from wheat for the better land, production of coarse grains has stagnated since 1967/68 at about 30 million tons or less, despite the availability of high-yielding corn, grain sorghum, and millet seeds. Cultivation of grain sorghum, the leading coarse grain, is concentrated in Maharashtra, Andhra Pradesh, Madhya Pradesh, and

Mysore. Grain sorghum is used as a foodgrain and is the main crop grown for green fodder. Corn cultivation is widespread throughout India, but Uttar Pradesh and Bihar are the chief producing areas. The crop is of special importance in the hilly and submontane areas, where it is the staple food. Barley is an important cereal in northern India, especially in Uttar Pradesh. It can be grown with little water and is often planted as a substitute crop if bad weather has prevented the planting of wheat. Millet is the staple food of the rural population in many areas where rice and wheat are not grown or are too high-priced for the poor. Millet, like barley, is often grown as a catch crop. Pearl millet, known locally as *bajra*, follows grain sorghum in importance as a coarse grain and is grown mainly in northwest India. Finger millet, or *ragi*, is grown mainly in the south.

Pulses, including various types of peas and beans, are among the principal sources of protein in the Indian diet and account for about 10% of foodgrain production. Since these crops need only moderate rainfall and can be grown in relatively poor soil, they are grown in all parts of the country. Production of pulses is less than 12 million tons annually. The government has attempted to expand pulse production by stepping up research on some pulses, soybeans in particular. Chickpeas are the most commonly grown pulses in India and are produced mainly in Uttar Pradesh, Punjab, Madhya Pradesh, and Rajasthan. Pigeon peas, or *tur*, are grown and consumed primarily in southern India.

Oilseed crops occupy about one-tenth of the total cultivated area in India and provide both edible and industrial oilseeds. The major oilseeds are peanuts, sesame seed, rape seed and mustard seed, linseed, and castor seeds. Total oilseed production was estimated at 8.3 million tons in crop year 1971/72, compared to 9.2 million tons in 1970/71 (Figure 10).

India is the world's leading producer of peanuts, accounting for about one-third of world output. In crop year 1972/73, 4.3 million tons were produced, down from 6.1 million tons in 1970/71. Peanuts are grown mainly in Gujarat and Tamil Nadu and are cultivated primarily for oil. The oil is used for cooking, either directly or after conversion into *vanaspati* (hydrogenated oil). Large quantities of peanut oil cakes and meal are exported, principally to East European countries. India also is the world's largest producer of sesame seed, accounting for 24% of world output. Sesame seed is grown in most states and is an important oilseed for domestic consumption, especially in north-central and northeastern India. India is one of the world's leading sources of castor oil, and the second-largest producer of castor seeds, which are cultivated mainly in Andhra Pradesh. India is the world's fifth-largest producer of flaxseed, accounting for 10% of world output in 1970. Flax is grown primarily for linseed oil rather than fiber and is cultivated principally in Madhya Pradesh and Uttar Pradesh.

As a producer of sugarcane, India has ranked first in the world since crop year 1958/59, and accounted for 23% of the world output in 1970. Sugarcane is an important cash crop, and the sugar processing industry ranks after textiles as the second-largest industry in India. More than 68% of the sugarcane crop is produced in Uttar Pradesh, Maharashtra, Tamil Nadu, and Andhra Pradesh; with more than 42% being produced in Uttar Pradesh alone. Cane grows best in areas with a substantial supply of irrigation water; about three-quarters of the cane acreage is irrigated. Yields of about 21 tons per acre were recorded in 1971/72, compared to 37 tons per acre in the United States. Sugarcane production expanded from 61 million tons in 1956/57 to a record 138 million tons in 1969/70, but subsequently declined to 125 million tons in 1971/72, mainly as a result of lower cane prices and adverse weather in the major producing areas. About one-fourth of the total cane output is refined into centrifugal sugar; the remainder is used to produce lower quality brown sugar (*gur*) and semiwhite sugar (*khandsari*).

India's livestock population includes the largest number of cattle and buffaloes of any country in the world—19% of the world total. The quality of most animals is low, however, because of poor breeding, feeding, and management practices. Cattle and buffaloes, estimated at 232 million head in 1971, are the major sources of motive power available to the average cultivator. They are also a source of fuel, fertilizer, hides, and milk and dairy products, which supply most of the animal protein consumed by India's predominantly vegetarian population. Cattle slaughter is restricted in most parts of India because of Hindu religious beliefs that hold cows to be sacred. As a result, the cattle population includes large numbers of old and unproductive animals. These animals consume an estimated one-third of India's already scant feed supply, and many are stray cattle that seriously menace crop production. Goats and sheep furnish the greater part of India's meat output, as well as some milk, wool, hair, and skins for local use and export. In 1971, goats numbered about 68 million head and sheep 44 million head. India's poultry population averages only about one fowl to each three persons, and per capita egg consumption was only about eight per year.

FIGURE 10. Non-foodgrain crop production (U/OU)
(Million metric tons)

CROP YEAR*	OILSEEDS**	SUGARCANE	JUTE AND MESTA	COTTON	TEA
1964/65	8.5	122.0	1.1	1.0	0.4
1965/66	6.4	118.0	0.8	0.9	0.4
1966/67	6.4	92.8	1.0	0.9	0.4
1967/68	8.2	96.9	1.4	1.0	0.4
1968/69	7.4	120.0	0.7	1.1	0.4
1969/70	7.6	137.8	1.2	0.9	0.4
1970/71	9.2	131.9	1.1	0.8	0.4
1971/72	8.3	125.0	1.2	1.3	0.4
1972/73	*na*	*na*	1.0	1.1	*na*

na Data not available.
*1 July–30 June.
**Includes peanuts, sesame seed, rape, mustard, and flaxseed.

India was the world's fifth-largest producer of milk in 1970, but the quantity produced per animal and the consumption per capita were both extremely low. Milk production in 1971 was estimated at 24 million tons, or about 4.1 ounces per capita per day. Milk buffaloes, although less than half as numerous as milk cows, contribute more than one-half of the total milk output. A dairy cow in most developed countries matures in about 24 months, but Indian cows and buffaloes take 36 to 48 months to mature, and they subsequently produce less milk. About 40% to 45% of the available milk supply is consumed in liquid form, while the remainder is converted into cottage-type dairy products such as *ghee* (clarified butterfat) and *dahi* (yogurt).

India is the world's third-largest producer of hides and skins, but the ratio of hides produced to total livestock population is one of the lowest in the world and quality is seriously reduced by the poor quality of the stock. In addition, with the continued ban on cattle slaughter, most of the raw cattle and buffalo hides are obtained from animals that die from natural causes (especially disease and starvation), while about 80% of sheepskins and goatskins come from slaughtered animals. Exports of unprocessed skins, tanned hides, and leather manufactures amounted to $120 million in FY1971/72, or about 6% of the value of India's exports.

d. Commercial crops

India produces a surplus of commercial crops that are important contributors to the country's foreign trade. The principal crops in this group are jute, cotton, and tea. Processed jute, cotton textiles, and tea accounted for about one-third of total export earnings in FY1971/72.

The bulk of the world jute supply is produced in India and Bangladesh (formerly East Pakistan). Bangladesh is a major exporter of both raw jute and jute manufactures, while India exports jute products almost exclusively, principally jute sacking, hessian cloth (a fabric used for the manufacture of bags), and carpetbacking. Jute goods are India's largest export, accounting for about 17% of total exports in FY1971/72. At the time of partition in 1947, all the jute mills were in India, while the principal jute-growing areas were in East Pakistan. India gradually expanded its jute area from 642,500 acres to 2,186,000 acres by crop year 1967/68. Since then, however, acreage has declined because of alternating floods and droughts, and it totaled only 1,853,000 acres in 1970/71. From a record 1.2 million tons in 1967/68, jute production declined to 1.0 million tons in 1971/72. Serious drought conditions in major growing areas was expected to reduce the 1972/73 crop to an estimated 800,000-900,000 tons. Jute is sown between March and May, and harvested between July and September. It is grown in rotation with other crops because of its soil-exhausting properties. Natural conditions do not permit the cultivation of high quality jute in India. The country is therefore dependent on Bangladesh for high quality jute to mix with domestic jute to manufacture good quality jute products.

Jute supplies are supplemented by mesta, a vegetable fiber that is processed in almost the same way as jute but yields a weaker yarn. The jute mills use mesta in an admixture with jute. Mesta production expanded from less than 125,000 tons in crop year 1954/55 to 288,000 tons in 1964/65. Like jute, mesta production in the last few years has been erratic because of drought and floods. Production was only

140,000 tons in 1971/72 and probably declined somewhat in 1972/73 because of drought.

India plants almost one-fourth of the world's cotton acreage but accounts for only 10% of world production. Despite a rise in average yields from about 118 pounds of lint cotton per acre in crop year 1970/71 to 145 pounds in 1971/72, yields are extremely low compared to those in the United States (438 pounds) and Pakistan (355 pounds). India exports short-staple cotton and imports long-staple cotton.

Cotton is grown mainly as a dryland crop, and mixed cropping of cotton with other crops such as pulses and oilseeds is common. The major portion of the cotton crop is sown between March and August and harvested between September and April. The principal producing states are Maharashtra, Gujarat, Punjab, Madhya Pradesh, Andhra Pradesh, and Mysore. The total area under cotton has remained more or less constant since 1955, after an upward trend in the early 1950's. Cotton acreage in crop year 1971/72 was estimated at about 19 million acres, of which only about 15% was irrigated. Production in 1971/72 was at a record level of 1,260,000 tons, compared to 820,000 tons in 1970/71. The large increase is explained by more favorable weather conditions and a rapid expansion of improved long-staple varieties.

India is the world's largest tea producer and vies with Sri Lanka (Ceylon) for first place as a tea exporter. In crop year 1970/71, tea production amounted to a record 422,000 tons as a result of favorable weather and the absence of labor troubles, which had plagued the industry earlier. Tea exports in that year totaled 208,000 tons, valued at $198 million, or 10% of India's exports. India's share of world tea production, however, fell from 43% in 1955 to 38% in 1970, despite rising output. Indian teas are not of a uniform high quality, and Sri Lanka and East Africa have made inroads into India's traditional export markets. In addition, a more favorable investment climate in Africa has made the Indian tea industry less attractive to foreign investors. Indian tea is cultivated in hilly tracts up to an altitude of about 7,000 feet. Principal growing areas are Assam and the northern part of West Bengal in the north, and Kerala and Tamil Nadu in the south. Tea is grown mainly on plantations, a large number of which are owned by foreign interests—mainly British. Some foreign owners have moved their operations to Africa.

India is the world's major producer and exporter of licit opium; licit opium production was about 940 metric tons (with 10% moisture content) in crop year 1970/71. During the previous two decades, India had expanded production rapidly to supply additional legal export markets, after Iran and Turkey cut back production. As a result, India's share of legal opium exports increased from 31% in 1950 to 83% in 1969, and is continuing to increase. As part of its control system, the government determines how much land is to be planted to opium poppies and restricts production to contiguous plots in designated areas. Licenses are granted on the basis of productivity, and the government requires that opium poppy latex be sold to the government at predetermined prices. To facilitate control, opium production is authorized in only two areas—a small area in the Ganges River valley, and another on the Malwa Plateau; the latter has long been an important opium-producing area and normally accounts for about 85% of total legal opium output. In 1969, licit opium yields in India were 150% higher than in Turkey and more than 200% higher than in Iran and Pakistan. Opium export earnings represent less than 1% of India's total export earnings. Indian opium is not believed to be significantly involved in the international illic.. opium market, nor is there any evidence that heroin is being produced in India.

Several other Indian commercial crops are important in world markets, although they are only minor contributors to the country's foreign trade. India is the world's leading producer and exporter of cashew nuts, which are grown mainly on the west coast. Local production has been supplemented by large imports of raw cashew kernels; the processing of raw cashew nuts is a manual task suited to the Indian labor market. However, the introduction of cashew peeling machinery in other countries is infringing on India's dominance. India is also a leading producer of spices; it has a virtual monopoly on the production of cardamom and accounts for about 85% of total world exports of dry ginger. Other important domestic spices are turmeric, coriander, cinnamon, cloves, and nutmeg.

c. Fisheries

India's fishing industry is underdeveloped. About 1.9 million tons of fish and shellfish were landed in FY1971/72. Fish is a major source of protein for much of the population, yet the annual consumption level is less than 10 pounds per capita, compared to 37 pounds in Sri Lanka. Marine waters yield about 65% of the Indian catch, and the remainder comes from the country's extensive river systems and other inland waters. Most of the marine catch is made along the west coast, which is favored by a calm surf and a wide continental shelf.

Most fishing is still done by individual fishermen paddling or sailing small craft in coastal waters. A shortage of motorized fishing craft and deep sea trawlers is the major handicap to increased marine landings. The government has made only modest efforts to make small motorized craft available to private fishermen. Exports of marine products are small in quantity but are rising in value. In FY1971/72, marine exports were valued at $55 million, compared to $30 million in FY1968/69. The Indian government has established six centers for training fishermen in the use of mechanized fishing methods. In addition, the state governments are conducting training courses for fishermen at 16 centers.

f. Forestry

About 19% of India, or about 154 million acres, is covered by forests, which are located in various parts of the country; only about 15% of the forests are inaccessible by either rail or road. In the heavily populated areas, forests have been abused by overcutting, overgrazing, and burning. The total quantity of timber in these forests has been estimated at 2.9 billion cubic meters, and annual timber removals are estimated at 19 million cubic meters, of which about 75% is fuelwood and 25% is industrial wood. The forests consist primarily of broadleaf species mixed with extensive stands of bamboo. Bamboo, common throughout India, is the chief source of paper pulp and is a very important building material in rural areas. India is a net importer of forest products, particularly roundwood and woodpulp. The states hold title to all the publicly owned forest land, but the Central Board of Forestry—composed of state and central government officers—coordinates forest policies, programs, and research among the states and the central government. Priority is given to afforestation and reforestation and to constructing new or improved roads to open up inaccessible forests.

2. Fuels and power (C)

India still relies heavily on noncommercial fuels, such as cattle dung, fuelwood, and agricultural wastes, which account for about half of its total energy consumption. Coal and lignite account for about 60% of commercial fuel consumption, liquid fuels 25%, and hydroelectric and nuclear power 15%. Domestic resources provide all the coal, lignite, and noncommercial fuels. In contrast, 60%-65% of the liquid fuels consumed are imported either as crude petroleum or refined petroleum products.

The country's coal reserves were estimated at 80.9 billion tons in 1971. About 68% of the reserves are located in Bihar and West Bengal, followed by Madhya Pradesh with nearly 20% of the total (Figure 2). In 1971, coal production totaled 69.1 million tons and lignite production, 3.7 million tons. About 73% of the coal mined in 1971 came from private mines, all of which were taken over by the government in January 1973. All of the coal produced in India, except the lignites produced in Tamil Nadu and Rajasthan, is bituminous. About one-fourth is coking coal, which occurs mainly in West Bengal and Bihar. Coal and coke exports in FY1971/72 declined sharply, to 173,000 tons, compared to 532,000 tons in FY1970/71 and 1.2 million tons in FY1964/65. The post-1964 decline was due largely to the suspension of trade with Pakistan. Further coal export declines in 1970 and 1971 were caused mainly by labor disturbances in the country's steel mills and in the coal industry itself. The shortage of rail cars during peak shipping periods and growing competition from other fuels, helped depress the coal industry in 1971. Undelivered stocks, which had built up from a normal level of about 6 million tons prior to 1969 to an all-time high of 8.6 million tons by the end of 1970, were lowered only slightly in 1971 to 8.4 million tons.

