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DIRECTORATE OF
INTELLIGENCE

Intelligence Memorandum

India's Foodgrain Situation: Progress and Problems

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
August 1972

INTELLIGENCE MEMORANDUM

**INDIA'S FOODGRAIN SITUATION:
PROGRESS AND PROBLEMS**

Summary and Conclusions

1. After five successive years of favorable weather and good to excellent foodgrain crops, India's production prospects this year are threatened by a late and erratic monsoon. Since the last severe drought -- in crop year 1966/67⁽¹⁾ -- a fairly impressive growth record -- especially in wheat -- and foodgrain imports of 20.5 million metric tons raised India's buffer stocks to record levels and prompted New Delhi late last year to halt concessionary foodgrain imports. The extent of the adverse impact of this summer's monsoon on crop size may not be clear until next spring. Meanwhile, New Delhi is preparing to cope with a potentially sharp drop in foodgrain availability. There are already indications that it intends to avoid importing by stock drawdowns and by crash programs for late planting. If it becomes necessary to import foodgrains, however, India's leadership will try to avoid requesting PL-480 assistance from the United States or purchasing US grains commercially. The leadership, especially Mrs. Gandhi, has been so outspoken in its criticism of the United States since the Indo-Pakistani war that India would probably exhaust all other alternatives before turning to the United States. Concessionary terms might be arranged with Canada or Australia. In any event, India's foreign exchange reserves of \$1.3 billion could be drawn down, if necessary, to purchase foodgrains on the world market.

2. India's foodgrain production increased to nearly 108 million tons in 1970/71 from 95 million tons in 1967/68, the year following the last severe drought. The size of the 1971/72 crop is still unreported and may have been as low as 106 million tons. Government subsidies encouraged

1. The crop year runs from 1 July to 30 June.

Note: This memorandum was prepared by the Office of Economic Research and coordinated within the Directorate of Intelligence.

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a rapid spread of high-yielding-variety (HYV) wheat since 1967/68, but progress in rice has been less impressive. The early types of HYV rice were disease-prone and met consumer resistance. More suitable Indian hybrid varieties have been developed, however, and their use is spreading. HYV wheat, rice, and coarse grains were planted on about 15% of the foodgrain area in 1971/72 and have raised yields substantially. More irrigation, increased double cropping, and greater use of fertilizer also contributed to output growth.

3. The so-called Green Revolution in India has generated a new set of problems, mainly related to the high wheat procurement price, which greatly increased government subsidy costs and induced farmers to shift irrigated land to wheat from other crops. The budgeted wheat subsidy for the current fiscal year is more than four times as large as last year. Wheat in some cases replaced commercial crops needed to maintain industrial output, and in other cases replaced coarse grains and pulses, which are staple foods and major sources of protein for the poorer classes. Disparities in rural income also have increased, as wealthier farmers with large holdings of irrigated land quickly adopted the HYV seeds and raised profits. Meanwhile, farmers without irrigation and with small holdings have generally been bypassed by the new technology.

4. The inevitability of periodic droughts and a rapidly increasing population are likely to continue to frustrate India's efforts toward foodgrain self-sufficiency. Demographers familiar with the Indian scene estimate current population growth at about 2.5% annually and believe it will accelerate as death rates continue to decline, while high birth rates will persist until cultural attitudes toward family size change significantly. Growth of foodgrain production averaged more than 4% annually between 1967/68 and 1970/71, but these were successive years of unusually good weather. Growth over the past decade has averaged less than 3%. India's Green Revolution still is concentrated in the winter wheat crop, is heavily dependent on rainfed irrigation, and has yet to be exposed to severe drought conditions. It remains to be seen whether that Revolution has reduced India's dependence for its foodgrains on the vagaries of the monsoon.

Discussion

Production Trends

5. Generally favorable weather and the continuing spread of the Green Revolution boosted India's foodgrains production from 89 million metric tons in 1964/65 - before the last drought years - to almost 108 million tons in 1970/71 (see Figure 1 and the Appendix). Official

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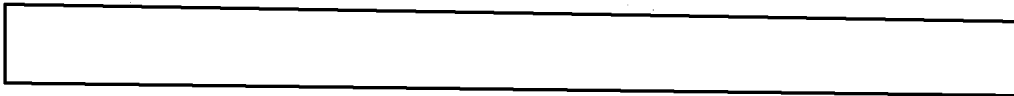
estimates for 1971/72 may not be available for several months, but Indian press reports in late July 1972 indicated that the crop may have been about 106 million tons. There are preliminary indications that coarse grains and pulses performed poorly, while the rice and wheat harvests were at record levels. Serious flooding in the Ganges Plain and a drought in some highland areas during the summer of 1971 apparently kept foodgrain production from surpassing the 1970/71 bumper crop.

