

Notes on program

Education development

for Madras province

1948



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DIGITIZED

NOTE ON PROGRAMME OF IRRIGATION DEVELOPMENT IN MADRAS PROVINCE.

The area growing rice in Madras Province was about 10,700,000 acres in 1944-45 and the yield of rice in that year has been estimated at about 4,900,000 tons—vide Statements XV and XVI in the Government of India Publication "The Food Statistics of India, 1946." The figure for rice production estimated by Mr. S. Y. Krishnaswami in his note on "Agricultural Deficiencies in Madras Province" is about five million tons which nearly agrees with the above figure.

2. The population of Madras Province was about 44 millions in 1931, and 49 millions in 1941. It has been estimated at about 51 millions in 1946 and about 54 millions in 1951. Mr. S. Y. Krishnaswami worked out that the production of rice, on the 1941 figures, gave a ration per adult much below a normal ration of $1\frac{1}{2}$ lbs required to maintain nutrition at the proper level. Statement LXLIII in the Food Statistics of India gives 0.92 lb per capita in the 84 rationed towns in the Province. The quantity required to feed the population subsisting on rice in Madras Province is of the order of 7 million tons for the 1946 population and 7.4 million tons for the 1951 population. The average imports of rice during the years prior to 1940-41 to meet the requirements of the rice-eating population in Madras is of the order of about 500,000 tons (vide bottom of page 5 of Mr. S. Y. Krishnaswami's note). The above figures show that we have to make up the deficit of about 2 million tons of rice to provide the present population subsisting on rice with a normal ration and about $2\frac{1}{2}$ million tons for the anticipated increase in population by 1951. The level of production of rice has been more or less constant for the last fifteen years. The Province was probably self-sufficient about 25 years ago but since then the gap between production and consumption requirements of rice has been widening. The present gap is very great and can only be made up by imports or by cutting down the ration to a subnormal figure. The state of affairs cannot be looked upon with complacency and requires active steps to be taken to increase production. The improvement in yields by improved methods of cultivation and manuring are possible but should in my opinion be regarded as a supplemental and reserve phase of development and not the main phase. The programme of irrigation development must therefore aim at bringing under cultivation an additional area of 5 to 6 million acres under rice crop so that production may be on a level with the demand and to provide a small margin over it. The position is illustrated by the diagram attached to this note.

3. The districtwise distribution of population, the rice requirements of the population of rice, the actual quantity available and the surplus or deficit in each of the districts in Madras for 1946 and 1951 populations are shown in the annexed Statements I and II. Due allowance has been made for the percentage of the population subsisting on millets and foodstuffs other than rice in the ten districts of the Province listed out by Mr. S. Y. Krishnaswami. These statements show the surplus areas and the deficit areas in the Province and what additional area is required to be brought under rice in each district where production is in deficit to make up the deficit.

4. It is not possible to make each district self-sufficient and to have schemes designed to supplement food production confined entirely to deficit districts and omit schemes in the surplus districts. The availability of supply and land, nature of soil, geographical and meteorological features of the tracts have considerable bearing on the development of irrigation schemes. Taking the future of the Province as a whole, except the rivers Kistna and Godavari where about 90 per cent of the waters are unutilized and get wasted into the sea, the other rivers are either fitful and bring in small volumes of flow or have been exploited already very fully. For instance, the Cauvery has been comparatively more fully developed than the Kistna and the Godavari and the surplus available for future development is comparatively small. These factors have to be borne in mind in assessing the possibilities of development on a districtwise basis.

