

Our Agriculture — The Road to Self-Sufficiency

N OF INDIAN CHAMBERS OF COMMERCE AND INDUSTRY

OUR AGRICULTURE
THE ROAD TO SELF-SUFFICIENCY

CONTENTS

Foreword 5-6

I. The Background 7-9

This deals with the importance of agriculture in our economy and emphasises the need for self-sufficiency in agricultural sector.

II. Indian Agriculture since 1950-51 10-20

This section makes a brief and factual survey of the progress made during the last 15 years. It also deals with the question of PL-480 imports and the current food policy of the Government of India.

III. The Basic Issues 21-37

Some basic problems of Indian agriculture have been discussed in this section and some solutions have been proposed.

IV. Recommendations of the FICCI Agriculture Sub-Committee 38-43

Statistical Appendix 47-55

This section is entirely devoted to statistical data. The statistics given here are based on the information collected from the Government of India and F.A.O. publications.

FOREWORD

During the last five years Indian agriculture has passed through severe strains and stresses. After having achieved a record harvest in 1964-65 we are likely to end the Third Plan at a much lower level of foodgrain production than in the first year. Statutory rationing is with us once again and those who have not forgotten the difficult war and post-war years of rationing and food controls feel, naturally, upset at the prospect ahead.

The Federation has been acutely alive to the problems of Indian agriculture. It had brought out a Brochure on 'Development of Agriculture' in March, 1963. That publication was the result of the endeavours of a Sub-Committee that had been appointed by the Committee of the Federation to study the problems of agriculture, and contained the thinking and recommendations of that Sub-Committee. In August, 1964 the Federation had also organised, successfully, a broad-based Conference on Agricultural Development and Economic Progress.

In view of the shortfalls that have occurred during the past two years, the Committee of the Federation decided to reconstitute a larger - 12-man - Sub-Committee under the chairmanship of Shri R. G. Saraiya. The Sub-Committee examined broadly the main issues relating to production, productivity, prices and distribution and the present Brochure is largely the outcome of its deliberations. The Brochure highlights some of the basic problems of agriculture and makes certain suggestions which, if properly implemented, could go a long way in reducing our present dependence on imports. While all the members of the Sub-Committee are to be congratulated for the excellent work done by them, Shri Saraiya's contribution deserves special mention because he has been the moving spirit behind the

Sub-Committee. The recommendations of the Sub-Committee have been fully endorsed by the Committee of the Federation and I will be happy if the various points that have been made will encourage fresh thinking and speedy action in all quarters, official and non-official, connected with agriculture and industry for, agriculture and industry are but two faces of the same coin.

Federation House
New Delhi
10th February, 1966

S. L. KIRLOSKAR
President

I

THE BACKGROUND

The most important lesson of recent months for us is the need to speedily achieve self-reliance in as many sectors of the economy as possible. It is in the agricultural sector that the vulnerability of our economy is most apparent.

India being a predominantly agricultural country, the goal of self-sufficiency for us is a legitimate objective. Even now agriculture generates about 45 per cent of our national income and nearly 75 per cent of the population depends on agriculture and agriculture-based industries for its livelihood. Agro-based industries contribute approximately 30 per cent of the total organised industrial output and their share in our exports is as high as two-thirds of the total. Being the most important raw-material supplier for many of our industries, agriculture, to a large extent, determines the level of activity in the rest of the economy.

Till the end of the thirties, India was in a relatively happy position with regard to agriculture. She was a net exporter of foodgrains. Our difficulties started with the second World War. The catastrophic famine that overtook Bengal in 1943 served to highlight the problem. A 'Grow-More-Food' campaign was launched and has been with us all these years. No doubt, the country has achieved substantial increases in the production of both foodgrains and commercial crops. Between 1950-51 and 1964-65 the production of foodgrains increased by nearly 67 per cent but this was not enough to meet the demand, and internal production had to be supplemented by imports. The increase in the consumer demand has been more than expected, first, due to a higher rate of increase in our population than envisaged, and, secondly, due to increases in *per capita* consumption made possible by the rise in money incomes.

The unfortunate aspect of the matter is that during the past 4 or 5 years, (with the exception of 1964-65 when we had a record production of foodgrains estimated

at 88.4 million tonnes), the level of production has remained practically stagnant while our requirements have been growing. The current year will perhaps witness one of the most severe setbacks in the production of foodgrains* for, it is feared that the third Plan might close with a level of production lower than that of 1960-61. What are the reasons for this malady? It is easy to place blame on bad weather and the failure of monsoons. The question really is as to whether the vagaries of nature would continue to be the determining factor if all the programmes of agricultural development, relating to irrigation, drainage, fertilizers, pesticides, improved seeds, land reclamation, adequate credit, community development services, etc. set out in the Plans are carried out to the full. Is there something basically wrong with our policies and their administration that year after year the country is faced with increasing shortages of foodgrains, and that the surpluses of commercial crops are also proving to be inadequate? Today we have reached a situation where we find ourselves literally living from 'ship to mouth'. It is expected that in the course of 1966, the country will have to import anywhere between 10 to 12 million tonnes of foodgrains, mainly from the U.S.A. The imported foodgrains hardly amounted to 1.5 to 2 million tonnes or nearly 2 to 3 per cent of our production in the early fifties; they would now be as much as 16 to 18 per cent of the indigenous production.

Non-fulfilment of Plan targets is not, however, the sole reason for our present difficulties. There are certain glaring problems which have probably become endemic to Indian agriculture. We have too many people and too few developed resources. With a mere 2.2 per cent of the world's total land area, India supports more than 14 per cent of the world population. In other words, too many struggle to wrest survival from land which is old and has been exploited for a longer period. Our Plans had started with the basic premise that population would grow at an annual rate of 1.2 to 1.5 per cent. This has, however, proved to be a serious under-estimation for, the population is now increasing at nearly 2.15 per cent per annum. At the existing level of consumption a minimum annual increase of 2.15 per cent in agricultural production would, therefore, be required to keep pace with the increase in population. However, this margin is too thin. It has also to be noted that the shortages that we are talking about are in the context of an average intake of calories which is perhaps one of the lowest in the world.

All said and done a lasting solution of our problems is possible only through our own efforts. Dependence on foreign assistance is necessary for short periods but

* Recent estimates put the foodgrains production for 1965-66 between 76 and 80 million tonnes.

the habit of such dependence would be harmful in the long run as it would tend to generate a sense of complacency. Apart from this, there are considerations of national prestige and security which amply demonstrate the necessity to be self sufficient. At the same time it has to be realised that the road to self-sufficiency is going to be an extremely difficult one. There is, however, no reason for despondency. It is for the present generation to strive hard to ensure a more comfortable position in the not-too-distant future.

II

INDIAN AGRICULTURE SINCE 1950-51

First and Second Plan

The first Five Year Plan placed relatively greater stress on programmes designed to increase agricultural production. The emphasis in the second Plan was on industrial production but the total outlay on agriculture was, in fact, higher than in the first Plan by more than 50 per cent. In the two Plans, taken together, an outlay of Rs. 1,551 crores was undertaken, nearly half of which was towards medium and major irrigation and flood control schemes. The break up of outlays is as follows:

TABLE I

	<i>Planned</i>	(Rs. crores) <i>Actual</i>
Agricultural Development (including Community Development)	925	821
Irrigation	765	730
TOTAL	<u>1,690</u>	<u>1,551</u>

In spite of the urgency with which agricultural development was expected to be undertaken in the first ten years of Planning, the actual outlay fell short of the Plan allocations by about Rs. 140 crores. In physical terms, the gap would be considerably higher. The shortfall in the outlays was spread over almost all aspects of agricultural and rural development.

The Third Plan

In the third Plan the total outlay envisaged for programmes of agricultural development is Rs. 1281 crores of which major and medium irrigation accounts for Rs. 599

crores, minor irrigation Rs. 176 crores and agricultural production, community development, soil conservation and co-operation for the balance. The framers of the third Five Year Plan had stated that "development of agriculture based on utilisation of manpower resources of the countryside and the maximum use of local resources holds the key to the rapid development of the country". The Plan was so aimed as to achieve self-sufficiency in foodgrains and increase agricultural production to meet the requirements of industry and exports. The programmes had envisaged at nearly doubling the rate of growth of agricultural production. The results are, to say the least, disappointing.

Despite three Plans and sizeable investment in irrigation Indian agriculture still depends largely on timely and adequate rainfall and it will not be wrong to say that it continues to be a 'gamble in monsoon'. During the current crop year, the south-east-monsoon has been erratic. Rainfall has been insufficient particularly in Orissa, Madhya Pradesh, Maharashtra, Uttar Pradesh, Rajasthan and Gujarat. The north-east monsoon has not also been adequate. The unsatisfactory state of the current crop has affected the availability and prices of foodgrains. In the third Plan it was originally envisaged that the total foodgrain production would be 102 to 103 million tonnes, of which rice would be about 45.7 million tonnes, wheat 15.2 million tonnes, millets 23.4 million tonnes and pulses 17.3 million tonnes. In terms of percentages foodgrain production was expected to go up by 30 per cent., of commercial crops by 31 per cent and of all crops by 30 per cent. The revised foodgrains target aimed at a modest increase of only 13.6 per cent over the actual production at the beginning of 1960-61. Even this appears to be beyond reach.

TABLE II

Targets of Production in the Third Plan

	(Million tonnes)		
	<i>1960-61</i>	<i>1965-66</i>	<i>Percentage Increase</i>
Estimated (when the third Plan was formulated)	78.00	102.00	31.0
Actual	80.97	*92.00	13.6

anticipated in the Memorandum on Fourth Plan

The Table shows that whereas we had expected to achieve an increase of 31 per cent over the five years of the third Plan, the targets had to be revised downward and according to the Memorandum on the Fourth Plan it was anticipated that the increase would be only 13.6 per cent over the same period. The actual increase over the first four years of the third Plan was of the order of 9.1 per cent. The latest unofficial crop estimates, however, place the total foodgrain production for 1965-66 at 76.1 million tonnes only which will be 12.3 million tonnes less than the previous year's record production of 88.4 million tonnes. The average annual output in the third Plan would thus come to about 80.9 million tonnes only which would be roughly equal to the production for the last year of the second Plan at 80.97 million tonnes. A measure of the slow progress in this sector is provided by the following Table:

TABLE III

	<i>Envisaged 1961-62 to 1965-66 (Average)</i>	(Million tonnes) <i>Production 1961-62 to 1965-66 (Average*)</i>
Total foodgrains	86.80	80.90
Rice	39.40	34.95
Wheat	12.10	11.25

Detailed figures of production of foodgrains and commercial crops are given in *Appendix I and II*.