6. Despite a five-year period of relatively favorable growing conditions, about 20.5 million tons of foodgrains have been imported since 1967/68 to boost per capita consumption and to build up government stockpiles. Production growth and imports permitted India to restore consumption to about its 1964/65 level and to accumulate stockpiles -- mainly domestic wheat -- of about 9.5 million tons.

7. Rising yields -- averaging about 2% annually -- have accounted for about three-fourths of the production increase since 1964/65 (see Figure 2). The increase in land area has averaged less than 1% annually, reflecting mainly an increase in multiple-cropping, although there has been some shift of commercial cropland to foodgrains.⁽²⁾ It is not possible to determine the relative influence on yields of weather conditions and technological change. The impressive performance since 1967/68 coincided with the rapid spread of the Green Revolution -- HYV seeds requiring a package of modern inputs, including large doses of fertilizer, strict water control, and pesticides. At the same time, however, it is unlikely that the Green Revolution would have had as much success without the favorable weather.

8. Wheat production, influenced by the Green Revolution more than any other crop, increased by 12% annually between 1967/68 and 1970/71. Preliminary reports indicate that wheat output may have reached 26 million tons in 1971/72, thus more than doubling since 1964/65 (see Figure 3). The HYV wheat seeds have spread rapidly, to about 7.5 million hectares in 1971/72 (see Table 1), roughly two-fifths of all wheat lands. Wheat yields have been increasing by nearly 7% annually since 1967/68 because of the spread of HYV seeds, good rainfall, and the use of more fertilizer. Wheat accounted for 25% of India's total foodgrain output in 1971/72, compared with 14% before the serious drought of the mid-1960s.

9. Although HYV seeds are used on almost as much rice land as wheat land, growth of rice production has been far less impressive. Rice output in 1971/72 is tentatively estimated at 43 million tons, compared with 39 million tons in 1964/65. Adoption of the HYV rice has been



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Table 1

India: Area Planted to HYV Seeds, by Crop

<u>Crop Year</u> ^{a/}	<u>Thousand Hectares</u>		
	<u>Rice</u>	<u>Wheat</u>	<u>Coarse Grains</u>
1966/67	888	541	457
1967/68	1,785	2,942	1,309
1968/69	2,683	4,792	1,822
1969/70	4,342	4,910	2,161
1970/71	4,654	6,677	2,428
1971/72 ^{b/}	7,214	7,439	3,233

a. 1 July - 30 June.

b. Preliminary.

disappointing mainly because IR-8 and other imported HYV seeds were susceptible to pests and disease under India's monsoon conditions. The new varieties have not been popular with Indian consumers, as they prefer non-glutinous and finer rice. Nevertheless, more area is still planted to IR-8 than to any other HYV rice seeds, but the government has tested and released for trial cultivation about 30 additional varieties of rice seeds - each adapted to specific areas of the country and developed to overcome these objections.

10. Improved yields for coarse grains (grain sorghum, millets, corn, and barley) accounted for nearly a 2% average annual increase in output between 1967/68 and 1970/71 and more than offset a decline in planted area. The size of the 1971/72 crop is still uncertain, but the planted area reportedly declined even further. It is likely that yields also declined, mainly because of poor rainfall in coarse grain areas. HYV seeds have spread to only about 7% of coarse grain areas. Although popular with farmers in some areas, HYV corn is still generally unacceptable as a staple food in India. HYV millet had been spreading rapidly, but during 1971/72 there was a reported scarcity of the new hybrid millet seed, and disease attacked the millet crop in at least one major producing state. Output of pulses generally has stagnated since the drought because of both declining area and yields. Although some progress has been made in achieving genetic improvements in pulses - three new varieties have been released - HYV seeds have not yet played a significant role in pulse production.

11. Multiple cropping has contributed significantly to increased foodgrain production. Since the last drought, the area planted to more than one crop has increased by about 1 million hectares annually, to 26 million

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hectares in 1971/72. The increase in multiple cropping was made possible mainly by improved irrigation and the shorter growing season of the HYV seeds. Even so, only about 20% of India's cropped land currently is multiple cropped, less than the irrigated area.