5. Statement III in three parts shows possibilities of development. Part I shows major irrigation schemes for areas over a lakh of acres, Part II middle-sized schemes showing areas between 10,000 and 100,000 acres. There are a large number of other small schemes and their total area will be about 3.7 lakhs of acres. The middle-sized ones make up about 4.9 lakhs of acres giving a total of about 9 lakhs of acres on middle-sized, small and minor schemes but it is not known how many of these will be found feasible on detailed investigation. Under the major schemes we have the Kistna-Pennar Project for irrigating an extent of about 2.5 to 3 million acres lying in the Kurnool, Cuddapah, Nellore, Chittoor, Chingleput and South Arcot districts. Whether all this

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area can be brought under irrigation is a matter for investigation. The lower Bhavani and the Gandikota Projects are schemes for irrigating mainly dry crops such as millets and cotton, on about 300,000 acres. It is a moot point whether the millet-eating population will increase in proportion to the increase in millet production, in view of the general trend to change over to rice (vide paragraph 3 of Mr. S. Y. Krishnaswami's note). Assuming for the present purpose that this area is equivalent to about half the total area, we may take credit for about 150,000 acres, so far as rice production is concerned. The total area of the several schemes put together excluding Ramapadasagar and Tungabhadra is about 3.6 million acres (still tentative figures) over the whole Province. Even taking into account the area under Tungabhadra and Ramapadasagar Projects, there is still a deficit of over 1 million acres for 1951 requirements to be filled up. Even this calculation is not strictly correct as many of the large projects including Ramapadasagar will not be completed before 1951. A scheme for utilizing the waters of the Kistna included in the present programme therefore seems necessary particularly as by the time the Ramapadasagar is executed and the anticipated results achieved—probably 1961—there would be a further increase of population in need of more rice. To the wisdom of the Governments of Punjab and Sind which carried out large projects long in advance of the actual need, we owe the prosperous position of those provinces. In our own Province, the Kistna and Godavari anicut schemes planned and executed by Sir Arthur Cotton at a time when population of the Province had still not outgrown the production of rice, we owe the large surplus production in these districts. Unless therefore the plans are now laid out and pursued with vigour in the case of the Kistna-Pennar Project for 2.5 to 3.0 million acres as in the case of Ramapadasagar we may always find Madras to be a deficit Province depending on external help for food. The failure of the 1947 North-East Monsoon has brought prominently to notice the great benefits conferred by the Mettur Reservoir on the Cauvery. But for this reservoir executed at a cost of about Rs. 6.5 crores, Tanjore delta would have lost nearly 6 crores worth of rice this year and Government 3 lakhs of tons of rice (nearly 40 per cent of the normal value of rice produced in the district). The value of the Kistna-Pennar Project to the districts affected in a year like 1947, is incalculable, possibly of the order of 30 crores. Again our experience in the matter of importation of foodstuffs from sources outside the Presidency, India and abroad, has not been altogether happy. The allotments have been poor and the receipts have been poorer still. Apart from these, Government have had to pay sums amounting to crores for all grain purchased and bear the loss involved in re-sale and distribution, though Government of India probably bear a share of this loss. These difficulties and losses are bound to persist until our Province is made self-sufficient in the matter of its main staple food, rice.

6. Irrigation projects take long to investigate and to execute. Measurements of river flow have to be taken for some years where these are not already available or reliable. Due to the policy of looking for a financial return on most irrigation projects, development of irrigation could not be undertaken in the past and if any scheme showed on superficial examination that it was not likely to produce the required return, no further action was taken on it. Since the advent of the new Government, attempts have been made to start investigation on schemes listed in Statement IV to verify and determine the possibilities of development. The list is only illustrative and must be merely taken to indicate the limit of possible developments while their feasibility has still to be investigated and determined. They do not also exhaust all possibilities. While engineering difficulties of a purely constructional character can be largely solved with modern engineering methods and research, the lack of adequate water-supplies and the political difficulties involved in negotiating with Sovereign States like Hyderabad, Mysore and Travancore will still remain. The political difficulties have to be tackled earnestly and quickly to ensure rapid progress. On the side of engineering, if quick results are to be achieved, mechanisation on much larger scale than hitherto envisaged will be necessary to put through the programme in the shortest possible time. Whatever labour can usefully assist in the execution of the projects without delaying progress can be employed but the bulk of manual labour can probably be diverted usefully on reclamation of land to be made ready for cultivation. A large number of engineering personnel would also be required to implement the programmes. These are merely mentioned to show the magnitude of the programme and the limitation under which it will have to be worked.