Indices of Area, Production and Productivity

Taking the agricultural economy as a whole, the index number of production (base year 1949-50=100) rose by 44.9 points from 1950-51 to 1963-64. During the same period productivity has risen at a slower rate, by about 20 per cent, which works out to a simple rate of over 1.5 per cent per annum. It is, however, noteworthy that productivity in the case of foodgrains has risen at a higher rate than that of commercial crops. The index number of productivity for foodgrains (base year 1949-50=100) increased from 92.4 in 1950-51 to 115.0 in 1963-64, whereas in the case of commercial crops the index number of productivity during the same period went up from 95.6 to 102.8. It would appear that increases in the production of commercial crops have been achieved mainly through putting additional acreage under these crops because

* Provisional

while the index of acreage under foodgrains rose by 19.4 points only between 1950-51 and 1963-64, the index of acreage under commercial crops increased by 36.8 points. The following Table shows the index numbers of Area, Production and Productivity in respect of foodgrains and commercial crops. Detailed crop-wise indices are given in *Appendix III, IV and V*.

TABLE IV
Index numbers of Agricultural Production, Area and Productivity

(Base : Agricultural Year 1949-50=100)

Year	Foodgrains			Non-Foodgrains			All Commodities		
	Production	Area	Productivity	Production	Area	Productivity	Production	Area	Productivity
1950-51	90.5	97.9	92.4	105.9	110.8	95.6	95.6	99.9	95.7
1955-56	115.3	111.9	103.0	119.9	130.7	91.7	116.8	115.0	101.6
1960-61	135.6	114.6	118.3	147.9	139.2	106.3	139.7	118.5	117.9
1961-62	137.5	116.7	117.8	149.2	146.0	102.2	141.4	121.4	116.5
1962-63	130.4	117.5	111.0	151.0	148.8	101.5	137.2	122.5	112.0
1963-64	134.9	117.3	115.0	151.8	147.6	102.8	140.5	122.2	115.0

Source : Agricultural Situation in India. (Directorate of Economics & Statistics, Ministry of Food & Agriculture.)

Imports

Because of the shortfalls in food production, and the increase in the population in the past 15 years, India has been importing foodgrains to supplement domestic production. Rice and wheat form the major part of these imports. Imports of rice and wheat in recent years have been as follows :

TABLE V

Country	1957	1960	1961	1962	1963	(Thousand tonnes)	
						1964	1965* 9 months Jan.—Sept.
RICE							
Burma	484	336	160	201	173	152	—
U. S. A.	197	257	194	189	300	332	—
China	14	—	—	—	—	—	—
Pakistan	12	—	—	—	—	71	—
Burma							
(Through U.S.S.R.)	34	—	—	—	—	—	—
Viet Nam	7	—	—	—	10‡	—	—
U. A. R.	—	106	30	—	—	29	—
Thailand	—	—	—	—	—	35	—
Cambodia	—	—	—	—	—	25	—
TOTAL	748	699	384	390	483	644	571
WHEAT							
Canada	11	24	158	45	19	107	—
U. S. A.	2,717	4,040	2,538	2,847	3,898	5,254	—
Australia	170	322	396	358	156	261	—
TOTAL	2,898	4,386	3,092	3,250	4,073	2,621	3,675

* Estimated

‡ Relates to South Viet Nam

Sources : 1. Bulletin on Food Statistics (Directorate of Economics & Statistics, Ministry of Food & Agriculture).

2. Ministry of Food & Agriculture, (Department of Food) Annual Report 1964-65.

The bulk of the imports of foodgrains have been financed from PL-480 assistance from the U. S. A. No doubt, when food shortage became acute, imports were also made from Australia, Canada, Burma, Pakistan, Thailand, Cambodia and the U. A. R.

Even so, imports under PL-480 constitute about 90 per cent of the total. Large scale dependence on American wheat under PL-480 agreements began in 1956 only as a measure to contain the rise in food prices. After nearly a decade we are still dependent on PL-480 supplies to keep open famine at arm's length.

PL-480 Assistance

When on 4th November, 1965 a Supplementary Amendment to the ninth Indo-U. S. PL-480 Agreement assured the shipment to India of a further half a million tonnes of wheat, it brought the total value of agricultural commodities to be supplied to India under this programme to Rs. 1442.5 crores. The details of these Agreements are given in *Appendix VI*. At the prices prevailing, when they were signed, it was estimated that the PL-480 Agreements and Amendments would provide for a total of 38.9 million tonnes of wheat, 1.7 million tonnes of rice, 1 million tonnes of maize and sorghum, 2.3 million bales of cotton and considerable quantities of tallow, tobacco, soybean oil, canned fruits, etc. Subsequent price fluctuations have increased or decreased the actual quantities of commodities purchased by India. For instance there has been a slight increase in the amount of rice obtained and a slight reduction in the amount of wheat. A Table showing the various commodities imported under PL-480 agreements till 4th November 1965 is given in *Appendix VII*.

Immediately after the out-break of the conflict forced upon India by Pakistan, it seemed as if the U. S. Government was not willing to have a long-term agreement to supply commodities under PL-480. Fortunately, the latest developments have given cause for satisfaction and indications are that regular supplies would continue. The Union Food and Agriculture Minister's visit to U. S. A. in December 1965 has resulted in a promise by the U. S. A. to supply us 10 million tonnes, and if necessary, 15 million tonnes, of foodgrains during 1966. However, we have to assure the countries assisting us that efforts will not be spared to achieve self-sufficiency.

Recent Developments with regard to Food Policy

Whenever the country is faced with shortages of any kind, the first reaction of Authority is to blame the wholesale and retail trade. It is now being increasingly realised that while a fast rising population resulting in increased consumption might be the more important reason, the growing capacity of the farmers to hold stocks should

also be taken into account. These farmers, who also act as traders in the rural areas, are in a position to withhold stocks from the market for long periods in expectation of better prices. This is evident from the trend of market arrivals.

Market Arrivals

Market arrivals of major foodgrains have shown a fall from season to season. According to a survey conducted by the Department of Food in the Ministry of Food and Agriculture, market arrivals for rice in "94 selected markets in the country declined by 5.1 per cent in 1962-63 over 1961-62 and by 20.3 per cent in 1963-64 over 1962-63, despite an increase in production in 1963-64. During 1964-65, a year of record rice production, this downward tendency in market arrivals has continued, the arrivals during October, 1964 to July, 1965 being 9.7 per cent lower than in the corresponding period of the previous year". A similar survey in respect of wheat arrivals in 60 selected markets discloses that arrivals declined by 5.2 per cent in 1963-64 over 1962-63 and by 25.7 per cent in 1964-65 over 1963-64. Even during the marketing season, April 1965 to March, 1966, despite a substantial increase of 22 per cent in production "arrivals continued to show a fall, being 13 per cent lower in April to July, 1965 than the same period in the previous season". Market arrivals of jowar have similarly been showing a falling trend. According to the Ministry, this progressive decline is "attributable to, *inter alia*, larger retention by agriculturists for consumption and for payments in kind and in the case of big producers to the withholding of stocks in expectation of higher prices". The tendency seems to have been accentuated further by the irregular monsoon this year. The findings of the Ministry are given in the following Tables.

Year	Number of Markets	April to June	July to September	October to December	January to March	Total April to March (Col. 3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1961-62	60	1,981	660	636	591	3,868
1962-63	60	2,416	653	493	647	4,209
1963-64	60	2,311	680	565	433	3,989
1964-65	60	1,555	556	429	425	2,965
			(227)			(1,782)
1965-66	60	1,329	(222)			(1,551)

Note : Figures in brackets under column 4 relate to July and under column 7, April to July.

TABLE VII
RICE (including paddy converted into rice)

Year	Number of Markets	(Thousand Quintals)				
		October to December	January to March	April to June	July to September	Total October to September (Col. 3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1961-62	94	3,777	4,429	3,050	1,962	13,218
1962-63	94	3,491	4,334	2,887	1,836	12,548
1963-64	94	3,133	3,286	2,181	1,404	10,004
					(457)	(9,057)
1964-65	94	2,987	2,834	1,988	(372)	(8,181)

Note : Figures in brackets under column 6 relate to July and in column 7, October to July.

Source : Ministry of Food & Agriculture (Department of Food).

The question may well be asked as to what extent the fall in the market arrivals of major foodgrains from season to season can be attributed to disturbances in the market economy and the increasing role played by the State in the trading of foodgrains. Continued talk about the scarcity of foodgrains, the introduction of State trading, the establishment of the Food Corporation of India and the talk about rationing have no doubt had a psychological effect on market arrivals.

The Food Corporation of India was established on 1st January, 1965 with the expectation that the Corporation would undertake purchase, storage, movement, transport, distribution and sale of foodgrains all over the country. Thus in theory, the Corporation was to play the key role in the transfer of foodgrains from surplus to deficit States. It cannot, however, be said with certainty whether in actual practice the Corporation has been able to achieve these aims because the quantities which the surplus States would release are unfortunately determined by factors not always economic. Reports have been appearing in the Press about the interference in the working of the Corporation by State Governments. Its Chairman, who has recently relinquished the office, has observed that the Corporation could have started monopoly procurement atleast in the 58 surplus districts of the country which accounted for 48 per cent of the marketable surplus but many of the State Governments were not in favour of it. An impression has thus been created that State Governments have been adopting a parochial attitude in the matter.