12. New Delhi's favorable foodgrain situation was underscored when it provided food to the 10 million Bengali refugees while they were in India, and then provided relief shipments of 650,000 tons of wheat and 100,000 tons of rice to Bangladesh. Moreover, according to an announcement by the Foreign Trade Ministry in May 1972, India planned to export about 100,000 tons of corn, 20,000 tons of high-quality basmati rice, and 7,200 tons of wheat during 1972/73, probably through bilateral trade agreements with Far Eastern countries.

13. Apart from the favorable weather and HYV seeds, the impressive success of wheat production as compared with other foodgrains is associated with the government maintenance of a high support price for wheat relative to other crop prices (see Figure 4). Since 1965/66, wheat procurement prices have increased more rapidly than those of other grains. The profitability of growing wheat was also increased by the greater yield of the HYV wheat -- about double that of the traditional varieties. Despite the higher cost of inputs needed for the HYV seeds, farmers who planted HYV wheat in 1966/67 reportedly doubled their output and increased their net income by more than 70%. Each year since 1968 the government's Agricultural Price Commission has recommended that the wheat procurement price be lowered in order to avoid rising subsidy costs and distortions in production patterns. Political pressures from the large wheat-producing states and government fear of a decrease in foodgrain production, however, have induced the Food Ministry to hold wheat procurement prices steady.

14. A dramatic increase in fertilizer use also has been a key aspect of the Green Revolution's spread. Total fertilizer consumption in India has increased by 22% annually since 1967/68, to about 2.6 million nutrient tons in 1971/72. An estimated two-thirds of all fertilizer is now used on foodgrains. The increase in fertilizer use reflects not only the expansion in use of HYV seeds but also increased fertilizer supplies from both domestic production and imports, continued favorable weather conditions, increased irrigation, and larger credit flows to farmers. Other contributing factors include greater promotional efforts such as use of audio-visual demonstrations, soil testing, regional seminars, and more retail fertilizer stores. Apparently for these reasons, use of fertilizer spread widely despite a 10% excise duty imposed in March 1969.

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15. The benefits of the Green Revolution actually reach beyond the HYV areas. As a result of the new technology's popularity, almost all classes of cultivators have experienced some improvements in income and yields from the introduction of modern methods of agriculture. Even in rice growing areas, where use of HYV seeds is still limited because of agro-climatic conditions, the introduction of fertilizers, pesticides, and other modern practices has produced a steady, if moderate, increase in yields of local varieties.

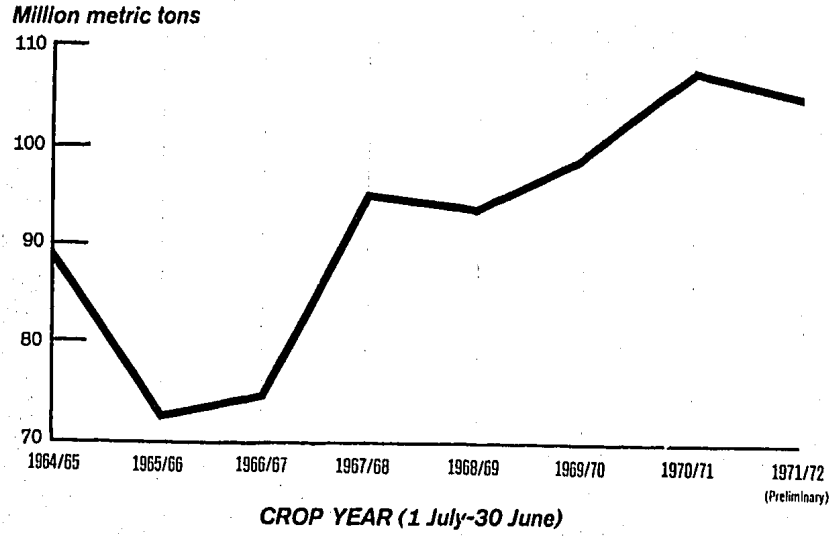
16. The total irrigated areas reportedly increased by an estimated 1 million hectares in 1971/72, as it has each year since 1968. Estimates of irrigated land vary from 25 million to 40 million hectares, depending on the definition and estimating procedures used. About four-fifths of the irrigated land is used for foodgrain production. Minor irrigation works (mainly tubewells and pumpsets) continued to be installed at a rapid rate in areas already having some irrigation. For the most part, these works are designed to increase the supply of water and to improve water control. Traditional wheat and rice areas have benefited about equally from these minor irrigation works. In June 1971, India had about 470,000 tubewells - nearly four times the number in 1966 - and 2.4 million diesel or electric pumpsets, compared with 980,000 in 1966. The pumpsets, however, are used an average of only 700 hours during the year mainly because of (a) power and fuel shortages, (b) the lowering of the water table owing to the proliferation of wells in some areas, and (c) the small size of most farms.