Petroleum is being used increasingly to supplement coal as a source of commercial energy. Petroleum consumption since 1950 has increased at an average annual rate of 9%, and totaled 18.5 million tons in 1971. Intensive exploration efforts have established proved crude oil reserves of 127.5 million tons, of which 53% are located in Assam and 47% in Gujarat. In 1971 these reserves were equivalent to more than 17 times the annual domestic crude oil production of 7.3 million tons, but only seven times annual consumption of petroleum products. Natural gas reserves total 51 billion cubic meters. All oil exploration and most crude petroleum and natural gas production in India are conducted by Oil India, Limited—owned jointly by the Indian Government and the British-owned Burmah Oil Co.—and by the government's Oil and Natural Gas Commission (ONGC). Oil India confines its activities to Assam and Arunachal Pradesh, while ONGC operates throughout the country. Almost two-thirds of India's crude petroleum requirements must be imported. In 1971, domestic production provided only 37% of the 19.6 million tons of crude petroleum delivered to India's nine refineries. India's share of an offshore petroleum concession in Iran yielded about 600,000 tons of crude in 1971, but India sold the share to France because Indian refineries could not process this type of petroleum with their present technology.

India's onshore search for petroleum has proceeded slowly with no recent major discoveries; its first offshore shallow-water drilling in the Gulf of Khambhat (Cambay), performed with Soviet help, proved fruitless. In 1971 New Delhi contracted with U.S. and Japanese petroleum companies to provide equipment and technical assistance for deep-water drilling in the Gulf of Khambhat. Drilling, however, had not started by April 1973.

Refining capacity has increased sharply since 1953, when there was only one refinery with an annual capacity of 440,000 tons. At the end of 1971, India's nine refineries had a combined annual capacity of about 22 million tons (Figure 11). About 60% of the capacity was owned entirely or jointly by the government, in contrast to 100% private ownership in the early 1960's. A sixth public sector refinery, built at Haldia with French and Romanian assistance, was scheduled for completion in 1972. Since 1958, the government has frozen the licensed capacity of the private refineries, and since 1964 it has restricted private refinery production in order to encourage public sector development. The output of public sector refineries increased to 10.5 million tons in 1971, compared with 1.4 million tons in 1965. When the publicly owned refineries were unable to meet India's emergency war needs in 1971, however, the four private refineries were requested to expand their output quickly. They increased their 1971 production by 11%, to 8.0 million tons, about the same level as in 1965.

India's electric power industry is incapable of fulfilling minimum requirements. The growth rate of power development has been far less than the accompanying increase in power requirements. During 1972, the power supply was further aggravated by a drastic drop in hydroelectric output because of inadequate rainfall and by below capacity operation of many thermal powerplants due to a shortage of coal and frequent breakdowns as a result of poor maintenance. Present power shortages are expected to continue for the next several years and have adverse effects on industrial output and national economic growth.

In March 1972 total installed electric power capacity was 17,800,000 kilowatts (kw.), of which about 60% was thermal and almost all the remainder hydroelectric; nuclear power accounted for 2%. Production of electricity during 1972 amounted to approximately 66 billion kilowatt-hours (kw.-hr.), a per capita output of only 120 kw.-hr., compared to more than 8,000 kw.-hr. in the United States. The 1972 installed capacity was almost 800,000 kw. less than that scheduled by the Fourth Five Year Plan (FY1969/70-FY1973/74), reflecting lengthy construction delays at nearly all major development projects.

FIGURE 11. Refinery capacity and output, 1971 (U/OU)

NAME/LOCATION	YEAR BEGAN OPERATION	INSTALLED THROUGHPUT CAPACITY	OUTPUT OF PETROLEUM PRODUCTS
		Million tons	*Million tons*
Private:			
Assam Oil Company/Digboi, Assam	1900	0.6	0.4
Esso/Bombay	1954	3.3	2.7
Burmah Shell/Bombay	1955	3.7	2.7
Caltex/Vishakhapatnam, Andhra Pradesh	1957	1.5	1.2
Total private		9.1	8.0
Public (including public-private):			
Gauhati/Gauhati, Assam (built with Romanian aid)	1962	0.8	0.7
Baruni/Baruni, Bihar (built with Soviet aid)	1964	3.0	2.1
Koyali/Koyali, Gujarat (built with Soviet aid)	1965	3.6	3.5
Cochin/Cochin, Kerala (52.4% government-owned; built and managed by Phillips Petroleum Co.)	1966	2.7	2.3
Madras (74% government-owned; built and managed by American International Oil)	1969	2.5	1.9
Total public		12.6	10.5
Total all India		21.7	18.5

Principal factors that have contributed to the inadequate electricity supply are poor planning, limited domestic support resources, and poor project scheduling and execution. At the same time, the industry is heavily dependent on outside sources for equipment and funding. The United States has been the principal single contributor, having aided in the construction of powerplants comprising approximately one-third of the total installed capacity. Other important suppliers are the Communist countries, mainly the U.S.S.R. The growth of India's electric power industry is further complicated by the absence of a national approach to development. Emphasis has been on statewide expansion, leading to the formation of a large number of inefficient local systems and resulting in the uneconomical use of available resources.

Approximately 80% of the electric power capacity is in public utility plants owned by the individual states or by the central government. Overall control of the power industry is exercised by the Ministry of Irrigation and Power, which performs its functions largely through the Central Water and Power Commission and the Central Electricity Authority. The latter supervises the functions of five Regional Electricity Boards, coordinating power development in individual states on a regional basis. The remaining capacity is in private utilities and in captive industrial powerplants.

Approximately 55% of the national capacity is contained in 28 powerplants of at least 200,000 kw. each, only four of which exceed 500,000 kw. The remaining capacity is in a large number of smaller installations, many of them old and inefficient, which significantly increases the overall cost of electricity production.

Most of the new large thermal powerplants burn coal. They are located at the coal mines rather than at the centers of electric power consumption, as was common in the early development stages. This practice eliminates the problem of transporting coal and reduces the cost of power production. Among the larger thermal plants located at the principal power consumption centers are Trombay (337,500 kw.) at Bombay, Bandel (330,000 kw.) near Calcutta, Indraprastha (279,100 kw.) at Delhi, Ennur (220,000 kw.) near Madras, and Sabarmati (217,500 kw.) at Ahmadabad. Principal thermal installations located at coal mines are Neyveli (600,000 kw.), one of the few thermal plants located in the southern part of the country; and other plants in the east-central coal producing area, including Chandrapura (420,000 kw.), Satpura (312,500 kw.), Korba (300,000 kw.), Patratu (300,000 kw.), and Durgapur Waria (290,000 kw.). The thermal power group also includes the country's first nuclear powerplant, Tarapur (380,000 kw.), completed in 1969 and powered by boiling water-type reactors of U.S. manufacture.

Hydroelectric powerplants are frequently of modern design and include multi-purpose projects for power, irrigation, flood control, and navigation. Plants are also situated in series in the same river basin to permit integrated operation. Among the largest hydroelectric plants are Bhakra Right Bank (600,000 kw.) and Bhakra Left Bank (450,000 kw.) which, together with two smaller plants of 77,000 kw. each, form the largest integrated multipurpose power facility in India. The four plants are fed by the same reservoir and operate in unison in supplying power. Other important multipurpose projects are Sabarigiri (300,000 kw.) and Mettur Tunnel (200,000 kw.). Principal hydroelectric plants designed exclusively for power production are Sharavathi (712,800 kw.), the largest powerplant in the country, Koyna (540,000 kw.), and Rihand (300,000 kw.). Powerplants of 200,000 kw. and over, existing and under construction or expansion, are listed and located in Figure 12, which also shows principal transmission lines and boundaries of the five Regional Electricity Boards.

India's electrical transmission facilities are poorly developed and consist essentially of rudimentary individual state networks, which eventually are to be interlinked into a national grid. These are being integrated gradually into regional supply systems. The lack of an adequate transmission network is one of the chief weaknesses of the electric power industry, prohibiting wider distribution of electricity and, on occasion, limiting utilization of available capacity. Transmission shortcomings place severe restrictions on power transfers and contribute considerably to the chronic supply difficulties.

Electric power consumption is heavily concentrated in the principal industrial and urban areas. Despite government emphasis on rural electrification, particularly since 1965, less than 20% of the country's villages are electrified. Nearly one-half of the national power consumption is concentrated in the states of Bihar, West Bengal, and Maharashtra, which contain major urban and industrial centers, especially Bombay and Calcutta, and a large industrial concentration in the Damodar River valley. On a nationwide basis, nearly 75% of the available power is consumed by industry and about 16% is equally divided between household and agricultural use. Most of the remaining power is utilized by commerce and transportation, and a small amount by public utilities and for lighting.

The Fourth Five Year Plan called for an increase in national power capacity to 23.1 million kw. by the end of the plan period in March 1974. The target figure is considerably less than the 26 million kw. originally suggested by the Ministry of Irrigation and Power, reflecting the shortage of resources and funds. Moreover, it is extremely unlikely that national power capacity will exceed 20 million kw. by the plan's end. This was the first development plan to place strong reliance on locally produced powerplant equipment, which was to account for over one-half of the planned additional capacity. The domestic power equipment industry, however, is in the early stages of production and its inability to meet delivery schedules has caused construction delays. The development program includes two additional nuclear powerplants, Rana Pratap Sagar (400,000 kw.) and the first stage of Kalpakkam (200,000 kw.). The first 200,000 kw. unit in the Rana Pratap Sagar plant became critical in August 1972 and is expected to begin commercial operation in 1973.

Recognizing the need for comprehensive planning, the Ministry of Irrigation and Power formulated a long-range power development scheme. The program specifies an increase in national capacity to 52 million kw. by March 1981, with an intermediate target of 35 million kw. by March 1977. Considering past performance, both goals are unrealistic. Achievement of the planned capacity would require greatly accelerated construction and use of large imported generating units.

3. Metals and minerals (U/OU)

Mining and quarrying account for about 1% of India's GNP. Indian iron ore reserves account for about 25% of the world's known deposits; recoverable high-grade iron ore reserves were estimated in 1971 at 22 billion tons, the largest in Asia. Manganese deposits were estimated at 108 million tons containing 30% or more metal, the third-largest reserves in the world. India is the world's leading producer and exporter of strategic mica, which is valuable for its dielectric properties. It is also an important producer of ilmenite and monazite. The latter is India's greatest nuclear fuel resource. The monazite deposits located in southwest India are among the largest in the world. Uranium occurrences have been recorded in every state, but deposits are low grade by world standards and recovery costs are high.

Bauxite reserves are sufficient to meet domestic requirements. The country's output of major nonferrous metals such as copper, lead, and zinc continues to lag behind demand, and known exploitable reserves have not been adequately developed. No workable deposits of nickel, tin, bismuth, mercury, cobalt, molybdenum, or platinum have been discovered. India is also deficient in a few important nonmetallic minerals such as asbestos, borax, fluorite, phosphate rock, and sulfur. Figure 4 shows the distribution of major mineral deposits.

As a result of India's industrialization program and the continuing rise in world mineral prices, the value of mineral production in India more than doubled between 1960 and 1969, and reached a record US$531 million; coal and lignite accounted for about two-thirds of the total. In 1970 and 1971, however, production declined slightly, due largely to a decrease in coal output. The total value of mineral production in 1971 was $516 million. Exports of mineral ores, concentrates, and metals (including diamonds) totaled $366 million, or 18% of India's total exports in FY1971/72. Of this amount, iron ore exports alone accounted for 38%.

The major part of India's mineral industry is publicly owned, and it is operated by official agencies such as the Geological Survey of India and the Indian Bureau of Mines and by various public sector enterprises. The authority for granting mineral concessions is vested in the state governments, but prior approval of the central government is required in all matters relating to the exploitation of minerals considered necessary to the domestic economy. Public companies have been established to mine and process copper and zinc, and to mine pyrites and iron ore. Private ownership predominates in the older, more established mining fields, such as iron and aluminum, where private industry was already well established before independence. The sphere of influence of the government-owned Minerals and Metals Trading Corporation of India has grown rapidly since its formation in 1963. The corporation has a monopoly on the export of iron ore, coal, and manganese, and shares the export of other minerals with the private sector.

a. Iron ore

Iron ore is India's leading exportable mineral resource and the principal raw material for its iron and steel industry, which is described in this chapter under Manufacturing and Construction, below. Reserves appear to be more than sufficient to meet present and future domestic requirements. There are recoverable iron ore reserves in virtually every state, but the more important deposits are located in Goa, Orissa, Bihar, Mysore, Maharashtra, and Madhya Pradesh. In 1971, some 299 iron ore mines were operating throughout

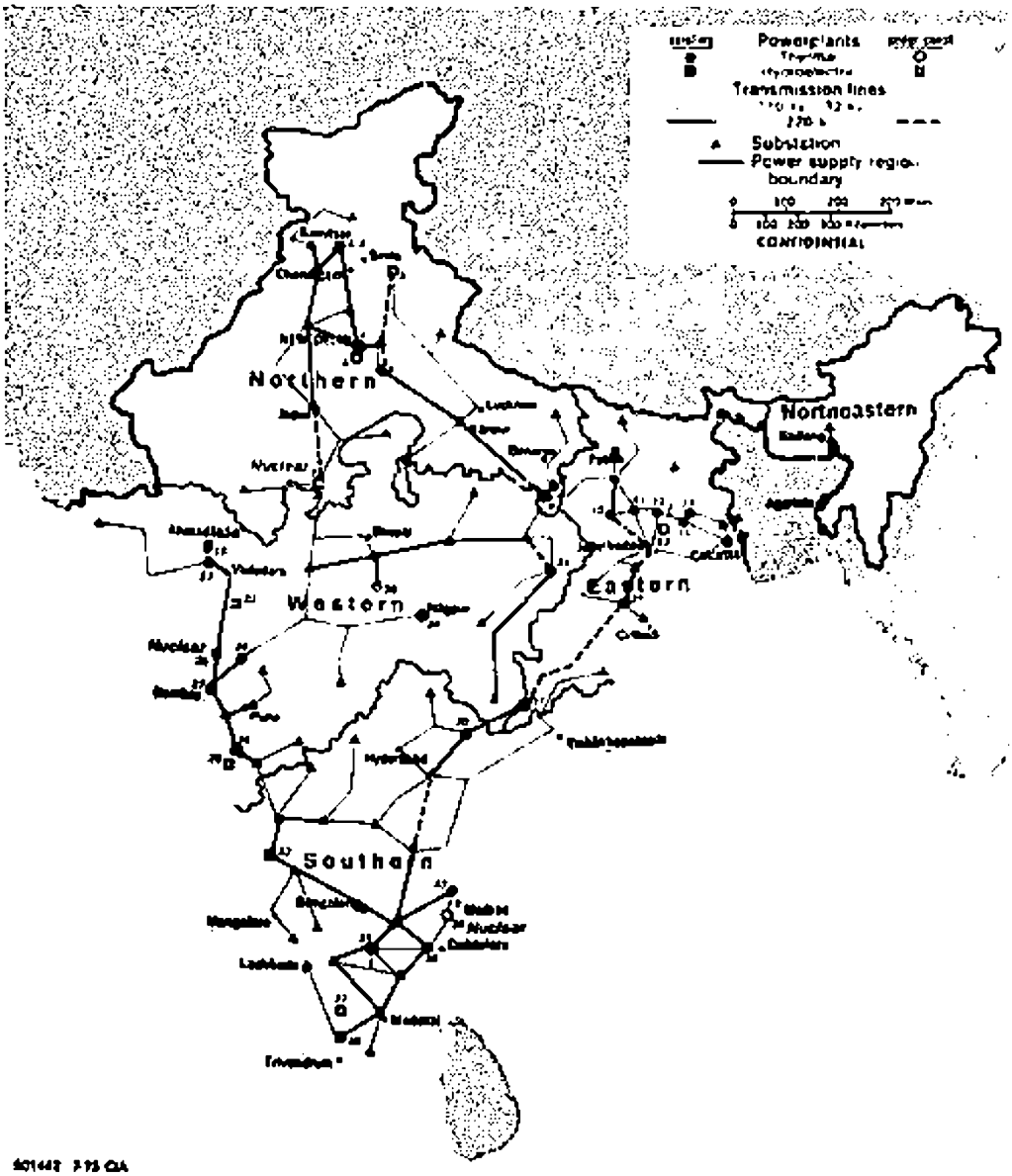

FIGURE 12. Electric power: powerplants 200,000 kw. and over, existing and under construction or expansion, with identified capacity by March 1974 (C)