Food Policy

The current food policy of Government was formulated in three stages. First, there was the meeting of State Chief Ministers at Bangalore in July 1965. The meeting referred the issue to a Sub-Committee of Chief Ministers. The findings of the Sub-Committee were later considered by another meeting of Chief Ministers early in August 1965 and by the Union Cabinet thereafter. The salient features of the new policy are :

- (i) Statutory rationing will, as soon as possible, be introduced in cities having a population of one million and above in the first instance. The cities that would be affected are Calcutta, Madras, Bombay, Delhi, Hyderabad-Secundrabad, Bangalore, Ahmedabad and Kanpur. Rationing will also be introduced in areas having heavy concentration of industrial workers. These areas will be selected in consultation with State Governments.
- (ii) The existing zonal restrictions* on the movement of rice and wheat will continue except that after the introduction of statutory rationing Delhi no more forms part of the Northern Zone.
- (iii) As recommended by the Agricultural Prices Commission, surpluses and deficits in different States will be assessed and periodically revised by the Planning Commission assisted by the Agricultural Prices Commission. The decision of the Planning Commission will be binding on all States. The Planning Commission will draw up a National Food Budget on the basis of the available supply of foodgrains (procurement plus imports). Each surplus State will be expected to deliver to the Central pool such quantities as may be determined by the Planning Commission. The deficit States will be required to plan their distribution in accordance with the allocations plus such additional procurement that they may find necessary in order to meet their commitments.

* There are at present 9 wheat zones, viz : Punjab and Himachal Pradesh; Uttar Pradesh; Rajasthan; Madhya Pradesh; Bihar; Maharashtra-Goa; Gujarat-Daman and Diu; The four Southern States; Residual Zone (West Bengal, Orissa, Assam, Tripura and Manipur).

For rice, from 27th November, 1964 each State is a zone in itself.

- (iv) The existing restrictions on the movement of coarse grains and gram will continue (This means that the surplus States which have traditionally been exporting coarse grains to deficit States should continue to do so on a regulated basis and that the restrictions on the movement of gram may continue till next crop but 50 per cent of the stocks held by traders might be permitted to be exported).
- (v) Since it was not possible to achieve uniformity, State Governments may decide and formulate their own programmes of procurement. It was recognised that monopoly procurement on a national scale may not be feasible.

The basic frame-work of the policy continues, except that Government now desire to expedite the introduction of statutory rationing. Calcutta, Delhi, Madras and Coimbatore are already under statutory rationing and it will soon be extended to other cities over one million of population. It is expected that by May 1966 most of the towns with over one lakh of population will have come under rationing.

Emergency Food Programme

More recently Government have felt that further reorientation in policy was called for to cope up with the emergency that has arisen. Accordingly, certain measures have been initiated. The State Governments have been asked to—

- (i) raise an additional crop, over and above the existing ones, in a few selected irrigated areas;
- (ii) promote cultivation of subsidiary crops;
- (iii) organise vegetable cultivation in urban and sub-urban areas;
- (iv) prepare and bring under cultivation some land falling within the areas of new irrigation projects of which the full potential is not being utilized;
- (v) arrange for the preparation of farm manure in compost pits on a well planned basis; and
- (vi) mobilise electric and diesel pumps for irrigation purposes.

The programme also proposes to maximise water availability for growing two crops or more annually and thus bring an additional area of 2.5 to 3 million acres under the *rabi* and other summer crops immediately.

Annual Plan for 1966-67

In the formulation of Annual Plan for 1966-67 highest priority is being given to agricultural production, particularly, the schemes which are quick yielding in nature and would help augment production in the shortest possible time. Adequate funds are being made available for the purpose. It is proposed that the total outlay of Rs. 268 crores should be earmarked by the States for agricultural programmes in 1966-67 as against the outlay of only Rs. 187 crores approved so far for 1965-66.

The Central Cabinet is also reported to have approved the Union Food and Agriculture Ministry's fourth Plan programmes envisaging a total investment of Rs. 2,400 crores, including the foreign exchange component of Rs. 770 crores; out of the latter, it is expected that Rs. 700 crores will be spent on the import of fertilizers alone, and the balance of Rs. 70 crores on pesticides, insecticides, agricultural equipment, etc. During 1966-67 it had first been decided to import Rs. 46 crores worth of fertilizers to which another sum of Rs. 20 crores was added later. In reply to the food debate in the Lok Sabha in December, 1965 the Union Food and Agriculture Minister gave an assurance that he would hold himself 'personally responsible' if self-sufficiency was not achieved by the end of fourth Plan. He also stated that the crash programme for increased food production had been tested by economists, scientists and foreign experts and all were agreed that it was the right approach. Under the programme over 32.5 million acres of land were being selected for intensive cultivation to yield an additional 25 million tonnes of foodgrains.

III

THE BASIC ISSUES

It is not as if awareness about the problems of Indian agriculture is something new or of recent origin. Many commissions and committees have reported on the conditions of agriculture and rural economy in India since 1880. The Famine Commissions (1880, 1890, 1891), the Irrigation Commission (1903) and Committee on Co-operation (1915) had made recommendations for the improvement of agriculture and for the economic betterment of the rural population. A more comprehensive enquiry was undertaken by the Royal Commission on Agriculture (1928). Again, a Famine Enquiry Commission reported in 1945, the Foodgrains Policy Committee in 1948, Imported Foodgrains Clearance Committee in 1949, the Grow More Food Policy Committee in 1951, the Grow More Food Enquiry Committee in 1952 and the Foodgrains Enquiry Committee in 1957. There have been a few other studies in recent years by the World Bank, the Ford Foundation and the USAID. These Reports give an assessment of the different aspects of agricultural situation and factors affecting agricultural progress. The basic points have been isolated and emphasised. Therefore, it is not as if the remedies are unknown. On the other hand, they have been repeated often. The important task has, as always, been a proper and effective implementation of the suggestions and recommendations.

For purposes of a Study of limited nature, such as this, the problems of agriculture could perhaps be grouped under three heads, *viz*:

- A - An appropriate land policy;
- B - Adequate and timely supply of agricultural inputs, such as, improved seeds, fertilizers, pesticides, irrigation facilities and implements; and
- C - Adequate credit and marketing facilities for the farmer to help him acquire the needed inputs and implements and to sell his produce at remunerative prices.

A - LAND POLICY

Since Independence, a policy of abolition of intermediaries and promotion of peasant farming as the main instrument of agricultural development has been carried out. On account of the difference in the type of land, the character of peasantry and its material background, as also due to lack of uniformity in the implementation of rural development programmes, the success of agrarian policy has widely differed from State to State and even from area to area within the same State. Some legislative measures, particularly the Seventeenth Amendment to the Constitution, have unfortunately introduced considerable insecurity in the mind of the farmer, more so of the large scale farmer. The Seventeenth Amendment was brought forward to amend Article 31A of the Constitution. It was necessitated by the judgment of the Supreme Court declaring certain vital provisions of the Kerala Agrarian Relations Act, 1960 *ultra vires* of the Constitution. The amendment has changed the definition of the term 'Estate' so as to include therein land under *Ryotwari* settlements and also all other lands in respect of which provisions are normally made in land reforms enactments of the various States. It includes any land held or let out for purpose of agriculture or for purposes ancillary thereto, including waste land, forest land, land for pastures and sites of buildings and other structures occupied by cultivators of land, agricultural labourers and village artisans. The effect of the amendment was that the right of the citizen in respect of land has been made non-justiciable. It was, therefore, only natural that an amendment of so sweeping a nature should generate a sense of insecurity. This sense of insecurity is acting as a disincentive to investment in land and is one of the factors adversely affecting agricultural production. There is, therefore, need to have long term land policy which would avoid these unsettling consequences.

The Ceilings Legislation

Early in 1961 when the third Five Year Plan was under formulation, the Federation had urged upon Government the need for operating agriculture as an industry so as to increase productivity in the agricultural sector. It was also urged that ceiling legislation should not apply to the well managed farms and sugarcane farms. It would be recalled that the second Plan had already envisaged exemptions from ceilings of the following categories of farms:

- (i) Tea, coffee and rubber plantations;
- (ii) Orchards where they constitute reasonably compact areas;

- (iii) Specialised farms engaged in cattle breeding, dairying, wool raising, etc;
- (iv) Sugarcane farms operated by sugar factories; and
- (v) Efficiently managed farms which consist of compact blocks on which heavy investment or permanent structural improvements have been made and whose break-up was likely to lead to a fall in production.

It was recognised that these recommendations were based on three important considerations : First, in undertakings like plantations, industrial and agricultural work had to be closely integrated. Secondly, in certain specialised branches of agriculture, such as horticulture, cattle breeding, dairying, etc. investment had to be made on a long-term basis and several years elapsed before the output could be realised. The Planning Commission, therefore, felt that the considerations urged in the second Plan and the recommendations regarding exemption from ceilings of efficiently managed farms and of sugarcane farms operated by sugar factories remained generally valid in the third Plan and that there were advantages in following the proposed course. It is, however, unfortunate that this recommendation of the Planning Commission has not been followed by State Governments on a uniform basis. In some cases even efficiently managed modern farms run by sugar industry have not escaped the threat of the ceilings law. The continued need to protect these farms is amply borne out by the observations of the Study Group on Agricultural Commodities and Agriculture Based Industries set up by the Board of Trade. The Study Group observed that the tiny size of our holdings was a serious impediment to productivity. If added :

“Against 2-3 acre farms in India the size of farms is as large as thousands of acres in other countries. On the one hand, we are quick to point to the higher yields in the other countries, and, on the other, we have passed laws which put a premium on antiquated mode and techniques of cultivation. The exemption of plantation crops from ceiling laws is a step in the right direction but this is not universally followed. If we have to step up our exports of agricultural commodities, at least the important foreign exchange earning crops like oilseeds, cotton, tobacco, sugarcane, cashew, spices, should be exempted from the ceiling laws. It is on the basis of this selective approach in the application of land laws that both the harmful effects of their application and the dislocation that would be caused to the process of farming can be minimised.”

It will indeed be unfortunate if merely for doctrinaire considerations existing farms are brought within the purview of the ceiling laws for, they have not only attained a

high level of yield per acre but also serve as a model (and occasionally as seed farms) for cultivators in the surrounding area. In some areas a new type of progressive farmer has emerged and he has shown considerable dynamism in improving agricultural production by employing improved and modern methods. This farmer needs to be encouraged so that his potentialities are fully utilised in the national interest.