17. With its grain storage facilities overflowing, New Delhi halted concessional foodgrain imports at the end of 1971, after importing about 2 million tons of US PL-480 wheat in that year. Import of the last 400,000 tons of wheat from the United States under an April 1971 agreement was canceled. Foodgrain stockpiles on 1 December 1971 were already 7.5 million tons, or close to the government's maximum storage capacity. Early this year, New Delhi stated that during 1972 it intended to import only 100,000-200,000 tons of rice under existing bilateral trade agreements with Far Eastern countries and 200,000 tons of wheat on a commercial basis. Since the beginning of the PL-480 program in India in 1957, PL-480 foodgrain imports have amounted to almost 59 million tons, valued at US \$3.7 billion, and have accounted for about three-fourths of India's foodgrain imports, as shown in the following tabulation for 1957-71:

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Figure 1

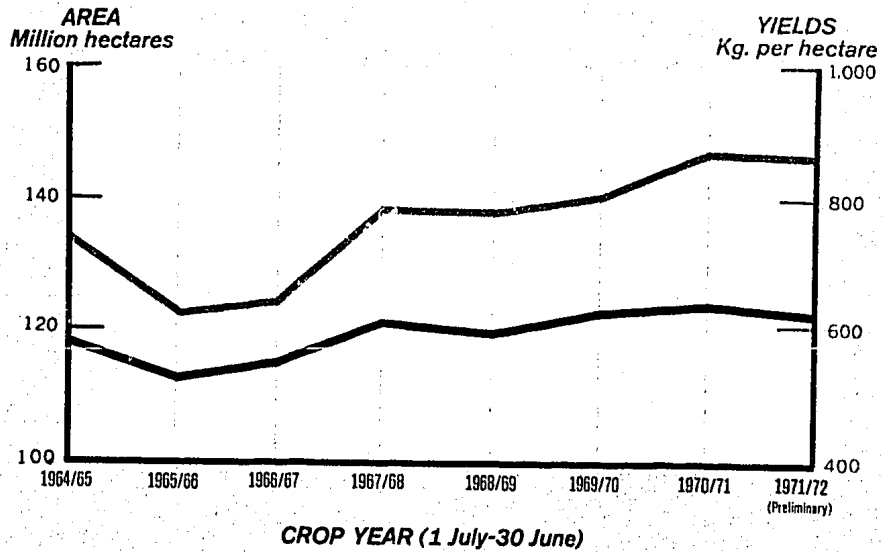
INDIA: Foodgrain Production



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Figure 2

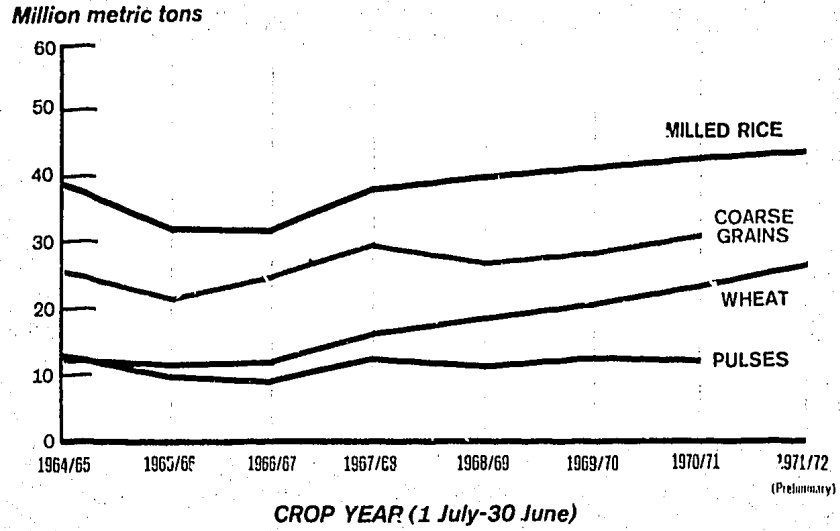
INDIA: Area Planted to Foodgrains, and Yields