7. It is difficult to lay out a complete programme of investigation and execution of works mentioned in Statement III due to lack of adequate data. An attempt is however made to set out a tentative programme in the statements attached. The statement is in three parts covering major, minor and small Grow More Food Schemes. They include large multi-purpose projects like the Kistna-Pennar Project with possibility of development of a large amount of power. Statement IV shows the probable programme of execution and development. The programme depends on the availability of technical personnel and materials, and on the policy of the Government of Madras, and of the Government of

India in financing these projects and in the assistance asked for and given in various directions necessary to achieve the fruition of the several projects. The freedom given to Chief Engineers in matters affecting technical personnel, recruitment and assistance given to procure machinery of the right and useful kind at an economic cost will be factors which would also set the pace of expenditure and progress. The greater the form of this assistance, the shorter will be the period of completion of the programme and the realization of results which are expected to flow from it. The programme includes large and small works and both have to go on concurrently. The demands on personnel and the resources of Government, both Provincial and Central, will be indeed very great, but are not beyond the bounds of a planned economy taking into account all factors and the magnitude of the problem to be solved. If Government are to save large sums of money spent on foreign imports on the purchase of food grains and also avoid all expenditure in running various forms of food control and subsidy which they have to pay to maintain the prices at reasonable levels due to shortage of commodities, these projects are indispensable and the earlier steps are taken to execute them, the shorter will be the period within which normal conditions of life and a better condition of economy can be achieved.

8. The directions in which the Government of India can help in the above matters are the following:—

(a) To provide necessary funds by way of free grants and by loans to the Provincial Governments to enable the execution of irrigation projects. So far as irrigation in my charge is concerned, the total anticipated expenditure on irrigation schemes both large and small is of the order of about 130 crores. All this amount will be required within the next ten years. For this expenditure an area of about 4.0 million acres of new land would have been brought under cultivation, and an addition to food resources by way of rice of nearly 2.0 million tons. The value of this produce will be 45 crores and the annual income-tax on the turnover and the increased prosperity as a result of this alone is estimated to be 70 lakhs of rupees. There are other sources of revenue to Central Government such as Customs, Excise, Stamps, Posts and Telegraphs, and Railways the receipts from which will certainly go up as a result of greater prosperity in the irrigated tracts. So there is a strong case for a cash contribution from the Centre at least in proportion to the estimated indirect revenues which may possibly be as much as 50 per cent but certainly not less than third of the cost of the projects.

(b) In the execution of some of the projects, particularly Kistna-Pennar Project, at least, an interim settlement with the Indian States will be necessary for useful distribution of available flood supplies in the river like Kistna. A full and complete division of waters is not desirable now. There is neither adequate data nor is it likely that a complete agreement can be reached at this stage. While the Madras Government will take necessary steps in the matter to get the consent of the Indian States particularly Hyderabad in the matter of Kistna-Pennar Project, about (i) submersion of the Hyderabad territory, (ii) the construction of dam and various other connected things, and (iii) utilization of a percentage of the waters of the river, a situation may arise in which the intervention of the Government of India may be necessary in virtue of their position as the authority having final control over the affairs in Indian States; more particularly the good offices of the Ministry of States may be required to facilitate this settlement. In this respect Madras Government will certainly need all the assistance that they ask of the Government of India, and which the Government of India are in a position to give.

(c) The rising cost of manual labour and the lack of adequate volume of such labour to handle large projects against a fixed target date for execution of the projects make it necessary for a large scale mechanization of these projects. The experience of Madras has been rather disappointing in the matter of obtaining suitable machinery from practically the only suppliers in the world in the present conditions, namely, United States of America. The various limitations such as the inadequate provisions for dollar and sterling resources and the restrictions on export of machinery have made it very difficult to obtain machinery of the proper type and the assistance of the Government of India to expedite the supply of machinery and to provide the necessary facilities should be available in ample measure to get over these bottlenecks.