MAP REF. NO.	IDENTIFICATION	INSTALLED CAPACITY MARCH 1972	SCHEDULED CAPACITY MARCH 1974
		- - - - - - kw.	- - - - - -
1	Bhakra Right Bank (h)	840,000	[illegible]
2	Bhakra Left Bank (h)	430,000	460,000
3	Yamuna Chibro (h)*	...	240,000
4	Delhi Indraprastha (t)	279,100	334,100
5	Delhi Badarpur (t)*	...	[illegible]
6	Harduaganj (t)	300,000	410,000
7	Rana Pratap Sagar (n)*	...	400,000
8	[illegible] (t)	250,000	550,000
9	Rihand (h)	300,000	300,000
10	Patratu (t)	[illegible]	620,000
11	[illegible] (t)	225,000	225,000
12	Chandrapura (t)	420,000	[illegible]
13	Santaldih (t)*	...	240,000
14	Durgapur Coke Oven (t)	[illegible]	265,000
15	Durgapur Works (t)	[illegible]	[illegible]
16	Bandel (t)	[illegible]	330,000
17	Calcutta Cossipore (t)	301,000	[illegible]
18	Ahmedabad Sabarmati (t)	217,000	217,000
19	Dhuvaran (t)	[illegible]	[illegible]
20	Satpura (t)	312,500	312,500
21	Korba (t)	300,000	300,000
22	Talcher (t)	240,000	[illegible]
23	Ukai (h)*	...	300,000
24	Koradi (t)*	...	[illegible]
25	Tarapur (n)	[illegible]	[illegible]
26	Nasik (t)	[illegible]	[illegible]
27	Trombay (t)	337,500	337,500
28	Koyna-1 (h)	[illegible]	540,000
29	Koyna-2 (h)*	...	[illegible]
30	Kothagudem (t)	240,000	[illegible]
31	[illegible] (h)*	...	[illegible]
32	Sharavathi (h)	712,000	891,000
33	Ennore (t)	[illegible]	[illegible]
34	Kalpakkam (n)*	...	[illegible]
35	Mettur Tunnel (h)	[illegible]	[illegible]
36	Neyveli (t)	[illegible]	[illegible]
37	Idikki (h)*	...	[illegible]
38	Subarigiri (h)	[illegible]	[illegible]

... Not pertinent.
NOTE: t......Thermal powerplant
b......Hydroelectric powerplant
n......Nuclear powerplant
*Under construction.

the country, of which only 24 were in the public sector. All iron ore is mined by open pit methods. Production in 1971 totaled 32.3 million tons compared with 12.3 million tons in 1961. Nearly two-thirds of the iron ore mined is exported. Iron ore was India's third major export in FY1971/72, after jute and tea. In that year iron ore exports totaled 19.9 million tons valued at US$110 million, or 7% of total exports. Due to high internal operating costs, the government subsidizes iron ore exports. Japan purchases close to 80% of India's iron ore exports; most of the remaining sales are to Eastern Europe.

b. Manganese

India currently ranks fourth, behind the U.S.S.R., South Africa, and Brazil, in production of manganese ore. In contrast to the recent major production increases achieved by the three leading producers, however, India's manganese output has generally stagnated for over a decade. The domestic manganese industry consists mostly of many small mines, operated by primitive methods, and located inland where high road and rail freight rates have been a heavy burden. Maharashtra and Madhya Pradesh account for about 80% of the country's production of high-grade ore; major deposits are also located in Orissa, Mysore, and Andhra Pradesh. The private sector operated nearly 300 manganese mines in 1971, while an additional 20 mines were government-operated. Many of the smaller mines are either run by, or contract their ore to the larger producers, who in turn sell the ore to domestic consumers or to the Minerals and Metals Trading Corporation for export. Manganese ore production during 1961-70 ranged between 1.1 million and 1.7 million tons annually, and output in 1971 totaled 1.8 million tons. The major domestic consumers are the iron and steel industry and ferromanganese producers; domestic consumption in 1971 was estimated at 784,000 tons. India traditionally has been an exporter of manganese, but exports have shown a declining trend since 1964 due to the emergence of new sources of supply outside India and the reduced dependence on manganese ore in steel production. In FY1971/72, manganese exports were 1.0 million tons, compared to 1.6 million tons in FY1964/65.

c. Mica

For many years, India has been the world's leading producer and exporter of strategic mica (blocks, sheets, and splittings), a mineral of considerable importance in the electrical industry. The principal mica deposits are in Bihar, Rajasthan, and Andhra Pradesh. The mica industry consists of many small mines, mostly quarries or shallow surface mines. The nature of Indian mica deposits precludes mechanization, and the splitting of mica is done entirely by hand. Output of this commodity is largely dependent on foreign demand and has fluctuated considerably in recent years. Production of crude mica amounted to 31,675 tons in 1971. Mica exports have dropped somewhat in recent years due to the development of synthetics. Exports in FY1971/72 totaled 23,000 tons valued at US$21 million.

d. Bauxite and aluminum

Aluminum production is India's only well-developed nonferrous metals industry. Bauxite, the chief aluminum ore, is widely distributed throughout the country. Major deposits occur in Madhya Pradesh, Bihar, Gujarat, Tamil Nadu, Goa, and Maharashtra; total reserves are estimated at about 156 million tons, of which 60 million tons are high-grade ore (50%-60% aluminum oxide). Bauxite production in 1971 totaled 1.4 million tons, compared with 860,000 tons in 1968 and 400,000 tons in 1960. The more rapid growth of domestic demand caused exports to decline sharply from a record 249,000 tons in FY1962/63 to 28,000 tons in FY1971/72.

The capacity of India's aluminum-producing facilities totaled 177,350 tons in 1971. All production is from its private-sector plants, four of which were being enlarged in 1972. The government is building two large public-sector plants with a combined annual capacity of 150,000 tons. Aluminum has been used increasingly as a substitute for copper, which is in short supply. Aluminum output increased sharply between 1966 and 1971, from 120,100 tons to 178,250 tons. Even with this rapid rise, however, domestic demand still exceeded supply, and India had to import aluminum. The 21,000 tons of aluminum imported in FY1971/72 was more than triple the volume imported in FY1970/71.

e. Copper

Copper production remains insignificant despite large reserves and steadily increasing demand within the country. Total copper reserves, largely in Bihar and Rajasthan, were estimated at about 300 million tons in 1971. India's only copper producer, the privately owned India Copper Corporation, reported copper ore production of 640,845 tons and copper metal production at its Chatrile, Bihar, smelter of 9,678 tons in 1971—a level equal to about 1% of total estimated demand. The government took over the company's mining operations in early 1972. A new 16,500 ton-capacity smelter went into trial production at the refinery at the beginning of 1972. A second refinery, owned and operated by the government, is under construction at Khetri, Rajasthan, but it is not likely to begin production until 1975. Copper is India's leading mineral and metal import; the US$31 million worth of copper products imported during FY1971/72 represented 14% of total mineral and metal imports.

f. Gypsum and limestone

The basic ingredients of cement—gypsum and limestone—are in adequate supply in India. Recoverable gypsum reserves are estimated at 1.2 billion tons, 90% of which are located in Rajasthan. Gypsum output totaled 1.1 million tons in 1971. In addition to its use in the cement industry, gypsum is

used in the ammonium sulfate fertilizer industry. Limestone, the primary ingredient in cement manufacture, is found largely in sedimentary rock formations in the Himalayan foothills, although deposits are known to exist in all states except Kerala, Goa, Manipur, and Nagaland. Existing deposits of high-grade limestone have not been fully surveyed, but the tracts scheduled for exploitation are far in excess of the country's requirements for many years. Limestone production was 24.5 million tons in 1971. A long-awaited upswing in building construction caused India's cement output to rise 9% in 1971 to 14.9 million tons; 193,000 tons of cement were exported in FY1971/72.

4. Manufacturing and construction (U/OU)

The structure of India's industrial base has changed dramatically since 1950, reflecting the nation's efforts to develop heavy industry. In 1951, more than 60% of the value added by manufacturing came from small-scale, family-type enterprises, but by the early 1970's, 60% came from factories with fixed assets of Rs750,000 (US$100,000) or more. At the same time, the share of cotton textiles, jute manufactures, and food processing industries declined from almost two-thirds to little more than one-fourth of the total value of manufacturing output (Figure 13). Machinery, equipment, and chemicals increased from less than one-tenth of total manufacturing output to almost one-third of the total.

Since independence, India's industrial policies have been directed toward the planned development of industries and their regulation in the public interest. In 1956, the government adopted "progress toward a socialist economy" as a national objective and since then has favored expansion of the public sector in most primary industries, transport, and the capital equipment and chemical industries. The defense industries, atomic energy, iron and steel, machine tool manufacture, mining of several major minerals, and the principal utilities are reserved for public ownership exclusively. The public sector will expand its activity in a number of other industries, but private enterprise will continue to supplement government efforts to develop them. These industries include some mining, aluminum and other nonferrous metals processing, ferroalloys and tool steels, many basic chemicals, fertilizers, and road and sea transport. All industries not specifically included in these two groups are to be left to private enterprise. As a result of the government's socialist policies, the public sector has grown more rapidly than the private sector, and now contributes about 20% of manufacturing output. Furthermore, the government exercises considerable control over the private sector through licensing regulations, financial assistance, and foreign exchange allocations.

FIGURE 13. Structure of industrial production (U/OU)
(Percentages of total value of output)

	1950*	1960*	1971*
Cotton textiles	39.7	24.9	14.6
Jute manufactures	6.8	4.7	2.5
Food processing	17.2	14.2	12.0
Electrical machinery	1.6	3.6	8.1
Chemicals	4.0	8.6	12.1
Iron and steel	9.7	7.3	7.6
Nonelectrical machinery	0.8	4.0	8.4
Transport equipment	2.0	9.2	6.3
Other	18.2	23.5	28.4
Total	100.0	100.0	100.0

*Calendar year.

The government's industrial development policy is implemented through economic plans, which establish production goals for both the public and private sectors. The Second Five year Plan (FY1956/57-1960/61) placed major emphasis on rapid industrialization—in particular, on the expansion of the iron and steel industry and other basic capital goods industries—and earmarked 27% of total government and private investment for industry. Although industrial output failed to meet plan goals, it increased by an average of about 7% a year. The Third Five Year Plan (FY1961/62-1965/66) emphasized the continued development of basic capital and producer goods industries, especially machine building. Progress was made in relieving two major bottlenecks: inadequate transport facilities—especially railroads—and inadequate electric power. Industrial growth averaged about 9% annually during the Third Plan period, a significant achievement but still below the 11% goal. The shortage of maintenance imports during the Third Five Year Plan, particularly evident in 1965, caused serious underutilization of industrial capacity and delayed expansion programs. A recession began in 1966, and production declined for 2 successive years (Figure 14). Lower production in the food and textile industries, resulting from droughts and accompanying sharp reductions in agricultural production in 1966 and 1967, contributed substantially to the decline. Agricultural crops normally provide the raw materials for about 50% of total industrial production. With the recovery of agriculture in 1968, industrial production rose by 6.4% in that year and 7.1% in 1969. Industrial growth in 1970 and

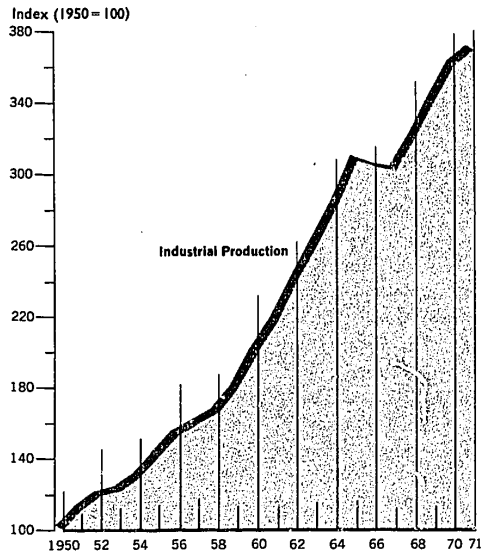

FIGURE 14. Index of industrial production (U/OU)

1971 averaged less than 4% annually—far below the 9.3% annual growth rate called for in the Fourth Five Year Plan (FY1969/70-1973/74).

The industrial slowdown in 1970-71 resulted from a variety of factors. Shortages of cotton and sugar slowed growth in important processing industries. Failure to bring the new steel plant at Bokaro into production, and labor and management problems at several other mills, caused steel production to stagnate. Steel shortages—especially finer quality steels—reduced production in steel-consuming industries such as engineering goods and transport equipment. The government in its mid-term plan appraisal report in 1971 also blamed inadequate investment and resulting capacity constraints for the unsatisfactory growth rates.

a. Textiles and jute products

The textile industry, although declining in importance, is still India's largest industry. It includes the manufacture of cotton, jute, woolen, silk, and rayon textiles, and hosiery and knitwear. The production of most textiles is more than adequate to meet domestic requirements, and textile exports are a leading source of foreign exchange.

The manufacture of cotton textiles is still India's largest industry in terms of employment and output and the third-largest foreign exchange earner, after jute and tea. India is the world's second-largest cotton yarn producer (after the United States), the fourth-largest cotton cloth producer (after the United States, the U.S.S.R., and China), and the third-largest cotton textile exporter (after Japan and Hong Kong). The cotton textile industry is composed of the large-scale mill or organized sector, which produces both yarn and cloth, and the small-scale or decentralized sector, which produces cloth mainly from yarn bought from the spinning mills. At the beginning of 1972, there were 670 cotton textile mills with about 18.1 million spindles and 208,000 looms, employing almost 900,000 persons. Most of these mills are located in Maharashtra, Gujarat, and Tamil Nadu. The mill sector needs rehabilitation, because about half of the machinery in use is at least 40 years old and productivity per loom has declined accordingly. The small-scale sector employs an estimated 6 million persons, including 3 million part-time workers, and operates about 2.8 million handlooms and 150,000-175,000 power looms. In FY1970/71 about 47% of cotton cloth production was in the small-scale sector, compared to 19% in FY1950/51.

In FY1971/72 cotton cloth production amounted to 7.5 billion meters, of which about 53% was produced in the organized mill sector (Figure 15). Small-scale sector production has risen 68% since FY1960/61, while mill sector output fell 13%. The finances of many mills were severely strained in the early 1970's by shortages of cotton, rising production costs, high credit costs, and strikes. Government restrictions on the mill sector, in the form of quotas, taxes, and price controls, further aggravated the financial problems in that sector. In June 1971, mill failures reached a peak, when 65 mills were closed, but takeovers by the public sector and some easing of the cotton shortage reduced the number of failures to 57 by the end of the year. The government-owned National Textile Corporation, formed in 1969, took charge of 45 "sick" private mills.

India's cotton textile industry has encountered increased competition in traditional Asian and African markets, and cotton fabric exports in 1971 were 42% lower in volume than in 1960. The United Kingdom continues to be India's leading customer, purchasing 27% of Indian cotton cloth exports in 1971. Other important buyers are the Sudan, the United States, and Nepal. In January 1972, the United Kingdom replaced import quotas on Commonwealth cotton textiles with a 15% import duty, which was expected to reduce India's textile trade with the United Kingdom. However, the opening of new markets in Bangladesh following its independence in late 1971 and the conclusion of a special deal with the U.S.S.R. in March 1972—the U.S.S.R. supplies cotton to India for processing and reexport to the U.S.S.R.—should stimulate textile exports.

FIGURE 15. Production of principal industrial commodities* (U/OU)

	1950/51	1960/61	1970/71	1971/72
Cotton yarn (*million kilograms*)	534	801	929	902
Cotton cloth (*million meters*)	4,215	6,738	7,596	7,547
Mill sector	3,401	4,649	4,055	4,039
Small-scale sector	814	2,089	3,541	3,508
Jute (*thousand tons*)	837	1,097	958	1,129
Sugar (*thousand tons*)**	1,130	3,030	3,740	3,110
Tea (*million kilograms*)	277	320	421	429
Ingot steel (*million tons*)	1.5	3.5	6.1	6.4
Pig iron (*million tons*)	1.3	4.3	7.0	6.8
Finished steel (*million tons*)	0.9	2.4	4.5	4.8
Motor vehicles (*thousands*)	16.5	55.0	87.9	91.3
Bicycles (*thousands*)	99	1,071	2,042	1,766
Railroad cars (*thousands*)	2.9	8.2	11.1	8.5
Fertilizers (*thousand tons*)	18	154	1,059	1,230

*Fiscal years, (1 April to 31 March), except as noted.
**Sugar year, (1 November–31 October).