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Figure 3

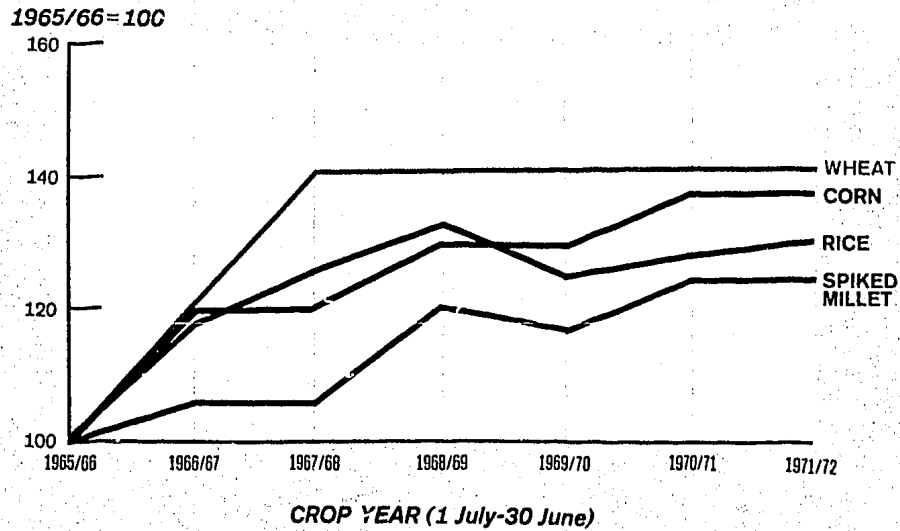
INDIA: Foodgrain Production, by Crop



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Figure 4

INDIA: Indexes of Foodgrain Procurement Prices



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	Foodgrain Imports (Million Metric Tons)		PL-480 Imports As Percent of Total
	Total	Under PL-480	
Wheat	63.6	51.4	81
Rice	7.6	1.9	25
Coarse grains	5.5	5.4	98
Total	<u>76.7</u>	<u>58.7</u>	<u>77</u>

Problems Associated with the Green Revolution

18. High wheat procurement prices, while increasing output rapidly, have also caused shifts in land use from other crops and actually reduced the quality of the Indian diet. Serious shortfalls in the production of cotton and oilseeds, as irrigated land was shifted to wheat, have slowed industrial growth. Wheat has even been competing with opium poppies, judging from the government's failure to expand poppy area to meet the strong world demand for medicinal opium. Wheat's inroads into land traditionally used for coarse grains and pulses have 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 in the Indian diet. Finally, the new varieties of wheat are low in protein as well as in amino acids, which are essential to human metabolism.

19. Wheat prices have been maintained at about double world export prices and are resulting in a heavy fiscal drain on New Delhi. The Food Corporation of India, responsible for pricing, stockpiling, and selling foodgrains through fair price shops, has been steadily increasing the amount of domestic wheat procured and stored in order to support the wheat price and to build a stockpile. During 1971/72 the Corporation bought about 6 million tons of wheat at \$102 per ton and is selling it for about the same price, thus absorbing the cost of transporting, processing, and storage. Until recently there was no budgetary subsidy necessary, because profits from the government's sale of low-priced imported wheat more than offset the losses on domestic wheat. For the fiscal year ending 31 March 1973, however, the budgetary allowance for wheat subsidies is about \$176 million, up from \$40 million the previous year.