(d) Coming to the materials produced within the country, such as steel, cement, coal and petroleum products and possibly other materials, the control and procedure exercised by the Government of India in obtaining the above materials must be greatly simplified and full facilities provided where materials are required for the execution of the projects. The services of officers of the Government of India like the officers of the Geological Survey Department, Survey of India, the Meteorological Department, and the Government in the Agricultural Department and other organizations should be fully available for providing both personnel, machinery and other plant for solution of any local problems connected with the execution of the above projects.

(e) Where technical personnel of the foreign countries are required or technical literature and advice of Consulting Engineers are required and where the Madras Government require the assistance of the Government of India, such assistance should be given. Ordinarily the Madras Government may be able to obtain these facilities provided the necessary dollar facilities alone are made available.

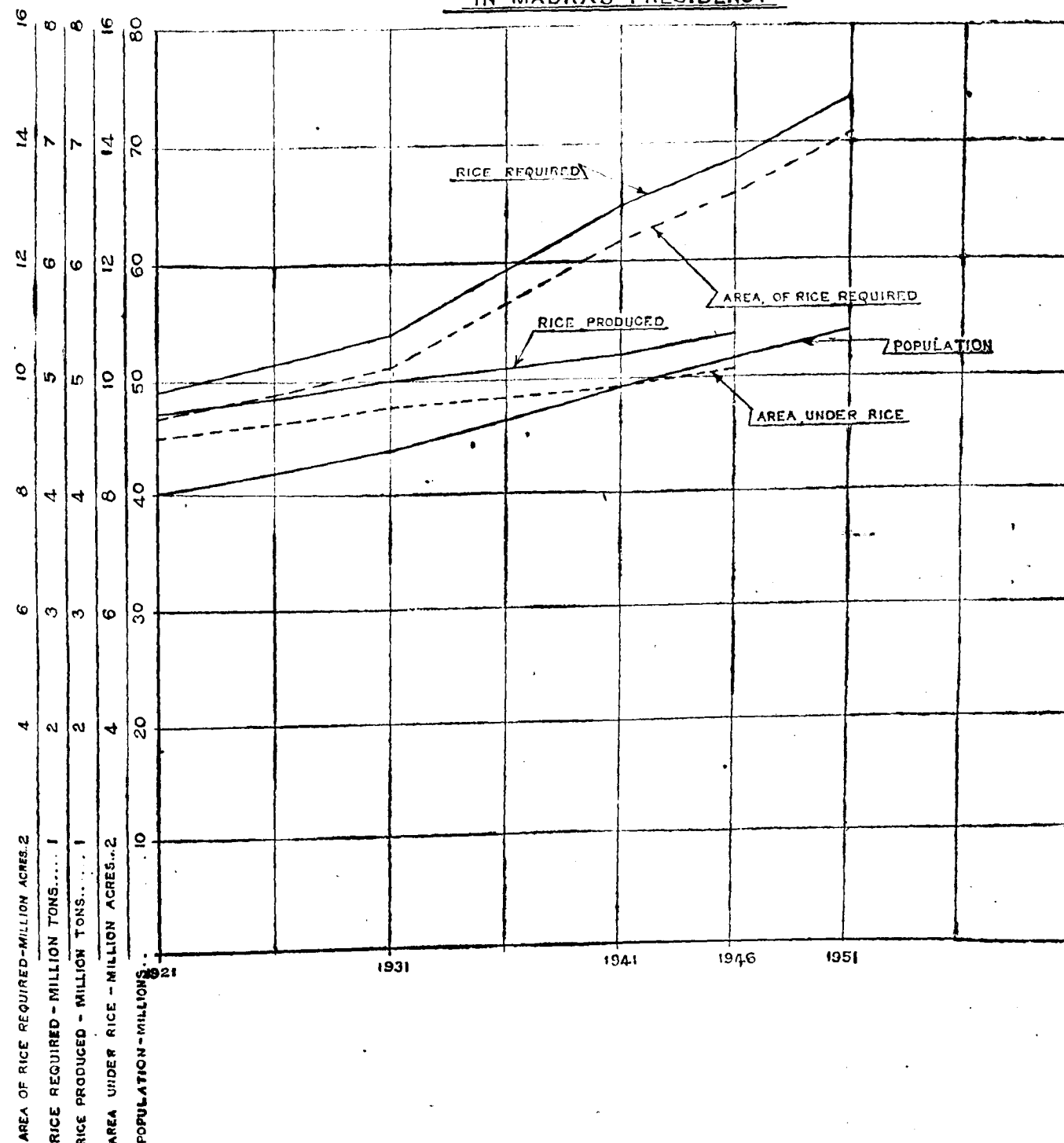
(f) Waiver of import duty on machinery obtained for the execution of the projects would be a gesture on the part of the Government of India.