Jute products are the country's most important export, accounting for 17% of the total value of exports in FY1971/72. However, such products accounted for only 2.5% of the total value of industrial production. After a record production of 1.3 million tons in FY1965/66, production declined through FY1969/70, apparently because of increased competition from jute mills in East Pakistan (now Bangladesh), a very poor 1968 jute crop, and resultant high Indian prices. After a marginal increase in FY1970/71, production of jute goods rose to 1.1 million tons in FY1971/72, principally because of better jute crops in 1969 and 1970, and increased demand for Indian jute manufactures after the disruption of East Pakistan's production by civil war. In FY1969/70 India accounted for less than half of the world's jute product exports, compared to 87% in the early 1950's. The long-term decline in the Indian jute industry was a result of the partition of the Indian subcontinent in 1947. The best jute growing areas were in the part that became Pakistan's eastern wing, while most of the jute mills were in areas that went to India. Pakistan subsequently captured a larger share of the world market for jute, because it built modern jute textile mills in East Pakistan (now Bangladesh) that were more efficient than the older mills in India.

Although the domestic demand for jute goods in India is increasing, the jute industry is still heavily export-oriented. However, exports of Indian jute products are hampered by high production costs and high export taxes. Moreover, world demand has faltered because of the increased use of substitute materials in manufacturing bags and a trend toward bulk produce handling. The production of carpetbacking increased from 10% of all domestic jute manufactures in 1966 to 20% in 1971, while the share of jute sacking declined. Even jute carpetbacking, however, is now encountering strong competition from synthetics. In FY1970/71 carpetbacking and specialty items accounted for about 60% of the value of jute exports, and have displaced hessian—a jute fabric for bags, usually shipped in cloth length—as the principal jute export. Exports of sacking have declined, whereas demand for more sophisticated industrial jute fabrics—especially in the United States—has increased rapidly. On balance, however, total jute exports declined almost 30% between 1965 and 1971.

b. Food processing

The food-processing industry is the third-largest manufacturing sector and accounts for about 12% of the total value of manufacturing production. Sugar is the major food-processing activity. Three forms of sugar are produced: *gur*, a farm-produced, brown raw sugar; *khandsari* a semiwhite sugar made from further processing of *gur;* and white or factory sugar. Factory sugar production declined sharply to an estimated 3.1 million tons in 1971/72 (sugar production year: 1 Nov.-31 Oct.) from a record 4.3 million tons in 1969/70 because of poor sugarcane crops and increased competition from *gur* and *khandsari*. Sugar exports totaled 349,000 tons in FY1970/71 but declined to 316,000 tons in FY1971/72 because of the production shortfall. In 1971/72, *gur* production was 7 million tons, up about 8% from the previous year, and *khandsari* production totaled 500,000 tons, about the same as in the previous year. The government's price control policy for factory sugar (there is no price

control on *gur* or *khandsari*) and the differential taxes on the three types of sugar have placed factories at a disadvantage in bidding for supplies of sugarcane. In May 1971, the price and distribution controls on sugar were lifted to divert more cane from *gur* to factory sugar production. In January 1972, however, the controls were reimposed to ensure adequate supplies at the government ration shops and to control prices in the face of declining sugar production.

A sizable tea industry contributes significantly to the importance of India's food-processing sector, but most of the tea processing is done on the tea plantations. There are various other important food-processing activities. Large amounts of grain are milled into flour, but the factory milling sector is relatively small because the milling is largely done by consumers. Rice milling is primarily a cottage industry, with only about 20% of the rice being milled in the commercial sector.

The large vegetable oil industry satisfies most of the domestic demand for edible vegetable oils, which are extracted primarily from domestically grown oilseeds. India produced 2.9 million tons of vegetable oils in crop year 1971/72; of this total, 49% came from peanuts, 25% from rape and mustardseed, 8% from coconuts, and 49% from cottonseed. Vegetable oils continue to be extracted mainly in villages in old-fashioned wooden rotary mills. The large amount of oil remaining in the oilcake after pressing enhances the value and usefulness of the cake. Small quantities of oilcake and oilmeal are used as animal feed food, and fertilizer, but the bulk, particularly peanut meal, is exported. While export earnings from fats and oils have increased steadily in absolute terms since 1967, their share of total exports has remained stable at 3% to 4%. On the other hand, India is a net importer of vegetable oils and fats, as domestic production of cooking oil has not kept pace with domestic demand.

c. Steel

Although India has had a modern steel industry for more than half a century, major steps to increase steel output were not taken until the mid-1950's. At that time, the country's two large private sector mills, owned by Tata Iron and Steel Co. (TISCO) and Indian Iron and Steel Co. (IISCO), were permitted to expand, but construction also began on three public-sector mills at Bhilai, Durgapur, and Rourkela, with Soviet, British, and West German aid, respectively. During the 1960's, the capacity of these plants, which were controlled by Hindustan Steel Ltd., was expanded and construction was begun on a fourth public-sector mill at the Bokaro Coalfield—with Soviet assistance. The Bokaro plant's first blast furnace finally went into operation in October 1972, 2 years behind the original target date. After completion of the first stage in 1973, Bokaro is scheduled to have a capacity of 1.7 million tons. Excluding the Bokaro plant, total steel capacity in 1972 was 8.9 million tons, of which 66% was in the public sector.

Since the mid-1960's, labor problems and the government's failure to permit sufficient imports of steelmaking equipment to meet the rapid rise in domestic demand have disrupted the industry and resulted in domestic steel shortages. Steel output has lagged considerably behind capacity, and the industry operated at less than two-thirds its rated capacity in FY1971/72. Production of finished steel and ingot steel totaled 4.8 million tons and 6.4 million tons, respectively, in FY1971/72, approximately the same as in FY1968/69. Declining production, poor management and maintenance, and increasing operating costs at the IISCO facility led the government to takeover its management in July 1972. Two of the country's three public steel plants, however, have also been operating at similar under-capacity levels.

The government began restricting exports and liberalizing imports of steel in 1970 in order to ease the acute domestic steel shortage. Steel exports, which had increased from about 1 million tons in FY1966/67 to a peak of 2 million tons in FY1968/69, declined to less than 600,000 tons in FY1971/72. Steel imports, on the other hand, almost tripled between FY1969/70 and FY1971/72, when they reached 1.3 million tons. In addition, the government has licensed a number of small-capacity (30,000 to 80,000 tons) steel plants in order to increase domestic supplies. These small-scale units use electric furnaces and continuous casting equipment, with sponge iron and scrap as raw material. By mid-1972, 19 units, with a total capacity of 1 million tons, had been licensed and were expected to be in operation by 1974.

d. Industrial machinery

India's production of industrial machinery increased rapidly (about 9% a year) during the early 1960's. Production declined, however, during the post-1965 industrial recession, and by FY1970/71, it was about 15% below the 1960 level. Despite a brief recovery in FY1968/69, production continued to decline because of scarcities of imported raw materials, pig iron, special steels, and cement, in addition to localized shortages of electric power. Underutilization of industrial capacity (by as much as 50% to 70%) in the machinery and equipment industries was common in FY1970/71. Most of the

heavy machinery installations are in the public sector and include a machine tool plant, a locomotive factory, a mining machinery plant, a heavy machinery plant, a foundry forge, and several heavy electrical machinery plants.

The production of transport equipment fell 9% in 1971, continuing a decline that started in 1966. The industry has been seriously affected by lower-than-anticipated rail traffic, which has resulted in reduced requirements for transport equipment by the government-owned railroads. Import restrictions, on the other hand, have stimulated the remainder of the transport equipment industry. Indian motor vehicle producers are required by the government to increase their production of those components and parts that formerly had to be imported.

e. Chemicals

Although most of India's chemical industry is privately owned, the government owns large enterprises in the fields of chemical fertilizers, antibiotics, and insecticides, and is extending its operations to include petrochemicals and coal tar intermediates. The most important sectors of the industry are the basic industrial chemicals, fertilizers, soap, and paint, varnish, and lacquer. The production of heavy inorganic chemicals—soda ash, caustic soda, and sulfuric acid—is the oldest segment of the chemical industry. Output of organic chemicals is small except for some plastics and a few chemicals such as alcohol (from molasses), acetylene (from calcium carbide), and aromatics (from coal). Despite continuing low capacity utilization, increased domestic production has helped reduce imports of chemicals and chemical products. For example, chemical fertilizer imports decreased from over 7% of total imports in FY1968/69 to 4% in FY1971/72. Production of principal chemicals and chemical products during 1968-71 is shown in Figure 16.

FIGURE 16. Production of principal chemicals and chemical products* (U/OU)
(In 1,000 tons, except as indicated)

	1968	1969	1970	1971
Sulfuric acid	973	1,160	1,188	1,021
Caustic soda	317	348	361	373
Soda ash	398	422	446	479
Chlorine, liquid	101	136	146	164
Bleaching powder	11	16	13	17
Bichromates	8	8	11	7
Superphosphates	132	109	103	102
Ammonium sulfate	110	138	126	121
Paints and varnishes	65	62	60	68
Soap	194	238	233	320
Viscose rayon filament	36	37	36	37
Acetate rayon filament	1	2	2	2
Rayon staple	62	58	63	67
Synthetic fiber	5	8	10	11
Rectified spirit (*million liters*)	174	200	229	*na*
Synthetic rubber	25	26	30	33

na Data not available.
*Data based on monthly average production.

f. Construction

India has a well-organized construction industry that is capable of handling large contracts for the building of dams and bridges, factories and powerplants, tunneling, marine works, housing, and most of the country's other construction requirements. Growth of the industry, however, has been impeded by shortages of steel and other building materials, capital equipment, and skilled labor. Most of the large and medium-sized firms use modern construction machinery, while the smaller firms still rely on labor-intensive methods. Rapid progress has been made in the production of building and construction machinery, including such items as road rollers, concrete mixers and vibrators, tar and bitumen boilers, small cranes, lifts, trucks, brick and tile-making machinery, and stone crushers.

Although the construction industry contributed less than 5% of national income in FY1970/71, Indian social and economic progress depends heavily on the industry for the construction of housing for the rapidly expanding population. The total shortage of houses in 1969 was estimated at 84 million, of which 86% was in rural areas. Industrialization in India has led to increased migration to the cities, and there are serious housing shortages in urban areas such as Calcutta and Bombay. Housing construction undertaken by those private employers who provide employees with housing accounted for more than 70% of the total investment in housing during 1961-65. The Fourth Plan allocated 11.7% of total investment to the housing sector.

5. Domestic trade (U/OU)

India's internal trade is predominantly in agricultural produce and domestically manufactured goods. It is estimated that more than one-third of the economy—nearly one-half in the rural areas—was still nonmonetized in 1970. Thus, a large portion of national production does not enter the market but is consumed by the producers, withheld for seed, or bartered for services or other necessities. The high degree of self-sufficiency in the villages limits the volume of trade. There are at least 560,000 villages in

India; each depends largely on its own production of grain, fruits, and vegetables, and each uses local materials for construction and produces most of its household requirements.

Most of the marketed agricultural produce is sold within the villages. About two-thirds of the marketed produce is purchased by traders and the remainder by cooperatives and final consumers. A trader may be a wholesaler, general merchant, or a village or urban moneylender. Except for the recent nationalization of the wholesale grain trade and the government fair-price shops (discussed below), the marketing of agricultural produce is accomplished principally by private traders who control both the sources of credit and the channels of distribution. Most cultivators have little influence over the prices they receive. Usually, they are forced to sell their produce immediately after harvest to moneylenders at the prevailing low prices, principally because of the need to repay debts but also because of the lack of sufficient storage space. Despite the expansion of cooperative and institutional credit for the farm sector, moneylenders continue to provide the cultivators with an estimated two-thirds of their credit needs.

Trade is handled by a large number of middlemen. Instead of selling produce through the local market, the cultivators usually sell either to the village merchant (especially if the merchant holds a mortgage on the crop), to agents of mills or gins, to itinerant traders, or to other cultivators who act as traders during the harvest season. Local markets, called *hats* and *shandies*, are held periodically, the former usually once or twice a week, and the latter at less frequent intervals or on special occasions. The markets sell agricultural produce or livestock or both. The area served by the *hats* varies considerably; it may consist of a single village or it may extend over a 60 to 70 mile area.

The total number of wholesale markets (*mandis*) was estimated in 1970 at 3,750; over 1,600 were state-regulated and were managed by a committee of producer-sellers and market functionaries. They were owned either by private individuals or local government bodies. Malpractices such as incorrect weights and measures and arbitrary fees and deductions persist even in regulated markets, usually to the disadvantage of the cultivators and in favor of the middlemen. The Directorate of Marketing and Inspection under the central government's Ministry of Agriculture exercises some influence over the larger markets through grading and standardization of agricultural commodities, promotion and regulation of markets, training of marketing personnel, and marketing surveys.

Because of the importance of foodgrains to the economy, the government attempts to influence both supply and price through its systems for procuring, distributing, and rationing grain. New Delhi adopted foodgrain price supports in 1965 to encourage production and also attempted to hold down foodgrain prices by maintaining buffer stocks for release during local shortages. Low stock release prices, however, tended to reduce incentives on the part of cultivators, and the government increased both procurement and retail foodgrain prices beginning in 1966. Since then the government, through the Food Corporation, has undertaken purchase operations on a progressively larger scale each year at procurement prices exceeding the support price. In crop year 1971/72, government procurement prices were kept high, and procurements amounted to 6 million tons. By mid-1972, government stocks had reached about 9.5 million tons. However, reduced grain output because of drought subsequently caused massive withdrawals from government stocks, which by March 1973 had declined to 2.7 million tons. In March, New Delhi ordered each state to nationalize its wholesale grain trade, hoping thereby to ensure adequate and reasonably priced grain supplies for the public distribution network.

Since 1955, official foodgrain stocks have been distributed in scarcity areas through government fair-price shops—small private stores licensed to sell at fixed prices. Each state establishes the prices of foodgrains sold in the fair-price shops within its borders. In 1965, the government greatly expanded the system of fair-price shops and also began the statutory rationing of foodgrains in some areas. Statutory rationing continued for a number of years in some heavily populated urban areas, but by the end of 1970 statutory rationing had been withdrawn except for Greater Bombay, Calcutta, and the Durgapur-Asansol area in West Bengal.

Kerala State has had statutory rationing on an informal basis since November 1964. Under informal rationing, consumers with identity cards can purchase limited quantities of foodgrains from the fair-price shops, while supplementing their rations through purchases on the open market. Informal rationing on a nonstatutory basis is widespread in 12 other states, principally in the urban areas. The central government does not have the responsibility of supplying foodgrains for these informal rationing programs.

In those parts of the country without rationing, foodgrains have been distributed principally through the open market, supplemented to some extent by fair-price shops. The number of fair-price shops and ration

shops has varied with the number of people who must be supplied through public distribution channels—110,000 shops in 1965, 153,000 in 1967, 125,000 in early 1972, and 164,000 in January 1973. At the end of 1970, about 15 million people were covered by statutory rationing and 285 million by informal rationing.

As foodgrain production expanded following the drought of the mid-1960's, government grain distribution from central stocks declined from a record 14 million tons in 1966 to 7.7 million tons in 1971. In total, public grain distribution from 1967 through 1971 amounted to 49 million tons; about half consisted of imported grains, mainly U.S. P.L. 480 shipments.

Until the government takeover of the wholesale grain trade in March 1973, four principal methods of foodgrain procurement were followed by the states: monopoly procurement of some grains; graded levy on producers; levy on millers and wholesale traders; and pre-emptive buying in the open market. There was no compulsory state levy for wheat, which, along with coarse grains, was purchased solely in the open market at set prices. Under this system the authorities encountered few problems in obtaining wheat, but they experienced difficulties procuring sufficient quantities of some other grains. The extent to which this system will be changed by the elimination of private wholesale traders is still not clear because each state is setting up its own procurement system.