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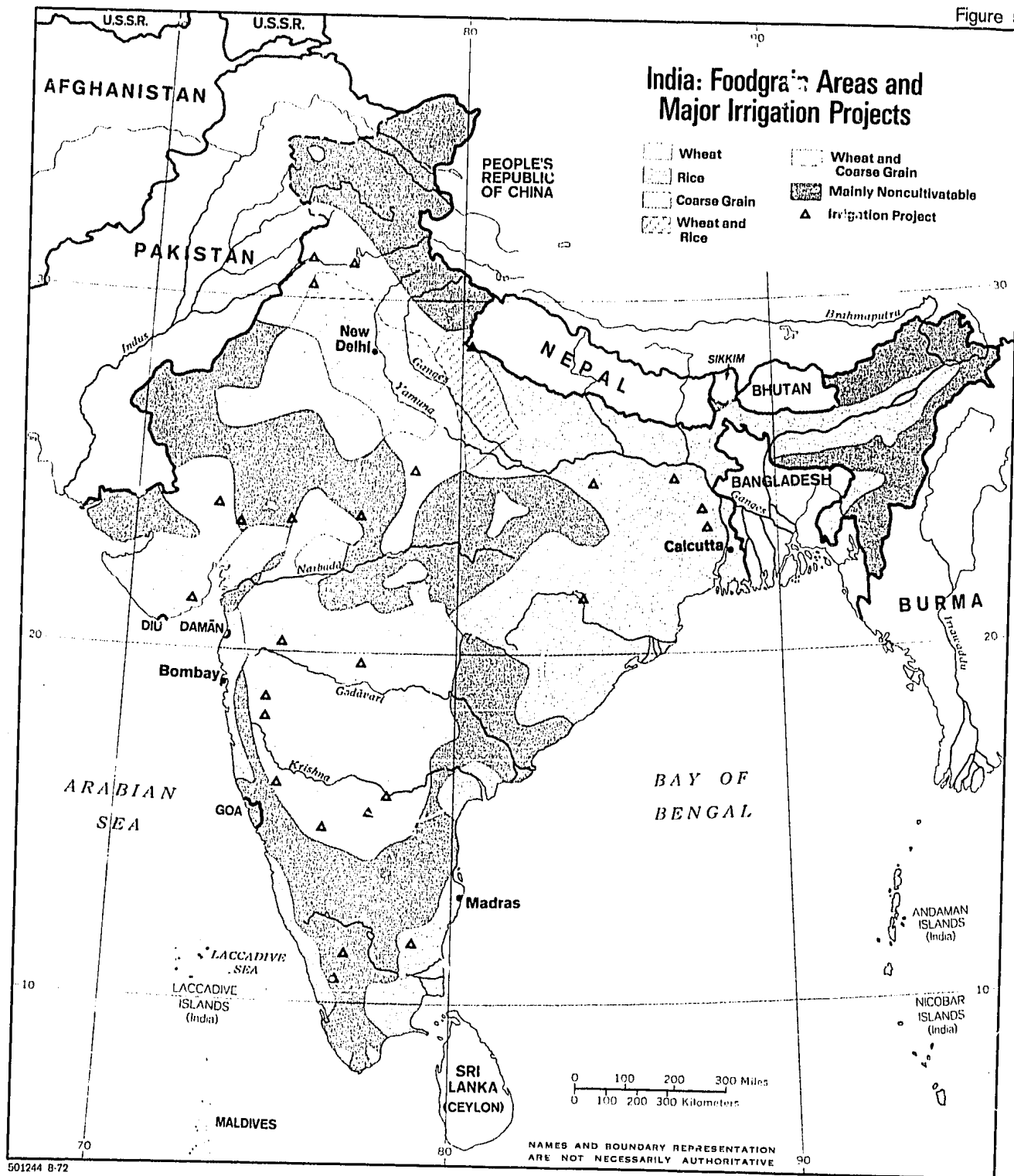
20. Rapid growth of wheat production since 1967/68 has increased six-fold the amount of wheat marketed and required to be purchased, stored, and moved to consuming areas. The resulting congestion in market centers, many of which possess no organized or mechanical facilities for handling grain, has increased grain losses and has even placed limits on production in some areas. In Andhra Pradesh, for example, the state government urged in 1970 that areas normally planted for 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 9.5 million tons in August 1972.

21. The Green Revolution has increased India's already severe income disparities among 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 in three months, greater benefits tend to accrue to irrigated areas and to farmers who have more irrigated land. Since 1962, New Delhi has concentrated its agricultural spending on the application of modern methods to raise yields in the 20%-25% of the total cultivated area with either irrigation or adequate rainfall. These areas received even more emphasis after 1966 with the advent of the HYV seeds and their requirements for water control. Consequently, progress has been concentrated in the Indo-Gangetic Plain and in river valleys and other areas of the country where irrigation is available (see Figure 5). The areas where HYV wheat could be adapted were particularly favored, especially the states of Punjab, Haryana, Rajasthan, and western Uttar Pradesh. Research was only recently begun in an effort to raise yields in areas without irrigation or adequate rainfall.