Farming by Joint-Stock Companies

There is another aspect of this question. Apart from protecting modern large-scale farms from ceiling laws, Government should allot, on a long-term lease, cultivable waste lands to joint-stock companies willing to develop and farm such lands on large scale and under modern methods of cultivation. It appears that this particular question is at present under consideration of the Ministry of Food and Agriculture in consultation with the Land Reforms Implementation Committee of the National Development Council.

B – THE INPUTS

The Experience abroad

Agricultural inputs, if properly applied, have the capacity to increase the yields manifold. This has been amply proved by the farmers of U. S. A. and Japan. Nearly a hundred years ago 70 per cent of the U. S. population had to work on land to feed the American nation – roughly the same percentage as obtaining in India today. The U. S. farm revolution has increased the productivity by leaps and bounds, so much so, that today only 8 per cent of the U. S. population works on land, yet this 8 per cent produces more food than a nation of 200 million can consume. On an average, one American farmer feeds himself, 25 other Americans and 3 persons overseas. Approximately, the same acreage is cultivated in India and the U. S. A. but the current American yields are anywhere two to five times as large as those in India. It is worth noting that in recent years American farm productivity has increased twice as fast as that of skilled U. S. industrial labour. However, all this progress has not been attained through the waving of a magic wand. It has been brought about by sustained application of science and technology to agriculture; it means better education of the farmer, carrying the results of research from the laboratories to the farm, soil analysis, use of appropriate chemical fertilizers and manures on a sustained basis, introduction of improved varieties and types

of crops and livestock, better feeds for poultry and livestock and use of chemicals for controlling weeds, insects and diseases. Irrigation and drainage are, of course, no less important. While in the U. S. A. the size of the average holding and of individual farm is very large as compared to India, Japan with small sized holdings provides an outstanding example of the successful application of science and technology for increasing agricultural production. Small holdings in Japan preclude the use of heavy machinery, yet their crop yields are among the highest in the world. Japan's experience proves that India and other developing nations which do not yet employ extensive mechanisation can still greatly increase their agricultural production through the application of modern scientific techniques.

With the state of our current technological advance, it would perhaps be unfair to compare India with U. S. A. and Japan. But even in relation to many developing countries our levels of agricultural production and productivity are low. This is apparent from the following two Tables :

TABLE VIII
Index Number of Agricultural Production in India and abroad
(Base 1952/53-1956/57=100)

<i>Countries</i>	<i>1956-57</i>	<i>1957-58</i>	<i>1958-59</i>	<i>1959-60</i>	<i>1960-61</i>	<i>1961-62</i>	<i>1962-63</i>	<i>1963-64*</i>
India	106	105	109	115	119	120	119	121
Pakistan	103	101	101	108	113	113	112	120
Malaya	115	113	110	127	143	152	156	167
Japan	110	113	118	118	120	121	132	125
U. A. R.	113	115	113	119	124	117	138	146
Israel	121	129	146	164	157	179	208	218
Turkey	107	109	126	126	131	123	129	142
Brazil	112	115	122	127	132	135	141	140
Australia	99	95	120	114	124	127	138	142
New Zealand	103	109	113	115	118	122	123	126

*Preliminary.

Note : These index numbers are calculated by FAO on a uniform basis employing regionally constant weights. They differ from national index numbers produced by the countries themselves because of differences in concepts of production, coverage, weights and methods of calculation. They are not substitutes for national index numbers.

Source : FAO Production Year Book 1964.

TABLE IX
International Comparison of Productivity of Selected Crops

<i>Countries</i>	(1963-64 : 100 Kg. per hectare)†						
	<i>Rice</i> (Paddy)	<i>Wheat</i>	<i>Barley</i>	<i>Maize</i>	<i>Cotton</i> (lint)	<i>Groundnut</i> (in shell)	<i>Tabacco</i>
India	15.4	7.9	8.0	10.0	1.2	7.8	8.8
Pakistan	17.2	8.3	6.4	10.3	2.8	—	11.5
Japan	52.4	12.3	13.4	26.7	—	23.6	21.6
U. A. R.	58.4*	25.9	26.3	23.5	6.5	20.2	—
U. S. A.	44.4	17.0	18.9	42.4	5.8	16.1	22.3
France	39.8	26.6	29.0	40.6	—	—	18.1
W. Germany	—	35.1	31.1	36.4	—	—	28.1
Italy	51.2	18.5	13.7	32.9	3.3	24.4	13.4
Belgium	—	37.7	35.8	43.3	—	—	28.8
Netherlands	—	42.0	38.4	42.6	—	—	—
Australia	59.1	13.4	12.1	19.7	4.0	12.2	13.9
New Zealand	—	33.0	30.3	43.9	—	—	17.9
WORLD	20.5	12.0	14.4	21.6	3.4	9.0	11.3

† One Hectare = 2.471 acres.

* For the year 1962-63.

Source : FAO Production Year Book — 1964.

Irrigation and Drainage

At the beginning of the third Plan, the net irrigated area was nearly 70 million acres. The proposed target for the end of the third Plan is 90 million acres or an increase of 29 per cent. In terms of investment the third Plan has a provision of Rs. 650 crores for major and medium irrigation projects as compared to Rs. 420 crores in the second Plan. The progress in this field has not been altogether unsatisfactory. Medium and minor irrigation projects have not been able to show the desired results due to the inadequacy of materials, such as steel and cement, and many of the tubewells all over the country are reported to be working below capacity or not working at all for want of electricity or fuel oil for working the pumps. The supply of electricity is not only erratic but fairly costly. In some areas the farmers are used only to rain-fed crops with the result that newly created irrigation

potential is not being fully utilised. It is estimated that the All-India average is only 71 per cent. It is not only necessary to make an optimum use of the available irrigation potential but also to study the economic possibilities of various crops so as to evolve the most suitable crop pattern. It is also a fact that water rates are not always economic from the point of view of the farmer. At least during the training period the rates have to be attractive even subsidised, if necessary, so that the farmer gets used to the benefits of irrigation. Also, the water charges should be fixed at a uniform rate for each crop irrespective of the fact whether water is supplied through major irrigation canals, tube wells or minor irrigation projects. Then there are irrigation schemes under implementation but where progress is not rapid enough because of differences between States for various reasons. It is perhaps best that the Central Government should take up such schemes for execution in the common interest of the country.

Irrigation is important but the experience in various parts of the country has brought to the fore the dangers of inadequate drainage facilities. Large tracts of fertile land are threatened by over-flooding and in the absence of proper drainage, are likely to go out of cultivation. Water logging and over-flooding of fields can be prevented through a proper provision of adequate water and field channels. The aspect of the problem has not received adequate attention and, therefore, needs to be properly taken care of.

There is some difference of opinion among experts as regards the type of irrigation most suitable for current expansion. In the present context it would seem that a much larger return can be achieved per unit of capital investment or water cost per acre in minor than major irrigation works. In these circumstances future irrigation works will need greater scrutiny both in respect of the priority to irrigation and factors like fertilisers. It has been estimated that even if our total water resources are harnessed, only 50 per cent of the total cultivable area can be brought under irrigation; the remaining 50 per cent will, therefore, have to depend on rainfall alone. It is, therefore, important that suitable technology is evolved in respect of application of improved seeds, fertilizers, pesticides, etc. to meet the needs of different types of soils.

Improved Seeds

If improved seeds of good quality could be made available to farmers at the right time and in required quantity it would be possible to increase the yields substantially. Governmental efforts in this direction so far have not been adequate primarily

because of the sheer size of the country. During 1963-64 an area of 83 million acres out of a total of nearly 290 million acres under foodgrains was covered under improved seeds of foodgrains and it was expected that by the end of 1964-65, 102 million acres under foodgrains would be covered. Late in 1965, Government imported an improved variety of wheat seeds, 'Mexican Sonara 64' capable of greatly increasing the yield. A new variety of paddy seed, namely, the 'Taichung Native I' has also been introduced. These are at present being multiplied. Seed multiplication farms should be enlarged to make them serve as demonstration and propaganda centres. As however, these farms alone will not be able to cope up with the future demand it is necessary to establish many more seed multiplication farms. These farms would have to be supervised by qualified agricultural technicians and should have the required equipment for testing the quality of seed produced. Some beginning has recently been made by joint-stock companies in this field. It is, however, unfortunate that this has aroused doctrinaire controversy. Indeed the need is to encourage many more joint stock companies to establish seed multiplication farms. Once seeds have been properly multiplied it would also be necessary to provide storage facilities both at the farms and at all distribution centres. At present considerable percentage of improved seeds deteriorates in storage.

One of the reasons for the relatively inefficient functioning of seed multiplication farms perhaps lies in the procedure adopted for the purpose of getting seed from farms and making it available to the agencies designed for distribution. There is no reason why these procedural arrangements should not be greatly simplified. Multiplication farms should be free to deliver seed produced by them to the distribution agencies or to the cultivators direct and receive payment on the basis of the quality and quantity of seed delivered.

Plant Protection through Insecticides and Pesticides

Various estimates of loss through insects, pests and rodents have been made and most of them agree that nearly 10 per cent of the production is lost through insufficient attention to protective measures. This is a problem which needs to be tackled both at the stage when the crops are growing and after they are harvested and stored. This would require large quantities of pesticides of all kinds and would in turn involve the availability of required foreign exchange. Block Development administration also needs to be made more vigorous towards rendering the necessary services to the farmers during the growth of crops. The Planning Commission has admitted that over the past decade, plant protection measures have lagged behind. In the second Plan the programme

covered about 16 million acres of land. In the third Plan the target is to cover 50 million acres.

As for storage of foodgrains and safety from pests and rodents, the primary need is to provide the right type of warehouses and godowns. In addition, the foodgrains stored will need to be treated in a suitable manner so as to protect them against fungi and other diseases.

The present procedure for obtaining pesticides through NES blocks, implements through departmental depots and fertilizers through cooperatives perhaps hinders rather than helps the farmer in adopting improved practices. It must be considered whether the supply of all these materials cannot be made in a way to help the already hesitant cultivator not to waste his time and energy by having to approach several authorities.