The Food Corporation of India was established on 1 January 1967 to control interstate trade in foodgrains. The Corporation does not have authority to force the states to surrender surplus grains, however, and any state that wishes to trade in foodgrains with another state may do so. Although the role and authority of the Corporation in procuring and distributing foodgrains have not been clearly defined, the Corporation's influence and activities are extensive, both in respect to areas of operation and commodities handled. The Corporation was established as a commercial organization on an autonomous basis. In 1969, it became the central government's sole agency for trading in foodgrains. In addition to cereals, the Corporation now deals in a variety of miscellaneous products—including pulses, peanuts and peanut oil—in accordance with its role as the principal government agency implementing price and supply policies on these items. It also undertakes the manufacture and distribution of processed foods. With the approval of individual states, the Corporation is empowered to purchase foodgrains from producers on either state or central government account when prices fall below established minimum levels. It also requisitions stocks from traders and mills whenever prices tend to exceed specified maximum levels, and may procure foodgrains from surplus areas to meet requirements of deficit areas and to build buffer stocks. Initial operations were confined to rice in the southern states; but the Corporation subsequently established regional offices in almost all the principal states.

Apart from trade in agricultural products, retail trade is largely conducted in small shops or open-air stalls in the bazaars, or by itinerant peddlers. The medium of exchange generally is either money or grain, but barter is still common in many villages. Small village shops probably have an average investment of less than Rs500 (US$67), and maintain only a modest stock of commodities such as tea, sugar, salt, herbs, tobacco, soap, drugs, matches, and similar consumer items. There are vast numbers of traders and individually owned small shops in both rural and urban areas. Although retail trade in India is essentially characterized by the one-man shop, there is an increasing trend toward larger establishments. Department stores and chain stores owned by manufacturers specializing in a single item (such as shoes or sewing machines) are located in the larger cities. Many states have established "emporiums," which sell mostly handicraft goods.

Credit societies, the earliest cooperative societies formed in India, still constitute the most important group of cooperatives both in number and membership. In mid-1970, 170,000 credit societies were in operation, with a membership of 40 million persons. These societies provide coverage to 94% of the rural villages and 33% of the population. In addition, there is a wide variety of noncredit societies associated with production, supply, and consumption. Marketing cooperatives, in particular, have grown rapidly. In June 1970, there were more than 3,300 primary marketing societies, with a membership of 2.6 million; 160 central government marketing societies, with a membership of 106,000; and 25 state marketing societies, with a membership of 6,900. Consumer cooperatives also have been encouraged. There are roughly 14,000 primary consumer societies, with a membership of about 3.5 million; however, only about 5,000 sell decontrolled or nonrationed products. Wholesale consumer cooperatives now number 375, with about 2,000 branch stores.

The government has employed various measures to restrain inflation, especially price controls on essential goods that affect the cost of living of the lower income classes. Among consumer goods, price and/or distribution controls have been in effect on foodgrains,

sugar, kerosene, molasses, and popular varieties of cotton textiles. Direct government control over producer goods prices has covered certain varieties of steel, coal, cement, and fertilizers. Although direct price controls were relaxed somewhat in the mid-1960's, concern over mounting economic problems led to tightened controls early in the 1970's.

Government services in the fields of power, irrigation, railroad, and communications facilities are often provided at subsidized prices. In addition to foodgrains, price supports have, on occasion, been established for sugar, cotton, jute, and a few other agricultural commodities. Regulations governing the price and distribution of fertilizer manufactured by newly-established fertilizer plants have been liberalized, although fertilizer is still distributed largely through government-sponsored cooperative seed and fertilizer stores.

C. Economic policy and development (U/OU)

1. Policy

Since 1955, the government has actively encouraged the growth of the public sector of the economy, although the private sector was boosted somewhat in 1966 when India relaxed direct government controls in favor of increased reliance on fiscal and monetary measures to maintain stability. Overall government policy, however, continues to stress the public sector, which has received about 60% of planned development expenditures in recent budgets.

The government's review of its economic development policies in the early 1970's indicated that employment would probably emerge as a primary development goal, with land reform and rural works programs also to play major roles. There is a continuing conflict, however, between the goals of modernizing industry and maximizing employment by promoting small-scale endeavors. The protection of inefficient, labor-intensive village industries has tended to retard the development of the organized industrial sector and reduced the volume of savings available for investment elsewhere. Similar results have emerged from policies that freeze levels of employment in organized industry and discourage the introduction of modern equipment. Restrictions on the dismissal of workers also have contributed to rigidity and inefficiency.

Net foreign aid levels have declined since the mid-1960's and foreign capital investment has come under more intensive scrutiny. Only foreign private investment that provides essential new technology or is devoted to increasing exports receives official encouragement. Foreign investors generally must accept a minority interest, giving up control and management of their invested funds. Even old-line, foreign-controlled firms have been under constant pressure to reduce their equity to a minor participation. Applications for direct investment are rigidly screened by the government in a lengthy bureaucratic process that can literally take years. Moreover, New Delhi has tried at times to curb profits and capital repatriation of the larger firms—especially the foreign-owned oil companies—which are under frequent harassment and threat of nationalization.

The Indian Government tried various measures to stem inflation in the 1960's. It adopted an elaborate system of price controls, export incentives, foreign exchange controls, and import-licensing procedures before devaluing its currency in June 1966. Wholesale prices, which had increased about 50% during the 5-year period before devaluation, rose over 11% in the year following devaluation. Subsequently, when government attention shifted from industry to agriculture and farm output increased substantially, wholesale price increases moderated, and averaged only about 4% annually between 1967 and 1972.

Along with the June 1966 devaluation, India introduced a much-needed import liberalization program, relaxed a number of restrictive investment and production licensing and price controls, and initiated export expansion programs. The decontrol policy continued for several years, but with the industrial slowdown and the decline in net aid, India again began expanding and tightening controls in the early 1970's. The large industrial firms are generally restricted from expanding. New Delhi increased its control over and participation in foreign trade, tightened import restrictions, and took over the management and control of several private firms. The nationalization of all Indian commercial banks gave the government control of most industrial credit. India's system of controls continues to suffer from operational difficulties, time-consuming administrative delays, and corruption. Furthermore, enforcement of controls is difficult, and a number of abuses have arisen—such as smuggling and improper invoicing—that deprive the government of foreign exchange.

A 12.2% increase in the money supply during FY1971/72 was associated in large part with a sharp increase in deficit financing that resulted from the 14-day war with Pakistan in December 1971. In FY1971/72, deficit financing increased about 65% over that in FY1970/71 and reached a record level of

Rs3.9 billion (US$520 million).[5] Despite the slow economic growth rate of between 3% to 4% in FY1971/72, prices and the balance of payments were kept under control. The country's foreign exchange reserves increased to the equivalent of US$1.2 billion in 1972, the highest level since the late 1950's. Mainly because of an inadequate monsoon which curtailed foodgrain production, however, overall prices in January 1973 were 12% higher than in January 1972.

a. Government budgets

Indian budgets are prepared for the fiscal years beginning 1 April and ending 31 March. The central government, the individual states, and the union territories prepare separate budgets. In FY1960/61, the central government budget was about 19% larger than the combined state budgets. Although state budgets have been increasing at a somewhat faster rate than the central budget, in FY1971/72 the central budget was still 15% larger than the combined state budgets.

The central government transfers about 20% to 25% of its total revenues to the states. State revenues include about 20% of the excise duties, 50% of the income taxes, and practically all of the estate taxes. In addition, the states receive loans and grants for development projects. Between FY1967/68 and FY1970/71, an estimated 90% of the states' capital disbursements were financed by loans and grants from the central government. The amount transferred to the states in the form of loans, grants, and tax transfers increased about 10% annually during the FY1967/68-1970/71 period, but in the FY1971/72 budget such transfers were scheduled to increase by only about 5%, to Rs17.5 billion.

In general, the states have not held their spending within the limits set by central government budgetary recommendations. To finance deficits, states have drawn unauthorized overdrafts on the Reserve Bank of India, which had to be covered by the central government. In FY1970/71, unauthorized overdrafts increased sharply to Rs3,330 million, compared to Rs130 million in FY1969/70, and centralized loans to states for development projects (in the central government's capital budget) exceeded those programmed by Rs1.6 billion. Subsequently, New Delhi asked states with overdrafts to take a cut of 15% in their annual plan resources for FY1972/73, as the first of five installments which New Delhi hoped would clear the overdrafts.

[5]The exchange rate for all rupee values cited in this chapter is Rs7.5 = US$1.00.

India's central budget expenditures (excluding expenditures by the states) have increased more than two-thirds since FY1965/66. Current expenditures more than doubled, but capital expenditures increased more slowly. Overall revenues rose slower than expenditures, and budgetary deficits increased during the period FY1965/66-FY1970/71 by about 15%, to Rs2.6 billion. Inflation was controlled to some degree during that period through increased borrowing from nonbank sources, such as annuity deposit schemes (compulsory savings), small savings, bond sales, and the sale of treasury bills to nonbanking sources. Those practices had to be continued through FY1971/72, when deficit financing increased sharply, reaching about Rs3.9 billion (Figure 17).

The central government's capital expenditures increased from Rs22.2 billion in FY1965/66 to Rs34.8 billion in FY1971/72, accounting for about 46% of total expenditures. The increase represented essentially expenditures on defense, industrial development, and increased assistance to states. At the same time, expenditures were sharply reduced on food subsidies and railroad development.

Current budget expenditures also increased fairly steadily, from Rs20.0 billion in FY1965/66 to Rs40.5 billion in FY1971/72, principally because of increased defense expenditures, debt service payments, assistance to states, and administrative expenses. Current expenditures increased by 30% in FY1971/72 alone, largely as the result of relief expenditures for the

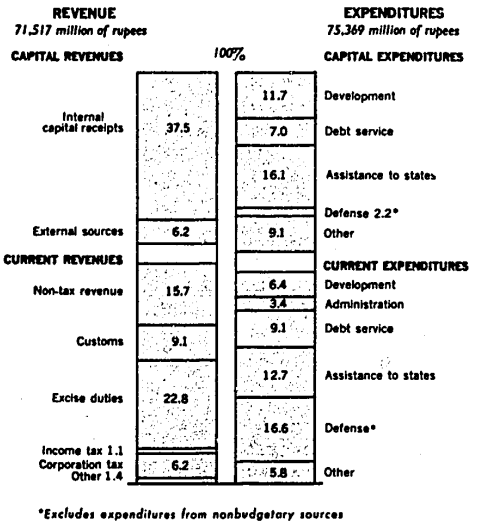

FIGURE 17. Central government budget, FY71/72 (U/OU)

10 million Bangladesh refugees, and increased defense expenditures for the 1971 war with Pakistan. Nevertheless, total defense expenditures in FY1971/72 represented only about 18.8% of total central government expenditures, compared with 20.9% in FY1965/66—following the India-Pakistani hostilities in September 1965.

India's external debt has increased faster than its domestic debt. At the end of FY1970/71, its total public debt was the equivalent of US$25.1 billion, of which about 65% was domestic and 35% external; compared with $19.2 billion at the end of FY1966/67, when about 68% was domestic and 32% external.

b. Domestic sources of revenue

Taxation is by far the most important domestic source of revenue in India. Nontax government revenue includes interest receipts and income from public-sector enterprises (such as railroads, posts and telegraphs, the Reserve Bank of India, and government airlines), public-sector industries (principally the Hindustan Steel Co.), and various insurance receipts. Nontax revenue provided 15.7% of the government's total receipts in FY1971/72. Total revenue amounts to less than 18% of national income, principally because of low taxes in the rural sector of the economy. The agricultural sector contributes about half of the national income, but taxes on land yielded only 2.1% of combined central and state government revenues in FY1971/72. Central government receipts totalled Rs71.5 billion in FY1971/72, of which Rs40.2 billion represented current receipts and Rs31.3 billion capital receipts.

Before 1958, customs duties were the major source of current revenue, contributing 40% to 45%, while excise duties contributed an average of only about 20%. Since then, however, excise duties have become the major source, accounting for about 40% of current revenue and 22% of total revenue in FY1971/72. About one-fourth of the excise duties are transferred to the states. The most important excise taxes in FY1971/72 were those on petroleum products—which accounted for one-third of gross collections—manufactured goods, tobacco, and food and beverages.

Prior to 1966, over 95% of India's customs receipts came from import duties, which were substantially increased in 1965, when a 10% surcharge was added to existing duties. At that time, the statutory import duty rate was established at 40% on machinery and basic raw materials, 60% on semiprocessed and intermediate goods, and 100% on finished consumer goods. The duty on certain agricultural, dairy, and poultry farming implements and appliances was established at 15%, and items such as foodgrains, fertilizers, sulfur, raw jute, cashew nuts, printed books, birth control devices, wool, and fish were exempt from duties. After the 1966 currency devaluation, the 10% surcharge was withdrawn and some of the other rates were reduced. In FY1971/72, duty rates were established at 40% on machinery and certain raw materials, 30% on iron and steel, 60% on most semiprocessed and intermediate goods, and 100% on finished consumer goods. Import duties were levied for the first time on agricultural tractors, unwrought copper and zinc, and lead ingots. In FY1971/72, import duties accounted for 92.6% of customs receipts, due to an increase in the absolute value of taxable imports, higher duty rates, and a decline in export duties. Before the 1966 devaluation, very few commodities were subjected to export duties; since that time, however, export duties have been levied on a number of commodities, including jute manufactures, tea, mica, hides and skins, leather, manganese ore, and iron ore.

The principal direct taxes in India are personal and corporate income taxes. While corporate income taxes accrue entirely to the central government, net proceeds of the personal income tax, with few exceptions, are shared with the states. Revenue derived from the two income taxes accounted for 13% of current revenue and 7% of total revenue in FY1971/72. Since 1962, corporate taxes have provided the central government with more revenue than have personal income taxes. The effective annual tax rates on corporations and individuals are constantly being altered through the imposition or abolition of surcharges, wealth taxes, and "super taxes," and by changes in regular tax rates.

The corporation tax rate was not changed in the FY1971/72 budget, but the 25% surtax on profits in excess of 10% of capital employed was raised to a maximum of 30%. The special concessional rate of 14% on dividends payable to foreign companies by an Indian company engaged in a priority industry was also replaced by a regular rate of 24.5%. However, the effective tax was diluted by various tax incentives, particularly for priority industries. Besides the general tax holiday on new industrial undertakings, tax incentives include: a 5% deduction from profits in setting the tax base for priority industries; a development rebate for new plants and machinery; an export market development allowance; and an agricultural development allowance for companies using agricultural products.

India's personal income taxes are progressive, with exemptions for incomes below Rs5,000; tax rates reach

85% for incomes over Rs200,000. Considering the low per capita income in India, however, the application of the income tax is severely restricted. Although the basic income tax rates did not change in FY1971/72, the 10% surcharge initiated in the 1969 tax year was increased to 15%. The highest marginal income tax rate was 97.75%, compared to 93.5% in FY1970/71.

Other direct personal taxes currently in effect include the "wealth" tax and inheritance tax. Net wealth in excess of Rs100,000 is taxed at 1%, and rates increase to 8.0% for wealth over Rs1.5 million. The inheritance tax has a Rs50,000 exemption, and the tax rate increases progressively thereafter, from 4% to 85% for estates valued in excess of Rs2 million.

c. Money and banking

The basic unit of currency is the Indian rupee, which had an official exchange value of $0.13 in April 1973. As a member of the sterling area, India sells its nonsterling currencies to London for sterling. The rupee is pegged to the U.K. pound sterling and the exchange rate now fluctuates with sterling, which has been allowed to float in world markets since June 1972. The exchange rate is maintained by the central bank, which also enforces exchange control regulations.

India's highly developed banking system consists of the Reserve Bank of India (RBI), which is the central bank; the State Bank of India; a large number of other commercial banks; various government, state, and private financial institutions; industrial finance corporations; and agricultural credit cooperatives. The RBI was initially owned by private shareholders, with the exception of a small fraction of shares owned by the government. In 1949 it was nationalized by the Reserve Bank Act. The RBI is the bank of issue and regulates the monetary system of the country. To carry out this function, the bank regulates currency and exchange, regulates credit, extends rural credit, acts as fiscal agent for the government, and supervises the operation of commercial banks.