9. Statement V shows the probable expenditure in the first five years. This statement is very approximate and is only illustrative of the general position.

10. I may now conclude by saying that of all Provinces in India, with the probable exception of Bombay, Madras is the greatest deficit Province in the matter of food of any in the dominion of India. It would be a great tragedy for a major Province like Madras to have to subsist on an 8 oz. ration of rice, the lowest in India, and look to other Provinces and to other parts of a war-stricken world for their daily food. This state of chronic and continuing deficits must be ended in the shortest possible time. There is no known way of doing it except by stepping up production from land (a) by increasing production on existing land and (b) by bringing new land under cultivation. The former depends on the continual and adequate supply of fertilizers while the latter is calculated to ensure permanent additions to the material wealth and prosperity of the land. I cannot too strongly emphasize the need for proceeding with the Madras Irrigation Projects, big or small, in full measure and with full steam ahead solving in the best way possible all problems relating to finance and personnel with a view to make this Province self-sufficient in the matter of food. Very recently Sri Jairam Das Doulatram, Food Member of Government of India, has stated (as reported in the Indian Express, dated February 16, 1948) that "The country as a whole has not been gripped with the feeling that production is an emergency problem for us. We have not got the sense of emergency in dealing with the question of production. We develop that sense when the war is on. But we do not realize that India has been a deficit country in the matter of food for a very long time. It is only when we develop that sense of emergency with regard to production, we will be able to handle this problem satisfactorily."

A. R. VENKATACHARI,
Chief Engineer for Irrigation.

DIAGRAM ACCOMPANYING
THE NOTE ON IRRIGATION DEVELOPMENT
IN MADRAS PRESIDENCY



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STATEMENT I.—Statement showing the population (probable) in 1946, the actual extent under paddy and the extra extent required to meet the demand at 1½ lbs. of (cleaned) rice per head of the population.