There is also need for intensifying the breeding or development of new varieties of crops which have the capacity to respond to higher doses of fertilizer application. Attempts should be made to demarcate areas on the basis of adequate rainfall and precarious rainfall so that the practice of fertilizing rainfed crops could be recommended with a greater degree of assurance of success in areas having adequate rainfall. In the case of marginal land, of which we have a very large percentage, bunding would be of help. The fertility of this land can be increased through the application of organic manure. Possibilities of growing green manure crops on such land should also be examined.

Fertilizers

Production and Consumption

In any scheme of improving agricultural yields, fertilizers must, of course, be given the highest priority. Studies conducted in India have revealed that one tonne of fertilizers properly applied would result in 10 additional tonnes of foodgrains. Fertilizer production has, therefore, assumed great importance. The installed capacity in the country on the eve of the third Plan was 2.48 lakh tonnes and production during 1960-61 was nearly 98,000 tonnes in terms of nitrogen. Although the installed capacity at the end of the third Plan was set for one million tonnes and the production at 8 lakh tonnes of nitrogen, actual production in 1964-65 has been only 2.40 lakh tonnes. To

some extent, these shortages are being met with imports. Consumption of fertilizers during the recent years has been as follows :

TABLE X

<i>Year</i>	<i>Quantity in thousand tonnes</i>
1950-51	70
1955-56	148
1960-61	306
1961-62	338
1962-63	452
1963-64	544
1964-65	760

The consumption is, however, so low as compared to world standards that it will take us many years and great efforts to reach the levels of agriculturally advanced countries. The following table gives the picture in brief :

TABLE XI

Production and Consumption of Commercial Fertilisers in selected Countries in 1963-64

<i>Country</i>	<i>(in '000 tonnes)</i>					
	<i>Nitrogen</i>		<i>Phosphate</i>		<i>Potash</i>	
	<i>Production</i>	<i>Consumption</i>	<i>Production</i>	<i>Consumption</i>	<i>Production</i>	<i>Consumption</i>
India	220.9	425.5	107.9	122.2	—	49.6
Pakistan	87.0	110.0	—	—	—	—
Japan	1279.3	724.8	530.6	494.7	—	584.5
U. S. A.	4004.0	4027.7	3480.0	2983.7	2508.0	2841.7
France	912.5	778.8	983.5	1225.5	1822.6	973.2
Italy	773.5	375.0	454.2	365.6	136.5	130.9
Australia	19.8	55.7	752.5	754.4	—	60.2
New Zealand	4.0	6.9	276.1	279.8	—	68.2

Source : FAO Production Year Book, 1964.

The Committee on Fertilisers have also made a study of fertilizer consumption per hectare of arable land in selected countries. Its findings are follows :

TABLE XII

Fertilizer Consumption per hectare of Arable Land in Selected Countries in 1962-63

<i>Country</i>	<i>Kilograms/Hectare*</i>			
	<i>N</i>	<i>P₂O₅</i>	<i>K₂O</i>	<i>Total</i>
Australia	36.77	55.04	110.88	202.69
Belgium	119.00	125.55	201.53	446.08
Denmark	51.71	40.96	63.03	155.70
France	31.82	48.19	42.40	122.41
East Germany	50.11	41.70	92.26	184.07
West Germany	90.77	83.55	130.00	304.32
Netherlands	293.41	101.30	123.75	518.46
Norway	64.98	52.12	63.68	180.78
U. K.	73.89	59.15	60.65	193.69
U. S. A.	18.55	14.67	11.78	45.00
Taiwan	127.85	34.75	27.39	189.99
Japan	110.23	76.55	83.28	270.06
Korea (Republic)	105.14	39.80	8.29	153.23
U. A. R.	74.73	18.85	1.25	94.83
New Zealand	9.64	372.78	79.63	462.05
India	2.56	0.58	0.23	3.37
World	9.11	8.21	6.79	24.11

* One Hectare = 2,471 acres.

Reasons for Slow Growth :

The third Plan had originally envisaged a target of one million tonnes of nitrogen, 4 lakh tonnes of P_2O_5 (phosphate) and 2 lakh tonnes of K_2O (potash.) These have, however, been scaled down to 8 lakh tonnes of nitrogen, 2.5 lakh tonnes of P_2O_5 and 1.5 lakh tonnes of K_2O . The present indications are that the actual consumption at the end of the Plan will be nearer 8 lakh tonnes for all types of fertilizers. The slow growth of consumption of fertilizers has been due to shortfall in the production on account of shortages of foreign exchange for the import of plant and machinery and for the purchase of critical raw-materials like sulphur and rock phosphate. Many schemes with regard to nitrogenous fertilizers have been delayed for several reasons including the difficulties in arriving at satisfactory and acceptable terms of collaboration with foreign entrepreneurs, negotiations regarding the prices at which and the agencies through which the end product would be sold and the provision of raw-materials. Imports have also been inadequate for want of foreign exchange. Delayed receipt of fertilizers, sometimes after the sowing season, defective distribution arrangements and lack of credit facilities have also been equally responsible for depressing the level of consumption. Another drawback has been the fast changing technology of fertilizer production. A few years ago it was thought that fertilizer plants could be based on coal. Now they are almost invariably based on naphtha.

Import Duty :

Fertilizer plants are highly capital intensive and about 40 per cent of the total investment has to be in terms of foreign exchange. It has been estimated that a 2 lakh tonne naphtha based fertilizer plant would cost Rs. 35 crores in India, of which Rs. 12 to 13 crores would be in foreign currency. The imposition of a regulatory duty at 10 per cent *ad valorem* from 17th February 1965 and the enhanced rate of 35 per cent *ad valorem* on industrial machinery and plant with effect from 19th August, 1965 has unfortunately increased the capital cost of each fertilizer project inasmuch as the incidence of import duty alone now comes to 45 per cent. Nitrogenous fertilizer plants cannot be made in India today. Therefore, the enhanced duty would not only raise steeply the overall investment costs and create problems of financing them, but would also reflect itself in the manufacturing costs and selling prices of fertilizers. The high rate of duty needs to be scaled down substantially and if this is not possible, Government should at least agree to collect the import duty in seven or eight equal instalments after a plant has gone into production.

The amount required for setting up of a 2 lakh tonne plant will be much less than that required for the import of fertilizers which at the current prices would cost nearly 45 crores annually in terms of foreign exchange. In other words, the foreign exchange that the country spends on the import of fertilizers in one year should be enough for putting up three fertilizer plants in the country, each with a capacity of 2 lakh tonnes. According to Government estimates an investment of Rs. 13 crores in a fertilizer plant can result in an annual saving of Rs. 26 crores in terms of foreign exchange required for the import of fertilizers or Rs. 78 crores in terms of imported foodgrains. In other words, every rupee of foreign exchange spent on building a new fertilizer plant means, eventually, a recurring saving of Rs. 2 every year spent on the import of fertilizers or Rs. 6 on the import of foodgrains. Besides, such plants would give additional employment and encouragement to ancillary industries.

Sivaraman Committee Estimates :

The Committee on Fertilizers (1965), more popularly known as Sivaraman Committee, examined in detail the whole question of fertilizer production and consumption and has fixed the following targets of consumption in the fourth Plan and for the end of the fifth Plan.

TABLE XIII

Fertilizer consumption targets in the Fourth Plan and end of Fifth Plan

Year	(Million Tonnes)		
	N	P ₂ O ₅	K ₂ O
1966-67	1.00	0.370	0.20
1967-68	1.35	0.500	0.30
1968-69	1.70	0.650	0.45
1969-70	2.00	0.800	0.55
1970-71	2.40	1.000	0.70
1975-76 (End of the Fifth Plan)	4.00	2.000	1.00

Source : Committee on Fertilizers (1965)

The targets formulated by the Sivaraman Committee have also been accepted by the USAID Fertilizer Team which has been studying the fertilizer requirements of India in cooperation with the Tennessee Valley Authority (TVA) and the International Rice Research Institute (IRRI). The working Group of the Petroleum and Chemicals Ministry has suggested that the capacity of the fertilizer factories should be raised to 2.2 million tonnes by the end of the fourth Plan. The Sivaraman Committee considers that with this capacity it would be possible to produce about 1.7 million tonnes of fertilizers.

New Policy of Fertilizers

Recent developments with regard to policy about fertilizer production and distribution are encouraging indeed. Government made an important policy announcement on 17th December 1965 under which fertilizer factories established in the private sector have been permitted a degree of freedom with respect to pricing, sale and distribution of fertilizers for a period of seven years from the start of commercial production. It is gratifying to note that this new policy would apply to units licensed upto March 1967. Certain other steps would, however, be needed to make this change in policy bear the desired fruits. These should include the release of adequate foreign exchange; judicious exercise of Governmental option to buy upto 30 per cent of the products at a negotiated price so as not to create disincentive; and an assured supply of naphtha by a proper coordination of the programme of petro-chemical production with that of fertilizers.

If a programme of fertilizer consumption on a sustained and large scale basis has to be popularised, the primary need is to overhaul the distribution machinery and make it more attractive to the farmer. This would require credit on a larger scale and also a machinery to check that the credit thus made available is put to proper use. Another hurdle which has to be removed is the traditional attitude of the farmer and his ignorance about fertilizers, which in any case is a new experiment in our country, specially for dry farming. A greater risk is involved in the case of dry farming if the monsoon fails because the farmer loses more. Some scheme of 'improvement risk-insurance' will therefore, have to be devised to safeguard the farmer and to interest him in the greater use of fertilizers.