The State Bank of India is a state-owned commercial bank and is an agent for the RBI, which holds the bulk of its share capital. It was formed by the nationalization of the Imperial Bank in 1955, for the primary purpose of enlarging rural banking and credit facilities. As the largest commercial bank, the State Bank and its subsidiaries account for more than 25% of all deposits. In addition to its regular commercial banking activities, the State Bank makes loans at preferential rates to agricultural cooperative banks, subscribes to shares in Land Mortgage Banks, and provides some credit for small industries. Commercial banks in India are known as "scheduled" and "nonscheduled" banks. The "scheduled" banks are members of the Indian reserve system and may be compared to member banks of the U.S. Federal Reserve System. This classification includes the State Bank and 71 commercial banks, of which 58 are Indian and 13 foreign. The combined share of deposits and outstanding credit of the scheduled banks is 99% of the total of all banks in India. There are currently only 17 "nonscheduled" commercial banks, a sharp decline from 256 such banks that exsisted in 1961.

In July 1969, all Indian banks with assets exceeding $67 million were nationalized. The 14 major Indian commercial banks were affected; foreign banks were excluded. A Supreme Court decision in early February 1970 voided the public takeover on technical grounds. Shortly thereafter, a government ordinance renationalized the banks, giving government-owned banks control of 84% of all the deposits of scheduled banks.

From 1951 to 1971 many changes took place in the Indian banking system. The total number of commercial banks declined from 566 to 88, while the number of offices rose from about 4,000 to 12,000. In 1951 there was only one branch office for every 87,000 people, but by 1971 the ratio had increased to one for every 45,000. Measures were taken to increase the amount of credit for the weaker sections of the agricultural community—especially in backward areas—and to provide for the progressive liberalization of branch bank licensing policies in favor of rural and small urban areas, and all other areas not already serviced by banks. In FY1970/71 alone 1,890 new branches were opened, an 85% increase over new branch openings in FY1968/69; about two-thirds of these new branches were in rural areas. Financial assistance to small-scale industries also received increased attention during FY1970/71, when total credit outstanding to small-scale industries increased by 16%—to Rs8.6 billion—as compared to the previous year. However, banking at the village level is to a large extent still dependent on nonbanking institutions such as the community development system, the cooperative credit societies, and individual moneylenders.

In recent years agricultural financing has become increasingly important as a part of total commercial bank lending. In mid-1971, agricultural loans in force had increased almost 75% to Rs5.9 billion, compared to those of mid-1969, and agricultural credit accounted for about 10% of total bank credits. Loans were intended principally to assist cultivators in using modern inputs and in adopting new agricultural techniques.

There are a number of other institutions established to provide long- and medium-term credit, which is not usually provided by commercial banks. These include the government-controlled Refinance Corporation for India (RCI), which assists banks in extending medium-term loans to industries and exporters. The RCI is a subsidiary of the Industrial Development Bank of India (IDBI), which was established in 1964 as a wholly-owned subsidiary of the RBI. The IDBI was established principally because of policy and statutory limitations on the other financial institutions and the absence of a central coordinating agency. In the field of development banking, the IDBI—comparable to the central bank in the field of commercial banking—coordinates the operations and policies of other institutions and also provides financial assistance, both directly to industrial units and indirectly through other financing institutions and banks. By the end of FY1970/71, the IDBI had sanctioned assistance of about Rs4,155 million.

The Industrial Finance Corporation of India (IFC), established in 1948 under the supervision of the Finance Ministry, provides loans, underwriting, and financial assistance to public limited companies and cooperative societies. In 1960, the IFC was permitted to guarantee foreign exchange loans or credits secured from foreign banks or financial institutions. By the end of FY1970/71, the IFC had extended total assistance in the amount of Rs3,628 million. The Industrial Credit and Investment Corporation of India, Ltd. (ICICI), established in 1955, is a privately-owned institution providing loans, equity capital, and underwriting to private industries. Neither the government nor the RBI holds any shares in this institution, but some share capital is held by foreign institutions, including banks. Between 1955 and the end of FY1970/71, the ICICI provided Rs3,075 million in assistance, of which Rs429 million was approved during 1970. The states generally have individual state-financed corporations that provide financial assistance to medium- and small-scale industries. Loans are made at concessional rates to small businesses, especially in backward areas. Underwriting is done only on a very small scale. These institutions disbursed Rs329 million in loans during FY1970/71, compared to Rs214 million in FY1969/70. The RBI contributes to their share capital. Many of the state governments also have set up institutions called State Industrial Development Corporations (SIDC), primarily to promote industrial development.

In addition to the lending institutions, the Life Insurance Corporation of India and the Unit Trust of India lend considerable support to the industrial sector through their investment and underwriting operations. In FY1970/71 they underwrote and subscribed Rs448 million for shares and debentures of industrial concerns. The Life Insurance Corporation of India was established by the government in 1956 following the nationalization of private life insurance companies. The corporation has a paid-up capital of Rs50 million and is the largest institutional investor in India. In addition, there are a number of other small private investment trusts and companies which offer credit facilities to industrial organizations.

The structure of the credit cooperative movement is three-tiered, consisting of the state cooperative banks at the state level, central cooperative banks at the district level, and primary agricultural societies at the village level. In some states, grain banks also give loans in kind to farmers. In July 1971, there were 1,315 cooperative banks, mostly serving the short- and medium-term credit needs of areas with populations of less than 25,000. Long-term credit for agricultural purposes is provided by central and primary land mortgage banks.

On 1 March 1966, the provisions of RBI regulations with regard to credit controls, the maintenance of specified cash reserves and liquid assets, licensing, inspection, and the issuance of directives were extended to cooperative banks and societies with paid-up capital and reserves of Rs100,000 and above. Also, all cooperative banks were made eligible for emergency loans from the RBI. In the sphere of short-term finance, state cooperative banks may borrow from the RBI at a concessional rate—2% below the bank rate in 1970—for seasonal agricultural operations and the marketing of crops. State cooperative banks may also obtain medium-term credit from the central bank at 1.5% below the bank rate. In 1970 the RBI stipulated that, as a condition for obtaining medium-term loans, cooperative banks must advance at least 40% of their annual medium-term loans for productive purposes, including the construction and repair of wells and other minor irrigation schemes; the purchase of machinery such as pumpsets; and the purchase of agricultural implements. In FY1970/71, the RBI advanced Rs4.7 billion to cooperatives, compared to Rs4.4 billion in FY1968/69. By mid-1970, membership in agricultural cooperative credit societies had increased to almost 30 million, from 19 million in 1960; while the number of such societies had decreased from 222,000 to 160,000, mainly by liquidating and amalgamating weak cooperatives. By mid-1970, the cooperative societies extended to 94% of the country's villages and 34% of the rural population. The short- and medium-term

credit dispensed by these societies increased from Rs2.0 billion in March 1961 to Rs5.4 billion in March 1970.

The marketing of industrial securities is regulated by the government under the Securities Regulation Act of 1956. Eight stock exchanges are in operation; the Bombay Exchange is the most important. The price index of industrial securities (base: FY1961/62=100) was only 99.8 at the end of FY1970/71. The index had declined at an average annual rate of about 4% during 1961-67, but rose at an average annual rate of about 8% during 1968-70.

Price increases during FY1967/68-1971/72 were moderate. The consumer price index increased by an average annual rate of only about 4.5%, despite large budget deficits. The money supply increased by 60% compared to a 28% growth in national income. During this period, the RBI liberalized credit only for priority sectors such as exports, agricultural cooperatives (in selected areas), and for short-term lending to small-scale industries. To stimulate exports, a 6% interest rate ceiling was put on export credits in 1968; banks were entitled to a 1.5% government subsidy on export credits. The interest rate structure and liquidity requirements were periodically adjusted to meet changing conditions. In March 1968, in order to promote industrial expansion, the bank rate was lowered from 6% to 5%, and the maximum rate for commercial bank advances was lowered from 10% to 9.5%. In early 1971, however, the RBI tightened credit controls when bank credit expanded faster than deposits. The minimum net liquidity ratio was then raised from 33% to 34%, the bank rate was restored to 6%, and banks were asked to increase deposit rates by ¼% to ½%.

2. Development policies and programs

India completed three 5-year development plans covering the 15-year period from 1 April 1951 to 31 March 1966. Following the final year of the Third Plan, which was marked by a severe drought, a costly war with Pakistan, the temporary interruption of non-Communist aid, and uncertainty regarding the availability of financial resources, India delayed adoption of the Fourth Five Year Plan and began operating on an annual plan basis. Three annual plans were in force between 1 April 1966 and 31 March 1969. Subsequently, the country began operating under the Fourth Five Year Plan covering the period 1 April 1969 to 31 March 1974.

Beginning with the First Plan (FY1951/52-1955/56), the government established state planning as a fundamental governmental function. The Industrial Policy Act of 1956 expanded the government's role by reserving the bulk of heavy industrial investment for the public sector. Throughout the development period, the government expanded its control over private economic activity and increased its relative share of planned investment over that of the private sector. The public sector utilized 52% of total development funds during the First Plan, and its planned share increased to 59% during the Fourth Plan. The public share of the reproducible tangible wealth of the country increased from about 15% in FY1950/51 to 35% in FY1965/66. Public sector investment, however, has been directed principally to social services, infrastructure, and large-scale heavy industries, while private sector investment has been concentrated on activities that provide faster returns. This accounts, in part, for the private sector's continuing to provide an estimated 85% to 90% of the national income in FY1971/72.

The First Five Year Plan concentrated on increasing agricultural production and a greater utilization of existing industrial capacity. A major aim was to establish the basic social and economic policies for economic growth as set forth in the constitution, including the establishment of an agricultural extension service as part of a comprehensive development program, and the large-scale expansion of irrigation and power facilities. In contrast, the Second Five Year Plan (FY1956/57-1960/61) emphasized the development of basic and heavy industries. It also defined more clearly the key role that the public sector was to play in the economic development of the country, and established the goal of a socialist pattern of society. Under the Second Plan, total net public and private investment, in current prices, was $14.2 billion, or double the investment of the First Plan.

The priorities established in the first two plans were reflected in the distribution of public sector expenditures among the various economic sectors. Programs for agriculture and irrigation received 31% of the total public expenditures during the First Plan, compared to only 21% during the Second Plan. In the Second Plan the combined share of public investment in the industrial and minerals sectors increased to $1,890 million, or 20% of the total public investment, compared to $155 million or 4% of the total in the First Plan. Transport and communications were given about the same priority in both plans.

The record of growth during these two plan periods was impressive. The First Plan was a success, mainly because of the progress achieved in agriculture. National income increased by 18%, compared to a

target of 13%. The Second Plan achieved a 21% growth in national income, somewhat less than the goal of 25%. Because the Second Plan put more stress on the industrial sector, it required greater expenditures of foreign exchange. The plan had estimated a deficit of about $2,310 million in the balance of payments over the 5-year period, all but $630 million of which was to be met by external assistance. However, an unexpected rise in international and domestic prices and the relatively static nature of export earnings created serious balance-of-payments difficulties and forced the government to place tight restrictions on less essential imports. To meet the crisis, $1.2 billion—nearly two-thirds of the country's foreign exchange reserves—had to be drawn down. Moreover, some of the plan targets had to be reduced and others postponed.

The Third Five Year Plan (FY1961/62-1965/66) proposed to achieve self-sufficiency in foodgrains, to increase agricultural production sufficiently to meet the requirements of industry and export, and to expand basic industries so that by 1971 the requirements for further industrialization could be met principally from domestic production. Although the public sector target of $15.75 billion (in current prices) of developmental expenditures was exceeded by about 15% and expenditures increased to an estimated $18.1 billion, in real terms the plan failed to meet its objectives. National income, which was to have increased by 30% to provide for a 17% increase in per capita income, rose in the aggregate by only 18%. National income increased an average of about 4.7% per year in real terms during the first 4 years of the Third Plan; however, the annual increase for the entire 5-year period was actually only about 2.5%, primarily because agricultural output declined sharply in 1965 because of a drought.

Industrial performance during the Third Five Year Plan was much better than that of agriculture, but its influence on economic growth was less because industry accounted for only about one-fifth of national income. Industrial production increased about 50% during the period, while agricultural production declined about 8%.

During the three annual plans (FY1966/67-1968/69), real national income increased an average of 4.5% per year. Agriculture and related activities received higher priority, and despite a second consecutive drought in 1966 which kept agricultural production down, agricultural output increased at an average rate of 6.2% annually during 1966-68, with foodgrain production reaching record levels in 1967 and 1968. Industrial production increased at an annual average rate of only 1.6% per year during this period and actually declined in 1966 and 1967.

During the three annual plans, national income increased at a much faster rate than investment, which declined from 12.2% of national income in FY1966/67 to 10.6% in FY1967/68 and FY1968/69. External resources financed 36% of development expenditures, compared to an average of 28% in the Third Plan period. Domestic savings continued to account for the largest share of government development funds (54%), but were lower than the 59% share in the Third Plan. Deficit financing amounted to $907 million, or 10% of the total.

The Fourth Five Year Plan (FY1969/70-1973/74) called for development spending of $32.5 billion (Figure 18), with the private sector accounting for 41% of the total and the public sector 59%. A 9% annual increase was projected for industrial production. Agriculture, however, continues to receive high priority; the plan calls for an average annual 5% growth rate in agricultural production. During the first 3 years of the plan, national income increased at an average annual rate of about 4.5%, compared to a 5.5% planned rate. Industrial output lagged; its rate of growth was 40% below the goal. Agricultural production performed well, increasing at the average annual planned rate of about 5% during the first 2 years, but was almost stagnant in 1971 and 1972. Investment was depressed and in FY1970/71 fell to 9% of national income, compared to a goal of 13.8%. Domestic savings, which were projected to increase to 12.6% of national income in FY1973/74, were only 8.3% in FY1970/71. India's dependence on foreign aid, however, was reduced to about 20% of public development spending at the end of FY1970/71, in contrast to 36% during the three annual plans. Deficit financing, scheduled to be reduced to about 5.5% of total expenditures by 31 March 1974, had increased to 13% of the total at the end of FY1970/71, compared to 10% during the three annual plans.

The revised plan for FY1972/73 provided for a development outlay of $5.5 billion, a 26% increase over the original plan. Emphasis was placed on areas in which India is heavily dependent on imports, especially steel and fertilizers, and on modernizing the export-oriented jute and cotton industries. The largest increases, however, were for schemes to promote rural employment and to assist drought-prone areas and the educated unemployed—items included for the first time as part of a development plan. Such schemes were to be expanded even further in FY1973/74 to

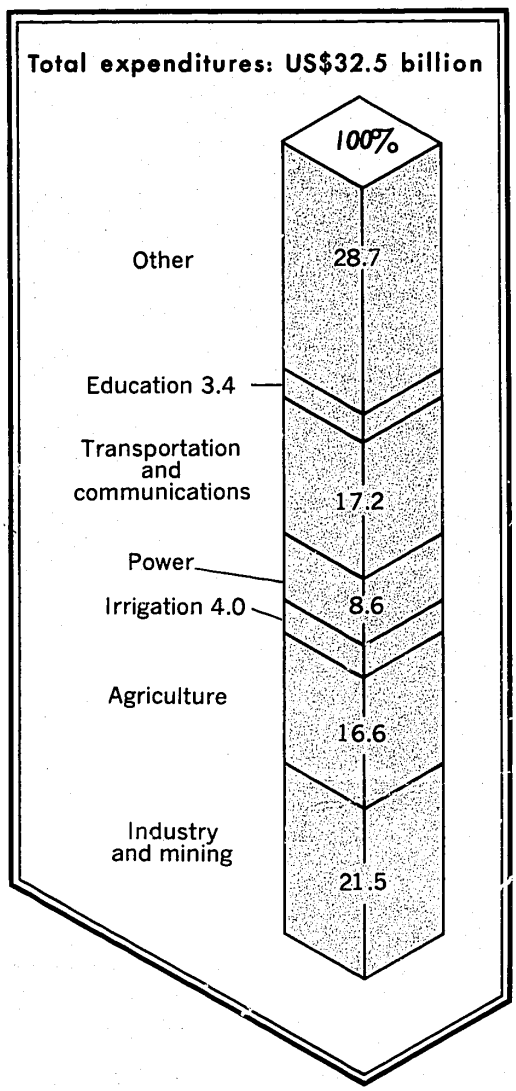

FIGURE 18. Development expenditures for the Fourth Five Year Plan (U/OU)

provide the basis for a much greater effort during the Fifth Five Year Plan, which will cover the period 1 April 1974 to 31 March 1979.