22. Even within the irrigated areas, however, the gains from the new technology have been unevenly distributed, with the benefits heavily weighted in favor of the larger farmers, while the position of small farmers and tenants actually has been made more difficult. In general, farmers with 4 hectares 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 2 to 4 hectares generally have managed to increase yields by applications of small amounts of fertilizer, thereby increasing their incomes, but have been unable to invest in land development. Farmers with 1 hectare or less - about 40% of the holdings in the country - have at best been able to stabilize their standard of living in the face of rising costs, but most are experiencing a cost-profit squeeze, and some are selling or renting their land to large 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 diversification of the

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Figure 5



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cropping pattern, agricultural laborers have tended so far to find work more readily, and their wages have increased during the past several years. But with a 25% increase in consumer prices since 1966, laborers generally have experienced little improvement in real income.

Prospects

23. Because of the erratic behavior of the current monsoon, India's foodgrain production most likely will decline – perhaps sharply – during 1972/73. More than 75% of India's farmland still lacks irrigation, and the monsoon's failure to arrive on time and with adequate precipitation is critical, reducing not only yields but also the area planted as well. This year the pre-monsoon rains failed, and the ground could not be prepared for planting in many areas. The monsoon arrived several weeks late, further delaying the planting, and in mid-July the rains ceased in most of the subcontinent. By the first week of August, however, rainfall had resumed in most drought areas. The extent of the crop failure will depend on the amount and distribution of rainfall during the remainder of August and September.

24. India is now in a much better position to cope with the effects of a poor crop than it was in 1965 when a two-year drought of major proportions began. The government has an emergency food stockpile of 9.5 million tons and a distribution system already in operation. By contrast, the buffer stock program had not yet been established in 1965, and the government had little or no stocks under its control. To cope with the food distribution problem in 1965, the central government increased the number of government-licensed fair price shops to sell foodgrains at fixed prices. This system has been continued with about 125,000 shops in the system at present, handling large amounts of grain each month. Both the central and state governments also have had experience with various rationing systems, which were continued in the major cities for several years after the drought. The Food Corporation of India, established in January 1965 to handle imported and domestic grain supplies and to control interstate trade in foodgrains, has expanded its purchasing efforts each year, procuring 6 million tons during the 1971/72 crop year alone. Although the Corporation still does not have authority to force states to surrender surplus grain, its working relationships with state governments are improving.

25. The spread of irrigation in recent years has raised production levels but will not necessarily mitigate the impact of the drought. The impact of irrigation on 1972/73 output will depend on the duration and severity of this year's drought – in the winter months as well as in the monsoon season. Nominally, about 25% of the foodgrain area has some form of irrigation, but, without the annual monsoon to fill the reservoirs and tanks and to maintain the underground water table, some of this irrigation fails.

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Tubewells are excellent sources of water for most crops if the water table does not fall, but normally tubewells alone cannot supply sufficient water to flood rice paddies. Moreover, HYV seeds are being used in India on some areas that depend entirely on rainfall for water.

26. The major long-run constraint in achieving a higher growth rate, not only in foodgrains but in other crops as well, is the shortage of irrigation. Rapid expansion of irrigation into the vast expanse of dry land in India depends on large-scale projects to utilize surface water. Prospects for such projects are poor. The Fourth Five-Year Plan (1969-73) targeted a 4.3% annual increase in irrigated area, but actual growth in the first three years of the plan was only about 2% per year. Expenditures were made at the planned rate, but physical achievements fell below plan because construction costs of projects already under way increased by 37% in three years. The number of new schemes that were planned for initiation have since been reduced. Unless additional funds are allocated, the spread of surface irrigation will be even slower in the future.

27. With much of the existing irrigated rice land already planted with HYV seeds, a slow spread of irrigation facilities will preclude a breakthrough in HYV rice similar to the breakthrough in wheat. Moreover, most rice farmers have relatively small landholdings and are unable financially to exploit the new technology. Meanwhile, India's population growth is likely to accelerate at least for several years, increasing foodgrain requirements even more rapidly than in the past. Death rates, especially among infants, are expected to continue declining, but birth rates are not expected to decline significantly. Birth control efforts thus far have been only marginally successful. Traditional attitudes favoring "extra" offspring - to offset anticipated early deaths - persist despite declining infant mortality.