Publicity and Education

Improved seeds and agricultural inputs will be of no avail unless an intensified programme of literacy among the farmers is simultaneously carried out. It is hardly

necessary to emphasise the obvious that an illiterate and tradition ridden farmer cannot make the best use of the inputs. Instances are not lacking where due to his inability to read the instructions properly, many a farmer has come to grief due to mis-application of chemical fertilizers and pesticides. Wiping out illiteracy is the first essential step which must be followed by programmes in farm training and management. In U.S.A. the Land Grant Colleges have done pioneering work in this field. Some of the agro-based industries in India have also been doing useful work in educating the cultivator. For example, the Indian Cotton Mills Federation has started some cotton development projects and the results obtained so far are reported to be very promising. There is, however, need for publicity and propaganda on a wider scale mainly through demonstration of improved methods so that the farmer in the remotest corner of the country is made aware of their potential. There is scope for more intensive and extensive publicity of agricultural knowledge, techniques and achievements for different crops in different regions. Attempts can also be made for closer contacts with the farmers by arranging group discussions, 'field-days', etc. Introduction of agriculture as one of the subjects in the secondary school curriculum can also be recommended so that the rural youth is equipped with the technical knowledge of crop production from the very beginning.

C-CREDIT AND MARKETING FACILITIES

Sources

Credit assistance to the farmer through the Reserve Bank of India and the branches of the State Bank has been growing steadily. There are also other agencies like the cooperatives, cooperative and land mortgage banks and private agencies which are even more important. The fact also remains that a farmer of small means continues to rely heavily on the traditional source of credit namely, the village money lender, and the terms and conditions of the credit so obtained through traditional sources are largely against the interests of the poor farmer. The burden of indebtedness on the farmer has grown in recent years.

Cooperatives

Cooperatives were designed not only to provide credit facilities to the farmers but also many other services such as supply of seeds, implements and fertilizers at reasonable

prices, marketing and processing of agriculture produce, etc. The success of the cooperative movement has not been uniform and it is well known that cooperatives have not come up to expectations in many States. The co-operative movement has been in existence in India for more than 50 years, but its performance must be judged by the results achieved in the various directions indicated above. While the cooperative movement organised on the right lines and working on sound cooperative principles deserves encouragement, it is unfortunately true that the movement seems to have lost some of the dynamism that it once possessed. The pursuit of targets resulted in the formation of many cooperatives which exist only on paper. If the cooperative movement is to grow and make the desired contribution, efforts should be made to make them functionally strong and financially sound. There should, however, be no attempt to restrict trading or certain activities to the cooperative sector alone.

Credit Utilization

An equally significant question is whether the credit which is made available to the agriculturists is utilised for the right purpose. There are reports that credit obtained through cooperative societies is, to some extent, being diverted by the farmer towards consumption expenditure.

Marketing

Proper marketing facilities are also important if the produce of the farm is to be expeditiously brought to the consumer's table at reasonable prices. According to the Planning Commission the total number of markets in the country is about 2,500. The number of regulated markets increased from about 470 at the end of the first Plan to 725 at the end of the second Plan. It is proposed to bring the remaining markets within the scheme of regulation during the third Plan. Marketing under the present conditions would not only mean properly safeguarding the interests of consumer alone; the interests of the producer and the trader are also important and, therefore, much will depend on the agricultural price policy of the Government. The Agricultural Prices Commission has been set up by the Government of India to examine and recommend producer's prices from season to season for different crops. It has already submitted two reports in respect of *rabi* and *kharif* cereals.

With the introduction of rationing on a large scale it is obvious that a programme of procurement will also have to be devised so as to ensure regularity of supplies. Both

procurement and subsequent distribution of the procured foodgrains can take various forms. The Federation feels that a graded levy on procurement would be better than monopoly procurement of the entire requirements. Under the scheme of graded levy a small-sized farm, upto a certain acreage, will have to be excluded. With respect to other farms the graded levy will be applicable only to a part of the marketable surplus, marketable surplus itself being calculated after allowing for the size of the family, total production, requirements for seed, etc. Even the general principles will have to be applied not in a mechanical way but taking into consideration the actual situation obtaining in different places and farms. In other words, the scheme of procurement should be based more on human considerations than on the strict letter of the law. The farmer should be free to sell the balance after he has delivered the required quantity under procurement. It is also desirable that no maximum prices are fixed for the non-procurement stock because these will have no economic sanction and will be extremely difficult to enforce over the whole country. In any scheme of procurement, care has to be taken that the prices given to the farmer are reasonable and remunerative so that he has the required incentive.

The Federation also feels that as far as possible the authorities should make use of the normal channels in regard to procurement, storage, financing, etc. of the produce. As for distribution in the urban areas, the authorities must make full use of the existing retail shops.

IV

RECOMMENDATIONS OF THE FICCI AGRICULTURE SUB-COMMITTEE

*Copy of letter dated 16th November, 1965 from Shri R. G. Saraiya,
Chairman, Agriculture Sub-Committee to Shri S. L. Kirloskar,
President of the Federation*

"I have pleasure in sending herewith the Statement of Conclusions of the Agriculture Sub-Committee of our Federation. This Statement brings out the major conclusions of the Sub-Committee on some important aspects of the problems of agricultural production, productivity and distribution. We met twice. At the first meeting consideration was confined only to the problems of agricultural production and productivity. I, however, felt that the immediate issue of rationing, as also procurement and prices of foodgrains, should be given urgent thought by us. So, I wrote to the Secretary of the Federation. I understood from him that the Committee of the Federation desired that the Agriculture Sub-Committee should apply themselves to this issue also. At the second meeting, therefore, we considered the matter.

I feel that the conclusions of our Sub-Committee on the entire subject are both objective and practical. You may kindly bring them to the notice of the Committee at their next meeting in Poona on the 1st December, at which I expect to be present."

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The Sub-Committee met twice in Bombay on 1st October and 10th November 1965 under the Chairmanship of Shri R. G. Saraiya.

2. At the first meeting, the Sub-Committee considered the problems of agricultural production and productivity. While considering the same at the Second Meeting, questions relating to the problems of food production, procurement, prices and distribution in particular were taken up.

3. By and large, the problems of agriculture and solutions were familiar enough. So also the importance of agriculture to the entire population and its crucial role in economic development. All these have become matters of vital urgency and importance now, when the country is passing through difficult times. It is not only in a general way that agriculture has gained a pre-eminent position, but also in specific terms against the background of shortages in food supplies and uncertainty in the flow of PL 480 wheat.

4. It is against this background that the Sub-Committee came to the following conclusions:

Production and Productivity

4.1. The supreme importance of increasing production of both food and commercial crops cannot be overemphasised. In this context, the impediments to greater production must be removed and more positively, promotional activities have to be undertaken. Ideological considerations must be relegated to the background if they come in the way of the supreme need of the hour, viz. increased production. Apart from those engaged in agriculture and the concerned authorities, industry and business also have a role to play in this common endeavour of augmenting production. The interest of industry and business in agriculture is apparent, for, not only does industry draw its raw materials from land, but its own well-being is closely dependent upon the prosperity of agriculture. In fact the export drive can be successful only if there is a strong agricultural production base. The levels of food production and marketable surplus too have a bearing on industry to the extent they influence the wage bill and industrial costs. An over-riding factor is social stability in urban and rural areas which is so much dependent upon food availability at reasonable prices.

4.2. The matter of increased supplies has to be tackled from the angle of production as well as that of productivity. This general proposition holds good both for commercial and food crops. If productivity is to be increased, the unit of farming or of plantation must be viable from the point of view of size. Equally important is the provision of inputs. It goes without saying that the plantation industry has to be on a large-scale basis although the same is not on all fours so far as food production is concerned. Although Land Ceiling Legislation is generally applicable to non-plantation crops only, it is unfortunate that in some States like Maharashtra even sugar plantation has come under the purview of this legislation. Large and well-managed farms producing cash crops and also slow maturing capital intensive schemes should

be exempted from the purview of the land ceilings legislation. The whole question, particularly in regard to the application of the land ceiling legislation to plantation crops should be reconsidered by the Government of India and the Planning Commission on a realistic basis. Even in regard to non-plantation land, it will be desirable to encourage joint-stock companies to undertake operational activities in cultivable wastelands as also in the areas newly brought under irrigation. And towards this end Government should give an assurance that once land is reclaimed and developed by joint-stock companies and became a paying proposition, Government would not take over the farms. In this connection, it must be noted that the recommendation about the entry of joint-stock companies is limited to cultivable waste-land and new areas brought under irrigation. This will not upset the present holdings.

4.3. It was not the view of the Sub-Committee that increase in productivity could only come with increased area. It has been proved that small farms were also capable of increasing productivity provided they are given the necessary inputs of labour, water, fertilisers, etc.

4.4. It is encouraging that the authorities have permitted seed farming activities on large farms. In the view of the Sub-Committee, industrialists and businessmen should interest themselves more in seed farming for that would be a direct contribution to improvement in agricultural production.

4.5 Similarly, organised industrial associations and individual companies should undertake promotional activities as is being done now by the Indian Cotton Mills Federation, etc. Further, steps in this direction should be towards studying the kind of implements best suited to different soils. Intensive study of the suitability of different types of implements for different soil conditions should be undertaken by the Agricultural Ministry of the Government of India. Industry should then undertake the manufacture of agricultural implements of approved and improved standards. If large-scale farming is to succeed, training in agricultural management should also be given. The various Management Institutes might be persuaded to impart this training.

4.6 Mixed farming has an important role to play in the development of food supplies of the country, and farmers must be encouraged to maintain milch cattle, poultry, etc. This should also be a part of the programme of the industrial concerns undertaking farming.

4.7 If productivity is to be increased, there must be greater input of fertilisers and necessary outlay on pesticides, insecticides, etc. Fertiliser Industry in the country is itself facing the problem of non-availability of critical raw-materials like sulphur and rock phosphate. Government should give the highest priority for the importation of these raw materials. Since domestic fertiliser production will not be sufficient, fertiliser imports should also receive high priority.

4.8 In regard to utilisation of water made available by new irrigation projects, it would seem that there are some impediments. In some areas the farmers are used only to rain-fed crops. The new water that is available is not being fully utilised by them. Not only should the farmers be educated by demonstrations, visual aids, etc. as to how to make the best use of the irrigation facilities available, but in every new irrigation project the economic possibility of various crops should be studied and the best crop pattern should be evolved with the necessary provision of seed and other inputs. In some other areas, water is not available to farmers in the interior. Some effective arrangement should be made to ensure that water flows freely from farm to farm and is not held up by the farmers nearer to the source of supply.