The Fifth Five Year Plan has not yet been released. Preliminary official reports, however, contain the broad socioeconomic guidelines to be followed. The plan proposes to integrate the goal of increased economic growth, which was the main emphasis in earlier development plans, with schemes to eliminate poverty. Emphasis is to be placed on expanding employment, reducing income and wealth disparities, and concentrating economic activity. The plan also reaffirms India's intention to reduce dependence on foreign aid.

3. Manpower

India's abundant reserves of manpower are a potential asset for development of the country, but they also pose acute problems, especially in terms of providing training and creating jobs. In April 1971, about 80% of the population of 547 million lived in rural areas or in villages of less than 5,000 persons, and 70% of the total population was illiterate. Most of the urban population was unskilled and unable to learn easily the complex production methods required in a modern economy. Unemployment and underemployment were widespread in both rural and urban areas, and the population was increasing faster than job opportunities.

Preliminary reports from the 1971 census provide only generalized data on major categories of workers. Even when detailed breakdowns of the labor force become available, however, comparisons with the earlier census data will be impossible because of definitional changes. For the 1971 census, a person was categorized as a worker or nonworker only according to his main activity, without considering any secondary activity. In the 1961 census, persons who were basically nonworkers, such as housewives and students, were included as workers even though few of them were formally employed, even on a part-time basis. These persons were excluded from the work force statistics in the 1971 census.

In April 1971, 183.6 million persons, or 34% of the Indian population, were in the labor force. According to preliminary reports on the census, 81% of these workers were males and 19% females. Although details on the ages of the persons in the labor force were not given in preliminary reports, earlier censuses had classified ages 15 to 59 as the normal working age group. The government is making efforts to expand job opportunities and employment by promoting labor-intensive rather than capital-intensive economic activities. In the industrial sector, the government is favoring small- and medium-scale industry over large-scale industry in terms of investment, licenses, and allocations of new materials. In rural areas, the government is promoting labor-intensive development programs such as road building, small irrigation works, and the like. The purpose of these programs is to ensure that ultimately, at least one adult in each rural family has year-round, full-time employment. During

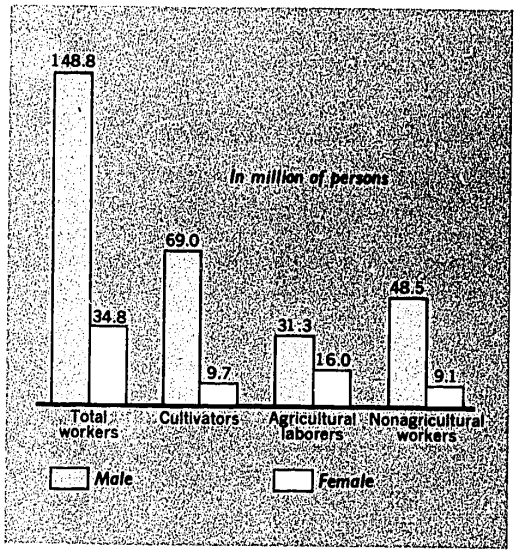

FIGURE 19. Working population, by major category, April 1971 (U/OU)

FY1971/72, for example, the Indian government allocated $100 million for programs aimed at creating 500,000 rural jobs. This number of jobs, however, is nominal compared with the number required; also, the government has been slow to utilize the allocated funds.

About 70% of the labor force is directly dependent on agriculture for a livelihood (Figure 19). There has been virtually no change in this percentage since 1900. The agricultural labor force consists of two distinct categories of workers and employment: about 79 million cultivators who either own their own land or have some land rights as tenants or sharecroppers, and 47 million agricultural workers who are landless and sell their services. The division between these two groups is tenuous, however. Indian farm holdings often consist of several small, disconnected pieces of land that are difficult to irrigate, uneconomical to operate, and generally resistant to improvements and new technology. Moreover, the marginal cultivator runs the constant risk of losing all his land rights, because he has to borrow to meet current consumption requirements and to plant his crops. The government is trying to prevent further fragmentation of landholdings beyond a minimum economic level, and is also promoting legislation to overcome extensive concentration of ownership by imposing a ceiling on the size of holdings.

The Green Revolution appears to have increased the number of landless agricultural workers, although the size of the increase cannot be determined, due to the lack of comparability between the 1961 and 1971 census data. Even before the Green Revolution, the increasing numbers of landless laborers in the countryside were causing considerable concern, because they were more likely than other farm workers to be unemployed or underemployed. Today many farmer-cultivators are on the borderline of becoming landless agricultural workers, because the land they possess—in freehold or on lease as tenants or sharecroppers—is not sufficient for their family requirements. The larger landowners, on the other hand, have sufficient resources to irrigate their land and buy fertilizer and new seeds, and are in a better position to benefit from new technology. Many landowners have resumed cultivating their own lands, as farming is now more profitable than before. Landowners are also repossessing their tenanted land due to the threat of land reform legislation, contrary to the reform's aim to give the tenant greater security of tenure. The result has been to push more tenant farmers into the landless agricultural laborer category.

On the whole, the new technology has increased the productivity of the agricultural labor force. With more intensive cropping and diversification of cropping patterns, agricultural laborers have been finding work more readily, and their wages have increased since 1966. However, due to a 25% increase in consumer prices since that year, laborers generally have experienced little improvement in real income.

In April 1971, India had 57.6 million nonagricultural workers—about 31% of the total labor force. In earlier censuses, this category included household and non-household industry, trade, business, the professions, and services. Workers in household industry mainly consist of landless laborers who do small-scale manufacturing in the home, usually with all adult members of the family participating. Although details on the distribution of nonagricultural workers in the 1971 census are not yet available, it is probable that household industry accounts for a declining share of the total and small-scale factory employment for an increasing share. The government has actively promoted industrial training programs for both small- and large-scale industry. Nonetheless, shortages of qualified workers and serious imbalances in the numbers of skilled and professional workers continue to inhibit economic progress. Industrial workers are poorly paid and subject to poor working conditions by Western standards. The government has urged employers to improve these conditions. These efforts are frustrated, however, by the excess labor supply, the government's inability to enforce labor

laws, resistance by management, worker apathy, and by the government's tendency to assign a higher priority to economic development than to labor welfare.

The urban labor force is engaged mainly in trade and services. Employment in large-scale industry continues to grow, although not as fast as it did during the 1950's. During the 1950's, employment in large-scale industry increased 4.5% annually; from 1960 to 1967 it increased 3.4% annually; and since 1967, the rate probably has slowed due to the slump in industrial output. In 1967, nearly 20% of these workers were employed in public sector industry, mainly in the manufacture of transport equipment, compared to less than 10% in 1951 (Figure 20). This trend reflects the government's policy of promoting public sector industry. On the whole, large-scale industrial employment probably has not increased as fast as small-scale industrial employment.

From 1960 through 1969, money wages increased by 6.6% annually, while industrial production increased by 6.2% annually. In contrast, during the 1950's wages increased by only 2.9% annually, while industrial production increased by more than 6.5% annually. Since 1969, this trend probably has continued as labor agitation for higher wages has increased despite the continuing slump in industrial production. Industries in which wages increased faster than the average in 1969 included petroleum and coal products, transport equipment, electrical machinery, basic metals, metal products, and textiles (Figure 21). Industries in which wage increases were far below the average for all industry were those producing wood and cork products (except furniture), leather and leather products, and nonmetallic minerals (except petroleum and coal).

Labor unrest and agitation have continued to increase since the mid-1960's. Government estimates place the number of man-days lost due to industrial unrest at 17.2 million during 1970. The number of man-days lost during 1971 probably was more than 20 million. Economic factors contributing to the labor unrest included the rise in wholesale and retail prices, the continued growth of unemployment, and government restrictions on new private investment, which contributed to many industrial closures, especially in eastern India. Strikes were most prevalent in airlines, banking, railroads, ports and docks, and public services, all highly important to economic development. A trend seemed to be developing in 1971 toward bipartite agreements (without government participation). Such agreements were reached in an airlines dispute after a 15-day lockout, in a dispute between public and private steel companies on the one

FIGURE 20. Industrial employment, by branch* (U/OU)

	THOUSAND PERSONS			PERCENT DISTRIBUTION		
	1951	1960	1967	1951	1960	1967
Public sector	237	540	911	9.3	14.3	19.2
Textiles	3	15	45	0.1	0.4	0.9
Printing and publishing	20	34	44	0.8	0.9	0.9
Machinery (excluding electric)	22	31	63	0.9	0.8	1.3
Electrical machinery	10	16	55	0.4	0.4	1.2
Transport equipment	127	252	313	5.0	6.7	6.6
Electricity and gas	8	26	42	0.3	0.7	0.9
Other	49	167	349	1.9	4.4	7.4
Private sector	2,299	3,224	3,833	90.7	85.7	80.8
Gin and presses	89	160	142	3.5	4.3	3.0
Food, except beverages	335	534	576	13.2	14.2	12.1
Tobacco	122	177	170	4.8	4.7	3.6
Textiles	1,042	1,159	1,213	41.1	30.8	25.6
Chemicals	74	110	156	2.9	2.9	3.3
Nonmetallic minerals	110	183	231	4.3	4.9	4.9
Basic metals	95	137	182	3.7	3.6	3.8
Machinery (excluding electric)	76	163	281	3.0	4.3	5.9
Transport equipment	58	94	143	2.3	2.5	3.0
Other	293	507	738	11.6	13.5	15.6
Total	2,536	3,764	4,743	100.0	100.0	100.0

NOTE—Components may not add to totals shown because of rounding.
*Large-scale industry only.

FIGURE 21. Relative wages in industry* (U/OU)

	1951	1960	1969
All-industry average index	100.0	100.0	100.0
Textiles	100.8	102.2	102.9
Footwear, apparel, and textile goods	95.5	103.6	89.9
Wood and cork, except furniture	63.1	62.4	54.7
Furniture and fixtures	90.8	75.0	82.6
Paper and paper products	92.5	94.1	98.2
Printing and publishing	101.7	89.2	96.0
Leather and leather products	72.6	68.7	77.2
Rubber and rubber products	128.0	102.8	87.8
Chemicals	83.8	97.0	94.5
Petroleum and coal products	109.3	148.5	130.4
Other nonmetallic minerals	67.5	73.3	67.3
Basic metals	132.1	109.0	100.9
Metal products (excl. machinery)	88.6	94.8	101.4
Nonelectrical machinery	96.4	89.3	81.1
Electrical machinery	119.5	104.4	104.3
Transport equipment	113.0	103.4	111.8

*Data refer to employees in large-scale industry earning less than Rs400 (about $53) per month, including basic wages, allowances, annual bonus, and money value of concessions.

hand and the labor unions on the other (without a work stoppage), and in the banking industry (with only occasional disruptions).

D. International economic relations (U/OU)

1. Foreign trade and payments

Although India has been improving some features of its international financial position since 1966, its balance of payments has been under severe and continuous pressure since the beginning of the Second Five Year Plan in April 1956. India has become increasingly dependent on foreign aid and on emergency drawings from the International Monetary Fund (IMF) to meet successive deficits on current account. During most of the First Plan, there was a surplus on current account, and foreign exchange reserves reached the equivalent of US$1,894 million by the end of the plan in March 1956. During the next 2 years, imports increased rapidly, financed mainly from India's foreign exchange reserves, which dwindled to $704 million in late 1958. The decline in reserves was slowed during the rest of the Second Plan by rising foreign aid disbursements and tightened controls on import growth. The basic balance of payments deficit continued to grow during the Third Plan. Although the utilization of foreign aid increased, the increase was not sufficient to cover the deficit, and India found it necessary to resort to the IMF for emergency balance of payments aid. While foreign exchange reserves were maintained during the Third Plan, India's obligation to the IMF more than doubled—to $287 million. The overall deficit on current account during the Third Plan was about $5 billion. In 1966 and 1967 India drew an additional $277 million from the IMF because of pressure on the balance of payments arising out of the need for massive foodgrain imports. India's borrowings from the IMF, however, were completely repaid by March 1971.

The main reasons for the improvement in certain aspects of India's International financial position since 1966 have been increased exports, a general decline in nonfood imports, and declining high level of foreign aid. In addition, receipts of $335 million in Special Drawing Rights (SDR)[6] and $437 million in debt relief during 1967-72 helped ease pressure on the reserves. During that period, India received less foreign nonfood aid annually than in the early 1960's. Nevertheless, the country continued utilizing aid at about previous levels—$900 million to $1 billion annually—by drawing some $800 million from the accumulated $3.2 billion aid pipeline.

Since 1967, India has also made some progress in reducing its large foreign trade deficit. Previously, a major weakness of Indian development policy had been its neglect of exports. During the 1950's, annual exports fluctuated around $1,260 million, without any clear upward trend. Since FY1967/68, however, exports have grown from $1,598 million to $2,085 million in FY1971/72. Also during that period, declining food imports and more stringent import controls reduced the trade deficit from $1,079 million to $331 million (Figure 19).

Although the trade deficit has narrowed, two other factors have aggravated the basic disequilibrium in the balance of payments. Firstly, the burden of servicing the large and growing external debt has increased rapidly—from $122 million in FY1960/61 to $530 million in FY1971/72 (despite $96 million in new debt relief). Secondly, India's earnings from invisibles have declined substantially, from an average surplus of $177 million a year in the Second Plan to a deficit of $110 million a year during the first 2 years of the Fourth Plan. This reflects primarily the emergence of substantial investment outflows as well as deficits in government and miscellaneous accounts. Payments of interest and dividends on foreign investment in India have increased rapidly, and India's payments abroad

[6]The SDR is a new form in international currency created by the International Monetary Fund in July 1969. Its value was on a par with the U.S. dollar until December 1971, when the value rose to $1.09; in February 1973, the value was fixed at $1.21.

for technical and professional services and royalties have become a significant drain on its foreign exchange.

Since 1957, India has tried a variety of remedial measures to ease the strain on its balance of payments, including a progressive tightening of import restrictions, export promotion, curbs on foreign travel by Indians, steps to check smuggling, and devaluation of the rupee. During the Second and Third Plans, import policy became increasingly restrictive as India's imports grew faster than exports. Imports of machinery and equipment have been financed primarily from foreign aid, as free exchange resources had to be used primarily for foodgrain and maintenance imports. Assistance to exports was gradually increased, eventually becoming a complex system of subsidies to exporters, which was cumbersome in operation, open to many abuses, and generally ineffective in promoting exports. In June 1966, the Indian rupee was devalued from Rs4.76 per US$1 to Rs7.5 per US$1, primarily to stimulate exports. Concurrently, measures were taken to liberalize imports of capital goods, raw materials, and spare parts. Import duties on these items were reduced and all regulatory duties and import entitlement schemes were withdrawn. More imports were to be rationed by price instead of by fixed quotas. For the first time, export taxes were introduced for a number of traditional exports such as jute manufactures, tea, cotton, and hides and skins. As a result, export prices of these traditional exports remained essentially unchanged, and substantial increases in revenue accrued to the government.

When the flow of exports failed to respond to the devaluation, primarily because the continuing drought held down exports of agricultural goods, export policy was again revamped. A few months after devaluation, selective incentives for some export products were revived. Cash assistance was given to engineering goods, chemicals, and a few other manufactures, and a new scheme of import entitlements was introduced. Cash assistance was initially provided at the rate of 10%, 15%, and 20% of f.o.b. value for different items, and 25% and 30% rates were later added. Other promotional efforts that have been developed mostly since 1967 include rebate of customs and central excise duties on final inputs; the supplying of domestic steel and plastic raw materials at international prices when domestic prices are higher; preferential treatment of firms exporting 10% or more of their output; preferential allotment of raw materials, such as steel, to exporters; concessionary export credit facilities; market development activities by the various export promotion councils; and quality control and preshipment inspection. While all these schemes were beneficial, their effectiveness was often diminished by inadequate and lengthy bureaucratic procedures, especially for schemes that involved payments by government agencies.