28. As for the current crop year that began 1 July, a poor crop will not necessarily mean an immediate resumption of concessionary foodgrain imports. New Delhi already has indicated that it will avoid such imports as long as possible. Stock drawdowns and lower per capita consumption could tide the nation over one poor crop year, although the government may have difficulty controlling food prices. If imports are needed, New Delhi will try to avoid requesting assistance from the United States or purchasing US grain commercially. The Indian government is clearly piqued by US policy during the Indo-Pakistan war, by US suspension of some economic aid in the pipeline, and by US failure to resume economic aid shipments. New Delhi already has retaliated by restricting commercial imports from the United States through informal pressures on Indian importers. Alternatively, concessionary terms might be arranged with Canada or Australia. Of course, India could shop for commercial wheat priced

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currently at about \$70 per ton (including freight). It has foreign exchange reserves of \$1.3 billion -- its best international economic position since the late 1950s. Since its balance-of-payments problems of the early 1960s, however, New Delhi has been tight-fisted with its reserves and would accede to a heavy drawdown only after exhausting other alternatives.

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APPENDIX

Statistical Tables

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Table 2

India: Foodgrain Production

Million Metric Tons

<u>Crop Year</u> ^{a/}	<u>Rice</u> <u>(Milled)</u>	<u>Wheat</u>	<u>Coarse</u> <u>Grains</u> ^{b/}	<u>Pulses</u>	<u>Total</u> ^{c/}
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	26.21	8.02	22.97	10.62	69.82
1954/55	25.22	9.04	22.32	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	8.00	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	25.18	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	107.32

a. 1 July - 30 June.

b. Including grain sorghum, millets, corn, and barley.

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

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Table 3

India: Foodgrain Area a/

Million Hectares					
<u>Crop Year</u> <u>b/</u>	<u>Rice</u> <u>(Milled)</u>	<u>Wheat</u>	<u>Coarse</u> <u>Grains</u> <u>c/</u>	<u>Pulses</u>	<u>Total</u>
1949/50	30.52	9.76	38.84	20.32	99.28
1950/51	30.81	9.75	37.67	18.68	97.32
1951/52	29.83	9.47	38.88	18.81	96.96
1952/53	29.97	9.83	42.45	19.89	102.09
1953/54	31.29	10.68	45.37	21.77	109.06
1954/55	30.76	11.26	43.92	21.95	107.86
1955/56	31.52	12.37	43.46	23.25	110.56
1956/57	32.28	13.52	42.02	23.35	111.14
1957/58	32.30	11.73	42.91	22.58	109.48
1958/59	33.17	12.62	44.66	24.35	114.76
1959/60	33.82	13.38	43.79	24.88	115.82
1960/61	34.13	12.93	44.96	23.56	115.58
1961/62	34.69	13.57	44.73	24.24	117.23
1962/63	35.70	13.59	44.29	24.27	117.84
1963/64	35.81	13.50	43.93	24.19	117.42
1964/65	36.46	13.42	44.35	23.79	118.11
1965/66	35.27	12.66	43.16	22.08	113.17
1966/67	35.25	12.84	45.09	22.26	115.30
1967/68	36.44	15.00	47.34	22.65	121.42
1968/69	36.97	15.96	46.24	21.26	120.43
1969/70	37.68	16.63	47.24	22.02	123.57
1970/71	37.43	17.41	46.12	22.42	123.87

a. Data as reported in official statistics. The differences between the sum of the components and the totals are unexplained in Indian statistics.

b. 1 July - 30 June.

c. Including grain sorghum, millets, corn, and barley.

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Table 4

India: Foodgrain Yields a/

Kilograms per Hectare

<u>Crop Year</u> <u>b/</u>	<u>Rice</u> <u>(Milled)</u>	<u>Wheat</u>	<u>Coarse</u> <u>Grains</u> <u>c/</u>	<u>Pulses</u>	<u>Total</u>
1949/50	771	655	433	405	553
1950/51	668	633	408	441	522
1951/52	714	653	414	448	536
1952/53	764	763	462	463	580
1953/54	902	750	506	489	640
1954/55	820	803	520	500	631
1955/56	874	708	448	476	605
1956/57	900	695	473	495	629
1957/58	790	682	495	424	587
1958/59	930	789	519	541	672
1959/60	937	772	522	475	662
1960/61	1,013	851	528	539	710
1961/62	1,028	890	519	485	705
1962/63	931	793	556	475	680
1963/64	1,033	730	540	416	687
1964/65	1,078	913	572	520	757
1965/66	869	824	490	444	636
1966/67	863	887	533	377	644
1967/68	1,032	1,103	608	534	783
1968/69	1,076	1,169	545	490	781
1969/70	1,073	1,209	578	531	805
1970/71	1,134	1,335	662	516	870

a. All yields computed using unrounded data for production and area. Because of rounding, components may not add to the totals shown.

b. 1 July - 30 June.

c. Including grain sorghum, millets, corn, and barley.

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