4.9 While self-reliance in food production is both necessary and desirable, in the present circumstances it would be dangerous to wish away the problem of insufficiency. Therefore, P.L. 480 assistance should be sought and gratefully accepted from the U.S.A. and the U.S. authorities assured that indigenous effort would not be slackened.

4.10 Industry might also undertake the operation of demonstration farms which could also serve as service and supply centres for the peasants in the surrounding areas. These farms should also include a programme of mixed farming.

4.11 Some scheme of Risk Insurance must be devised so as to induce the farmer to go in for improved methods of farming and employment of better inputs. The farmer who undertakes to try new method of cultivation or risks more capital by way of inputs should, if possible, be indemnified if such experiment results in a loss to him for no fault of his own.

4.12 Government should take long-term decisions about production and price policies and the farmers should be assured of an outlet for their produce at reasonable and guaranteed prices.

Procurement, Prices and Distribution of Foodgrains

5. In recent weeks the authorities have expressed themselves in favour of rationing with compulsory procurement as an integral part. In the opinion of the Sub-Committee, the resort to rationing should be undertaken only after very careful consideration of the pros and cons. The position is still unclear as regards Government's policy in this field. While on the one hand the adverse consequences of rationing and procurement programme are available as historical evidence in our country and abroad, the problem of rationing has to be viewed in the context of the present emergency. At the same time, in the evolution of any scheme of rationing every endeavour must be made to eschew the undesirable features. It is obvious that if rationing becomes a 'must', so also will be a programme of a compulsory levy from the producers to ensure the availability of foodgrains for rationing. Both procurement and subsequently distribution can take various forms. In the opinion of the Sub-Committee a graded levy in the area of procurement is better than monopoly procurement of the entire requirements. In the scheme of graded levy, farms of certain small sizes should be excluded. In respect of others, the graded levy will be applicable only to a part of the production in each farm. In other words, the graded levy will be applicable to only a part of the marketable surplus, marketable surplus itself being calculated after allowing for the size of the family, total production, requirements for seed, etc. Even the general principles have to be applied not in a mechanical way, but taking into consideration the actual situation obtaining in different places and farms.

5.1 As stated earlier, procurement will be confined only to a part of the marketable surplus. So far as the balance is concerned, the farmer will be free to sell the same in the open market. It is pointless to fix statutory maximum prices for non-procurement stock as these prices will have no economic sanction, nor is the enforcement over the whole country feasible.

5.2 The procurement prices, needless to say, must be reasonable.

5.3 As far as possible, the authorities should make use of the normal trade channels in regard to procurement also. In the field of storage, financing etc., the normal trade channels can play a useful role. As for distribution in urban areas, even after the introduction of rationing, the authorities must make full use of the existing retail shops. The retail shops will no doubt have to be licensed, and they will also have

abide by certain Code of Conduct to ensure that they do not withhold goods, that they charge the consumers only the controlled prices and maintain accuracy in weights and measures so that the customer gets the quantity he is entitled to for the prices paid by him. Any departure from such established Code of Conduct would mean that the shops would cease to be licensed. The Federation should appeal to the various Trade Associations to bring all these retail shops into their membership and become liable to their discipline. The utilisation of these shops would be far better and more economical than setting up ration shops to be run by the administrative machinery.

6. The Sub-Committee are aware that the vital questions considered by them have many facets and require concentrated effort on a wide front. The problems and solutions are many. However, the Sub-Committee have endeavoured at the present stage to confine their attention to some specific vital aspect of each issue.

MEMBERS OF THE AGRICULTURE SUB-COMMITTEE

1. SHRI R. G. SARAIYA *—Chairman*
2. SHRI R. N. BANGUR
3. SHRI CHARAT RAM
4. SHRI CHINUBHAI CHIMANBHAI
5. SARDAR DATAR SINGH
6. SHRI H. C. KOTHARI
7. RAI BAHADUR G. M. MODI
8. SHRI H. P. NANDA
9. SHRI MOHANLAL NOPANY
10. DR. J. S. PATEL
11. SHRI RADHAKRISHNA RUIA
12. SHRI S. K. SOMAIYA

SHRI G. B. SUNDRIYAL

—Senior Assistant Secretary

STATISTICAL APPENDIX

- Appendix I — Production of Foodgrains in India
- Appendix II — Production of Commercial Crops in India
- Appendix III — Index Numbers of Area, Production and Productivity of Foodgrains in India
- Appendix IV — Index Numbers of Area, Production and Productivity of Commercial Crops in India
- Appendix V — Index Numbers of Agricultural Production in India
- Appendix VI — Agreements under PL-480
- Appendix VII — Breakdown of PL-480 Commodities Pledged to and Received by India

PRODUCTION OF FOODGRAINS IN INDIA

Commodity	('000 tonnes)							
	1950-51	1956-57	1960-61	1961-62	1962-63	1963-64	1964-65*	1965-66*
Rice	21198	29037	34198	34807	32018	36900	38700	32300
Jowar	6248	7327	9363	7741	9339	9227*	} 23200**	} 22000**
Bajra	2672	2873	3228	3554	3862	3736*		
Maize	1955	3078	4015	4269	4520	4527*		
Ragi	1352	1793	1681	1874	1914	1852*		
Small Millets	1750	1930	1975	1970	1841	2031*		
Barley	2510	2863	2866	3152	2474	1985*		
Wheat	6751	9403	10992	12039	11132	9900	12100	11100
Total Cereals	44436	58304	68318	69406	67100	70200	76000	65400
Gram	3824	6231	6324	5827	5727	4478*	} 14400	} 10700
Tur or Arhar	1718	1989	2081	1339	1539	1292*		
Other pulses	3106	3331	4247	4465	4384	4105*		
TOTAL FOODGRAINS	53084	69855	80970	81037	78750	80200*	88400*	76100*

* Provisional.

** Total Coarse Grains including Barley.

PRODUCTION OF COMMERCIAL CROPS IN INDIA

<i>Crops</i>	<i>Unit</i>	<i>1950-51</i>	<i>1955-56</i>	<i>1960-61</i>	<i>1961-62</i>	<i>1962-63†</i>	<i>1963-64‡</i>
Groundnut (in shell)	('000 tonnes)	3481	3862	4812	4994	4821	5290
Sesamum	„	445	467	318	372	464	410
Rapeseed & Mustard	„	762	860	1347	1346	1294	909
Linseed	„	367	420	398	463	433	385
Castor seed	„	103	125	107	109	100	100
Cotton (lint)	('000 bales of 392 lbs. each)	2910	3998	5293	4581	5309	5426
Jute (dry fibre)	('000 bales of 440 lbs. each)	3283	4198	4134	6358	5449	5957
Mesta (dry fibre)	„	—	1153	1129	1878	1697	1819
Sugarcane (in terms of Gur)	('000 tonnes)	5701	5953	8592	9984	9544	10258
Tobacco	„	261	303	307	339	366	336

† Partially revised estimates

‡ Final estimates.

SOURCE: Directorate of Economics & Statistics, Ministry of Food & Agriculture.

INDEX NUMBERS OF AREA, PRODUCTION AND PRODUCTIVITY OF FOODGRAINS
IN INDIA
(Agricultural Year 1949-50=100)

Commodity		1950-51	1955-56	1960-61	1961-62	1962-63	Increase (+) or Decrease (-) from 1950-51 to 1963-64	
							1963-64	1963-64
Kharif cereals	Area	99.4	108.5	111.9	113.4	114.4	115.3	+15.9
	Production	87.7	111.8	132.7	133.5	128.7	141.5	+53.8
	Productivity	88.2	103.0	118.6	117.7	112.5	122.7	+34.5
Rice	Area	100.9	103.1	109.6	112.1	114.3	116.1	+15.2
	Production	87.9	114.2	136.2	139.0	127.4	145.7	+57.8
	Productivity	87.1	110.8	124.3	124.0	115.5	125.5	+38.4
Jowar	Area	100.2	111.6	111.0	114.4	115.8	116.8	+16.6
	Production	89.8	96.7	134.6	112.2	138.2	132.5	+42.7
	Productivity	89.6	86.6	121.3	97.2	119.3	113.4	+23.8
Rabi cereals	Area	99.4	122.0	125.2	130.7	129.5	125.0	+25.6
	Production	102.0	128.9	154.6	169.8	149.4	132.4	+30.4
	Productivity	102.6	105.7	123.5	129.9	115.4	105.9	+ 3.3
Wheat	Area	99.9	126.7	132.9	138.6	140.0	136.4	+36.5
	Production	101.1	131.3	162.7	178.3	160.4	143.8	+42.7
	Productivity	101.2	103.6	122.4	128.6	114.6	105.4	+ 4.2
Pulses	Area	91.9	116.8	116.7	118.9	120.3	119.3	+27.4
	Production	91.7	118.4	128.6	120.3	116.8	101.2	+ 9.2
	Productivity	99.8	101.4	110.2	101.2	97.2	84.8	-15.0
Gram	Area	91.2	118.0	113.5	115.2	110.8	111.6	+20.4
	Production	98.0	138.9	162.3	149.5	137.1	114.9	+16.9
	Productivity	107.5	117.7	143.0	129.8	123.7	103.0	- 4.5
FOODGRAINS	Area	97.9	111.9	114.6	116.7	117.5	117.3	+19.4
	Production	90.5	115.3	135.6	137.5	130.4	134.9	+44.4
	Productivity	92.4	103.0	118.3	117.8	111.0	105.0	+22.6

SOURCE: Directorate of Economics and Statistics, Ministry of Food & Agriculture.