During the first 3 years of the Fourth Plan, import policy remained basically unchanged. Imports still were strictly controlled through a complex licensing procedure, and permission to import was given only after it was shown that the imports were essential for India's development and fulfilled a need that could not be filled by any domestically produced product. Each year, as import substitution progressed, a few more items were either banned or put on a restricted basis. Increased imports of bulk items have been made the responsibility of the three state trading organizations. The government has given greater priority in the issuing of import licenses to exporters and the small-scale sector. Despite preferential treatment, the small-scale sector remained at a disadvantage because it was less able to cope with the complicated procedures. During FY1971/72, the value of import licenses issued to the small-scale sector was increased by 25%, and the value of spare parts licenses was cut by one-third following the suspension of U.S. aid. India loses much production because of a lack of spare parts that has idled machinery, especially construction equipment.

In FY1971/72, exports increased to $2,085 million, or 7.9% over the average of the first two years of the Fourth Plan. The war in Bangladesh and the attendant interruption of exports from that country resulted in huge increases in India's exports of jute goods. The international monetary crisis caused little difficulty, except for the few exports sold on a deferred payment basis, and the temporary U.S. import surcharge affected only about 15% of India's exports to the United States.

Imports in FY1971/72 rose 11.5%. More than half of this increase consisted of imports intended specifically for Bangladesh refugees in India. These imports totaled about $160 million, of which foreign governments contributed about $135 million and voluntary agencies the balance. Excluding imports for the refugees, imports were only 4.1% higher than in the previous year. Although imports for the refugees probably satisfied most of their immediate needs, the demand increased for items such as raw cotton, steel, and petroleum products, spurred by the refugee support program and the December 1971 war. Foodgrain imports continued to decline, and the overall grain situation was such that all imports

apparently went into stockpiles. The largest increases in imports were in steel, nonferrous metals, and petroleum products. Low domestic steel production and lower world steel prices caused the government to grant a special, one-time liberalization of steel imports in September 1970. As a result, steel imports rose substantially in both FY1970/71 and FY1971/72. The steep rise in the value of petroleum imports was caused to a large extent by price increases resulting from the 1971 Tehran Agreement, as well as increased petroleum requirements for the war with Pakistan.

In FY1971/72, despite an increase of $97 million in the trade deficit, the overall balance of payments deficit fell, primarily because of the completion in the previous year of repayments to the IMF (Figure 22). In addition, about $160 million of the trade deficit in FY1971/72 resulted from direct imports for the Bangladesh refugees, although total assistance received for the refugees was about $230 million. In January 1972, India was allocated an additional $109 million in SDR's, its previously accumulated SDR's increased about $13 million in dollar value because of parity changes in December 1971. Total aid receipts (including refugee assistance) exceeded the finance gap, so that reserves increased by about $278 million.

About 65% of India's exports consist of agricultural products or manufactures that utilize domestic agricultural raw materials (Figure 23). Tea, jute manufactures, and cotton textiles constituted 33% of total exports in FY1971/72, compared to 52% in FY1950/51. Tea exports declined fairly steadily in the 1960's and totaled only $208 million in FY1971/72. India's share of world tea exports declined from 44% in the early 1950's to 33% in FY1970/71. Exports of jute manufactures, which stagnated during the 1950's, increased significantly in the early 1960's, but between FY1965/66 and FY1970/71 the value of jute exports declined steadily to $252 million. Jute exports jumped sharply in FY1971/72 because events in East Pakistan disrupted jute exports from India's major rival in world markets. In FY1969/70, India exported 42% of the world's jute manufactures, compared to 82% in the early 1950's. Cotton textile exports have stagnated in the last two decades, after an abnormally high volume of exports in 1950; increased production has been absorbed by the domestic market. Exports of products of newly established industries, such as transport equipment, machinery, chemicals, and iron and steel, are growing rapidly, although they still account for less than 15% of total exports. Iron and

FIGURE 22. Balance of payments (U/OU)
(Millions of U.S. dollars)

	FISCAL YEAR*				
	1967/68	1968/69	1969/70	1970/71	1971/72**
Trade balance	−1,079	−735	−225	−234	−331
Exports (f.o.b.)	1,598	1,810	1,884	***1,933	2,085
Imports (c.i.f.)	−2,677	−2,545	−2,109	−2,167	−2,416
Net debt payments	−403	−408	−451	−491	−530
Debt payments due	−444	−500	−550	−600	−626
Debt relief	41	92	99	109	96
IMF repayments	−57	−78	−167	−253	0
Other payments, net†	−72	135	−28	−205	−238
Overall deficit	−1,611	−1,086	−871	−1,183	−1,099
Financed by:					
Food aid	466	287	245	177	137
Other P.L. 480	57	12	44	25	31
Project aid	385	410	314	321	365
Non-project aid	649	458	486	464	494
IMF drawings††	90	0	123	26	120
IBRD special deposit	45	−30	−15	0	0
Refugee assistance	0	0	0	0	230
Total	1,692	1,137	1,197	1,013	1,377
Changes in reserves	81	51	326	−170	278

*1 April to 31 March.
**Preliminary.
***Adjusted for definitional changes in November 1970.
†Including invisibles, capital movements, and errors and omissions.
††Includes net SDR allocations.

FIGURE 23. Commodity composition of exports* (U/OU)
(Millions of U.S. dollars)

	FISCAL YEAR**					
	1950/51	1955/56	1960/61	1965/66	1970/71	1971/72
Agricultural products:						
Tea	169	229	257	216	198	208
Raw cotton	37	83	24	27	22	25
Cashew kernels	18	27	40	58	72	82
Vegetable oils and oilcakes	*na*	18	48	81	83	63
Tobacco	28	25	31	41	42	60
Hides and skins	10	14	20	20	5	1
Minerals:						
Iron ore	*Insig*	13	36	83	156	140
Manganese	17	22	30	23	19	14
Mica	21	18	21	24	21	21
Manufactures:						
Jute textiles	239	248	277	370	252	351
Cotton textiles (excl. yarn)	248	119	121	133	130	133
Leather	54	47	52	59	95	121
Iron and steel	*Insig*	*Insig*	20	26	121	54
Machinery and transport equipment	*Insig*	*Insig*	15	23	100	94
Other exports	*na*	416	357	508	717	718
Total exports	1,261	1,279	1,349	1,692	2,033	2,085

na Data not available.
*Values are from customs data.
**1 April to 31 March.

steel exports declined sharply in FY1971/72 from the previous year's record level because of domestic steel shortages.

Industrial raw materials and semifinished products constitute the largest category of India's imports (Figure 24). Such imports increased to 48% of the total in FY1971/72, compared to 35% in FY1950/51. Within this category, fertilizer imports grew most rapidly during the 1960's, accounting for 4% of total imports in FY1971/72. Machinery and transport equipment accounted for one-fourth of total imports and consisted primarily of capital goods for development projects and programs. Foodgrain imports have been declining as bumper domestic crops helped build up food stocks, but this trend may be reversed because of the 1972 drought. Raw cotton is still imported to supplement the domestic crop. Imports of luxury goods are negligible.

The principal suppliers of imports for development are also the principal suppliers of external assistance because India is usually required to use its development credits for imports from the donor country. Consequently, trade with the United States, the European Common Market, Eastern Europe, and Japan has grown more rapidly than trade with the United Kingdom and some Asian countries. Imports from the United Kingdom declined from 25% of the total in FY1955/56 to 12% in FY1971/72, while imports from the United States increased from 13% to 23% (Figure 25). The United States is India's primary source of imports; but the U.S. share has been falling since 1967, when it peaked at 39%, mainly because of declining foodgrain sales under P.L. 480 agreements. The United Kingdom, India's second-largest supplier, is a primary source of capital goods, iron and steel, and chemicals. Japan's share of India's imports long remained around 5%, but increased to 9% in FY1971/72; these imports consist mainly of machinery and metal products.

Although Indian exports to the United Kingdom declined from 28% of its total exports in FY1955/56 to 11% in FY1971/72, the United Kingdom continues to be a major buyer of India's tea, leather, raw tobacco, and cotton textiles. The U.S. share of India's exports was 15% of the total in FY1955/56 and 16% in FY1971/72, and consisted mainly of jute manufactures, cashew nuts, fish, and sugar. Japan's share of Indian exports rose from 5% in FY1955/56 to 11% in FY1970/71, due primarily to a large increase in iron ore purchases.

All trade with the U.S.S.R. and Eastern Europe is essentially barter trade, with settlements made in

FIGURE 24. Commodity composition of imports* (U/OU)
(Millions of U.S. dollars)

	FISCAL YEAR**					
	1950/51	1955/56	1960/61	1965/66	1970/71	1971/72
Industrial raw materials and semifinished products:						
Iron and steel	42	140	257	206	196	317
Nonferrous metals	59	54	99	144	160	136
Mineral fuels	116	115	146	144	181	259
Fertilizers, manufactured	26	5	20	82	82	108
Other chemicals	*na*	82	160	139	174	182
Raw cotton	212	120	172	97	132	151
Raw jute	58	41	16	19	*Insig*	*Insig*
Industrial products:						
Machinery	192	276	547	885	435	493
Transport equipment	86	133	139	148	78	113
Paper and paperboard	22	34	25	28	33	47
Foodgrains	209	37	381	676	284	175
Other imports	*na*	589	393	390	412	435
Total imports	1,366	1,626	2,355	2,958	2,167	2,416

na Data not available.
*Values are from customs data.
**1 April to 31 March.

rupees. India concluded its first rupee payments agreement with the U.S.S.R. in 1956, and since then has concluded similar agreements with Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania, and Yugoslavia. The trade arrangement with Yugoslavia was subsequently amended and now provides for settlement in hard currencies. Trade agreements with several East European countries provide for triangular arrangements under which India imports commodities from third countries with which the East European countries have a favorable trade balance. Trade with the U.S.S.R. and Eastern Europe increased from less than 2% of India's total imports in FY1955/56 to 11% in FY1971/72, and from less than 1% of total exports to 21% during the same period. India's exports to the U.S.S.R. reached $278 million in FY1971/72.

2. Foreign assistance

India's economic development has depended to a significant extent on large amounts of official foreign economic assistance. Through March 1972, total commitments of foreign economic aid to India amounted to about $19.8 billion. Foreign aid increased from about $800 million during the First Five Year Plan to over $6.25 billion in the Third Plan. Commitments of additional aid between FY1966/67 and FY1968/69 were $4.3 billion, and totaled $3.1 billion during the first 3 years of the Fourth Plan. Approximately half of these commitments came from the United States. By June 1972, cumulative U.S. economic aid to India was about $9.3 billion, of which about $4.8 billion consisted of surplus agricultural commodities under Title I of the U.S. P.L. 480 program. Until 1967, payment for these commodities was in rupees, most of which were returned to India as loans and grants for financing development projects. Since 1967, however, a gradual changeover to payment in U.S. dollars has occurred, and the rupee payment for P.L. 480 commodities was phased out. The switch to 100% dollar payment for P.L. 480 commodities was completed in 1971. About 90%, or $17.5 billion of India's total aid commitments, had been utilized through March 1972.

In 1958, the International Bank for Reconstruction and Development (IBRD—the World Bank) organized the Aid India Consortium to provide coordinated assistance for India's 5-year plans on an annual basis. Members of the Consortium include the United States, West Germany, the United Kingdom, Japan, Canada, Italy, France, the Netherlands, Belgium, Austria, Denmark, Sweden, Norway, and the IBRD and its affiliate, the International Development Association (IDA). Pledges from Consortium members (including food aid) during FY1966/67-FY1971/72

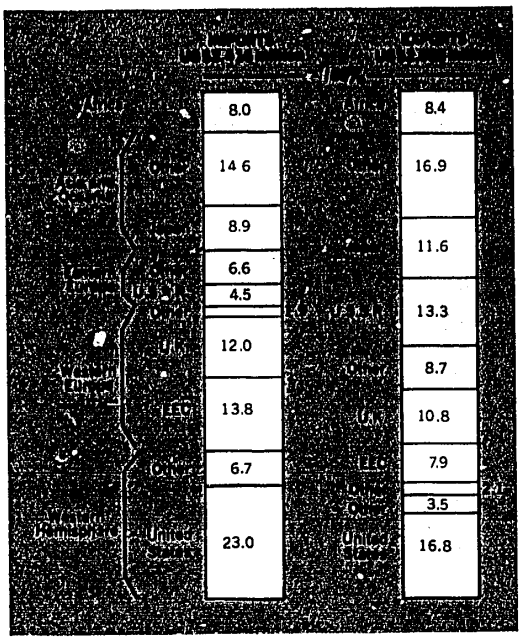

FIGURE 25. Direction of trade, FY1971/72 (U/OU)

amounted to about $6.8 billion. Disbursements during this period were $7.2 billion, distributed as follows among the members (in millions of U.S. dollars):

United States	3,504	West Germany	517
IBRD and IDA ..	1,047	Japan	355
United Kingdom .	663	Italy	185
Canada	584	Others	381

In FY1969/70, the first year of the Fourth Plan, the Consortium members pledged aid of $800 million, of which $280 million was food aid. In the following year, pledged aid was increased to about $1.0 billion, including $200 million in food aid. Of these commitments, $304 million was in the form of debt relief. In FY1971/72, pledged aid reached $1.2 billion. In FY1969/70, utilization of aid exceeded the annual authorization because the pipeline of previously committed aid was drawn down. In FY1970/71 and FY1971/72, however, aid utilizations fell slightly below new authorizations. In December 1971, the United States suspended $87.6 million in commodity aid as a result of the Indo-Pakistan war. Aid policy remained under review during 1972, but in October it agreed to a debt deferral of $29.1 million under a Consortium debt relief program. In March 1973, the United States released the previously suspended commodity aid, but made no new aid commitments.

India has received the largest amount of Communist economic aid of any non-Communist country, slightly more than Egypt. Through March 1973, Communist countries had extended about $2.0 billion in economic aid to India, or 13% of total Communist economic aid to all non-Communist countries. Most of this was in the form of credits, with the U.S.S.R. accounting for almost $1.6 billion and several Eastern European countries providing the remaining $400 million. Only small amounts of economic aid have been extended by Communist countries since 1966, when some $600 million was offered. Moreover, only $1.2 billion, or three-fifths of the total aid extended by the Communist countries, had been utilized by the end of March 1973. The largest Soviet aid commitment for a single project was $270 million for the Bhilai steel plant. Other major Soviet projects include several heavy machinery plants, two oil refineries, several powerplants, petroleum exploration, and coalfield development. In 1966, the U.S.S.R. committed $560 million of new economic aid in support of India's Fourth Five Year Plan, initiation of which was delayed until 1969, in addition to $225 million extended in 1965 for construction of a large steel plant at Bokaro. Work on the Bokaro project was not begun until April 1968 due to design problems and equipment delays. The first stage of this plant is scheduled for completion in 1973.

About 92% of the economic aid received by India has been in the form of loans rather than grants, for financing imports of industrial and agricultural raw materials and equipment. As a result of the large flow of aid over the past decade, the debt service burden has increased at an annual rate of 9% since 1967. Total debt service payments during the first 3 years of the Fourth Plan were $1,472 million, or nearly 25% of India's export earnings, even after donors had granted $304 million in debt relief. Annual servicing on the debt, net of debt relief, has grown from a level of $444 million in FY1967/68 to $626 million in FY1971/72. New credits necessary for the continuation of India's development program will add substantially to this already heavy debt burden. Taking into account debt payments, net foreign aid declined from $1.2 billion in FY1967/68 to only $500 million in FY1970/71. An improvement in the terms of new aid, a reduction in interest rates on the outstanding debt, or some form of debt refinancing apparently is needed to keep debt service at a manageable level.