INDEX NUMBERS OF AREA, PRODUCTION AND PRODUCTIVITY OF
COMMERCIAL CROPS IN INDIA

(Agricultural Year 1949-50=100)

Commodity		1950-51	1955-56	1960-61	1961-62	1962-63	Increase (+, or Decrease (-) from 1950-51 to	
							1963-64	1963-64
Oilseeds	Area	106.5	119.3	133.4	140.3	145.9	143.5	+37.0
	Production	98.5	108.6	128.0	134.4	137.7	133.6	+38.1
	Productivity	92.5	91.0	96.0	95.8	94.4	93.1	+ 0.6
Groundnut	Area	113.0	129.1	157.4	161.6	172.7	171.2	+58.2
	Production	101.4	112.4	131.7	138.3	142.3	156.2	+54.8
	Productivity	89.7	87.1	83.7	85.6	82.4	91.2	+ 1.5
Sesamum	Area	107.7	111.3	105.3	109.0	120.3	113.3	+ 5.6
	Production	101.6	104.8	78.0	92.1	112.1	99.1	- 2.5
	Productivity	94.3	94.2	74.1	84.5	93.2	87.5	- 6.8
Fibres	Area	118.8	160.7	151.8	160.7	161.5	163.1	+44.3
	Production	108.6	149.7	175.7	183.2	193.6	202.4	+93.8
	Productivity	91.4	93.2	115.7	114.0	119.9	121.1	+39.7
Cotton	Area	119.2	164.0	154.9	156.6	159.2	160.7	+41.5
	Production	110.7	153.9	203.3	170.2	201.8	206.3	+95.6
	Productivity	92.9	93.8	131.2	108.7	126.8	128.4	+35.5
Jute	Area	121.3	149.4	129.9	195.9	180.7	183.0	+61.7
	Production	106.3	135.8	121.6	193.8	165.1	180.5	+74.2
	Productivity	87.6	90.9	93.6	98.9	91.4	98.6	+11.0
Sugarcane (Gur)	Area	116.4	125.1	158.7	164.2	154.5	150.0	+33.6
	Production	113.7	119.8	173.9	163.7	154.0	165.5	+51.8
	Productivity	97.7	95.7	109.6	99.7	99.7	110.3	+12.6
Miscellaneous Group	Area	112.3	113.5	134.3	137.3	134.2	131.2	+18.9
	Production	110.3	120.1	155.8	150.8	149.7	151.4	+41.1
	Productivity	98.2	105.8	116.0	109.8	111.5	115.4	+17.2
NON-FOODGRAINS	Area	110.8	130.7	139.2	146.0	148.8	147.6	+36.8
	Production	105.9	119.9	147.9	149.2	151.0	151.8	+45.9
	Productivity	95.6	91.7	106.3	102.2	101.5	102.8	+ 7.2

SOURCE: Directorate of Economics and Statistics, Ministry of Food & Agricultur.

INDEX NUMBERS OF AGRICULTURAL PRODUCTION IN INDIA

Commodity Group	Weight	1950-51	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65
FOODGRAINS	66.9	90.5	115.3	137.1	140.3	130.4	135.9	149.1
Rice	35.3	87.9	114.2	137.7	142.4	127.4	146.6	153.9
Jowar	5.0	89.8	96.7	141.1	115.4	138.3	131.3	141.0
Bajra	2.7	83.8	108.3	102.9	114.1	121.8	116.9	139.8
Maize	2.1	84.4	112.3	146.7	154.3	163.8	162.9	163.1
Ragi	1.2	87.6	118.7	121.7	132.0	123.2	127.6	124.9
Small Millets	1.5	88.9	105.1	98.2	105.2	95.4	103.5	101.5
<i>Kharif Cereals</i>	47.8	87.7	111.8	134.8	137.1	128.7	142.2	149.8
Wheat	8.5	101.1	131.1	162.8	178.8	160.4	146.1	178.9
Barley	2.0	105.6	118.5	118.0	133.5	102.7	86.3	105.0
<i>Rabi Cereals</i>	10.5	102.0	128.9	154.3	170.2	149.4	134.7	164.8
Cereals	58.3	90.3	114.9	138.3	143.1	132.4	140.8	152.5
Gram	3.7	98.0	138.9	160.4	148.5	137.2	115.5	148.0
Tur	1.1	91.8	99.4	106.0	70.0	80.4	69.2	95.6
Other Pulses	3.8	85.6	103.9	105.1	110.2	107.8	100.2	113.0
<i>Pulses</i>	8.6	91.7	118.4	129.0	121.5	116.9	102.8	125.8
NON-FOODGRAINS	33.1	105.9	119.9	152.6	153.9	151.8	156.2	174.9
Groundnut	5.7	101.4	112.4	142.1	147.5	142.4	153.9	182.3
Sesamum	1.2	101.6	104.8	77.2	90.3	111.9	105.9	112.4
Rapeseed & Mustard	2.0	94.6	105.8	165.7	165.6	159.2	111.1	169.2
Linseed	0.8	87.8	97.1	95.3	111.1	103.9	90.9	111.8
Castorseed	0.2	80.5	96.1	82.1	83.6	77.5	78.3	77.5
<i>Oilseeds</i>	9.9	98.5	108.6	134.0	140.0	137.7	132.8	163.4
Cottor	2.8	110.7	163.9	202.1	174.9	201.7	209.3	206.0
Jute	1.4	106.3	135.8	125.3	192.7	165.1	187.4	184.2
Mesta	0.3	100.0	174.7	168.8	280.8	250.4	276.5	234.4
<i>Fibres</i>	4.5	108.6	149.7	176.0	187.5	193.7	207.0	201.1
Tea	3.3	103.8	107.2	120.9	133.4	130.5	130.2*	141.6*
Coffee	0.2	112.3	196.1	246.4	229.6	280.2	341.5*	341.5*
Rubber	0.1	93.8	146.1	167.0	178.9	207.8	246.5	293.2
<i>Plantation Crops</i>	3.6	104.0	113.2	129.2	140.0	141.0	145.2	156.9
Sugarcane (Gur)	8.7	113.7	119.8	183.9	173.5	156.8	173.9	202.1
Tobacco	1.9	97.3	112.9	114.3	126.2	132.2	129.7	132.2
Potato	1.0	107.4	120.3	168.6	161.7	192.6	149.4	201.2
Pepper (Black)	1.2	97.2	132.6	134.8	134.8	123.9	116.3	115.3
Chillies (Dry)	2.0	119.4	122.9	142.5	130.3	143.0	155.3	155.0
Ginger (Dry)	0.3	94.4	105.7	116.3	124.2	128.8	140.7	140.0
<i>Miscellaneous Crops</i>	15.1	110.3	120.1	163.4	156.3	151.1	159.0	178.9
ALL COMMODITIES	100.0	96.6	116.8	142.2	144.8	137.5	142.6	157.6

*Based on provisional Estimates

Note : The indices for 1962-63 to 1963-64 are generally based on partially revised estimates while those for 1964-65 are generally based on Final estimates. The indices for these years are, therefore, subject to revision.

SOURCE : Directorate of Economics & Statistics, Ministry of Food & Agriculture.

AGREEMENTS UNDER PL-480

(Value in '000 dollars)				
<i>Date of Agreement</i>	<i>Value of the Agreement</i>	<i>Date of Amendment</i>	<i>Value of Amendment</i>	<i>Total value of the agreement as amended</i>
August 29, 1956	360,100	(i) Feb. 13, 1958	2,300	362,400
		(ii) Oct. 28, 1959	(-) 7,844	354,556
June 23, 1958	57,000	Oct. 28, 1959	(-) 1,723	55,277
Sept. 26, 1958	238,800	(i) May 21, 1959	No change in amount	238,800
		(ii) Oct. 28, 1959	21,000	259,800
		(iii) Nov. 13, 1959	Change in Language	
Nov. 13, 1959	238,800	(i) Nov. 20, 1959	Correction made	238,800
		(ii) Nov. 23, 1959	18,500	257,300
		(iii) Jan. 8, 1960	32,800	290,100
		(iv) March 21, 1960	7,770	297,870
May 4, 1960	1,276,000	(i) July 29, 1960	41,600	1,317,000
		(ii) Sept. 23, 1960	17,100	1,334,000
		(iii) March 9, 1961	35,100	1,369,800
May 1, 1962	11,100	May 17, 1962	28,200	39,300
Nov. 26, 1962	46,600	(i) April 1, 1963	2,600	49,200
		(ii) Sept. 4, 1963	7,700	56,900
		(iii) April 17, 1964	46,200	1,03,100
Nov. 30, 1962	5,103	—	—	5,103
Sept. 30, 1964	398,300	(i) Dec. 31, 1964	28,400	426,700
		(ii) April 21, 1965	No change in amount	426,700
		(iii) July 26, 1965	58,800	485,500
		(iv) Sept. 29, 1965	29,650	515,150
		(v) Nov. 4, 1965	29,210	544,360
TOTAL				3,029,166
				(Rs. 1442.5 crores)

SOURCE: United States Information Service.

BREAKDOWN OF PL-480 COMMODITIES PLEDGED TO AND RECEIVED BY INDIA

Commodity	Agreement Signed upto November 4, 1965		Arrivals upto August 31, 1965
	Programmed Quantity* in Thousand Tonnes	Value in Million Dollars	Approximate Quantity* in thousand Tonnes
Wheat	32,987.20	2,017.86	29,367.60
Feed Grains	1,067.30	54.00	979.40
Rice	1,748.10	207.50	1,760.60
Cotton	2363.00 (a)	272.70	2,009.10 (a) (b)
Tallow	50.00	9.90	7.20 (c)
Tobacco	6.30	13.80	5.88
Nonfat Dry Milk	20.90	3.57	21.00
Soybean oil	78.70	19.9	70.00 (c)
Evaporated Milk	13.00	4.12	14.99
Whole Milk Powder	0.23	0.27	0.23
Cheese (Processed)	0.08	0.08	0.10
Canned Fruit	0.40	0.10	0.42
TOTAL MARKET VALUE	—	2,603.80	
Ocean Transportation	—	431.90	
TOTAL INCLUDING OCEAN TRANSPORTATION	—	3,035.70 (d)	

* — Programmed quantities are based on prices at the time of agreement. Arrivals are based on actual quantities purchased with funds at the time of transactions.

(a) — Cotton is reported in Thousand Indian Bales (392 lbs. each)

(b) — Arrivals upto January 31, 1965.

(c) — Includes approximately \$ 6.4 million ocean transportation differential costs for which the Commodity Credit Corporation is not reimbursed by the recipient country.

(d) — Arrivals upto July 31, 1965.

SOURCE : United States Information Service.

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