Serial number and name of district.	(1)	(2) Population in lakhs during 1946.	(3) Adults in lakhs 75 per cent of column (2).	(4) Population depending on millets in lakhs.	(5) Balance of population depending on rice in lakhs.	(6) Requirements at 1½ lb. per head per day in thousands of tons (cleaned rice).	(7) Corresponding paddy in thousands of tons 10/7 of column (6).	(8) Corresponding extent in thousands of acres 4/3 of column (7).	(9) Actual extent under paddy irrigated and unirrigated in thousands of acres.	(10) Actual rice produced in thousands of tons.	(11) Surplus (+) deficit (—) in thousands of tons.	(12) Surplus in rice producing area in thousands of acres.	(13) Deficit in rice producing area in thousands of acres.
1 West Godavari ..	14.49	10.87	11.37	11.37	10.87	266.66	379.50	506.90	676.1	354.95	89.30	170.1	..
2 Krishna ..	15.16	11.37	11.37	11.37	10.87	277.88	386.84	506.90	676.1	354.95	89.30	170.1	..
3 Guntur ..	15.91	11.37	11.37	11.37	10.87	277.88	386.84	506.90	676.1	354.95	89.30	170.1	..
4 Anantapur ..	12.30	9.23	9.23	9.23	8.72	243.42	338.77	448.37	594.1	307.70	218.45	205.2	..
5 Chittoor ..	11.10	8.33	8.33	8.33	7.82	214.32	300.44	398.26	525.3	270.03	143.27	14.6	..
6 Nellore ..	11.10	8.33	8.33	8.33	7.82	214.32	300.44	398.26	525.3	270.03	143.27	14.6	..
7 Tiruchirappalli ..	12.30	9.23	9.23	9.23	8.72	243.42	338.77	448.37	594.1	307.70	218.45	205.2	..
8 Tanjore ..	12.30	9.23	9.23	9.23	8.72	243.42	338.77	448.37	594.1	307.70	218.45	205.2	..
9 South Kanara ..	16.90	12.00	12.00	12.00	11.50	293.28	418.97	558.60	744.0	387.75	63.38	1,242.1	..
Total ..	177.03	132.79	58.7	74.09	1,810.76	2,356.61	3,448.74	4,600.0	2,482.30	631.38	1,242.1	..	..
11 Vizianagaram ..	40.39	30.29	30.29	30.29	29.29	740.29	1,057.50	1,410.00	1,844.5	887.61	357.64	..	675.5
12 East Godavari ..	22.70	17.03	17.03	17.03	16.03	416.21	594.60	792.30	1,044.5	536.37	30.35	..	114.5
13 Kurnool ..	12.03	9.02	9.02	9.02	8.52	54.26	77.51	103.80	134.4	68.70	34.70	..	29.0
14 Bellary ..	11.04	8.28	8.28	8.28	7.78	50.74	71.64	95.23	125.0	63.97	31.11	..	274.5
15 Chingleput and Madras ..	27.32	20.49	20.49	20.49	19.49	500.74	714.40	932.53	1,214.0	612.10	244.11	..	379.2
16 South Arcot ..	27.32	20.49	20.49	20.49	19.49	500.74	714.40	932.53	1,214.0	612.10	244.11	..	379.2
17 North Arcot ..	27.32	20.49	20.49	20.49	19.49	500.74	714.40	932.53	1,214.0	612.10	244.11	..	379.2
18 Salem ..	27.32	20.49	20.49	20.49	19.49	500.74	714.40	932.53	1,214.0	612.10	244.11	..	379.2
19 Coimbatore ..	27.32	20.49	20.49	20.49	19.49	500.74	714.40	932.53	1,214.0	612.10	244.11	..	379.2
20 Madras ..	27.32	20.49	20.49	20.49	19.49	500.74	714.40	932.53	1,214.0	612.10	244.11	..	379.2
21 Madras ..	27.32	20.49	20.49	20.49	19.49	500.74	714.40	932.53	1,214.0	612.10	244.11	..	379.2
22 Madras ..	27.32	20.49	20.49	20.49	19.49	500.74	714.40	932.53	1,214.0	612.10	244.11	..	379.2
23 Madras ..	27.32	20.49	20.49	20.49	19.49	500.74	714.40	932.53	1,214.0	612.10	244.11	..	379.2
24 Nilgiris ..	2.21	1.66	1.66	1.66	1.66	40.57	57.92	77.30	102.4	53.05	27.34	..	71.5
Total ..	341.07	255.78	46.5	209.28	5,114.90	7,305.85	9,740.96	13,180.70	10,160.1	5,354.03	1,305.94	1,242.1	4,270.7
Grand total ..	518.10	389.57	105.2	238.37	6,925.66	9,892.46	13,180.70	10,160.1	5,354.03	1,305.94	1,242.1	4,270.7	..

Deficit area in millions of acres—(Difference of cols. (12) and (13))
And 5 per cent of the area in col. (9) for seeds, etc.

Deficit in million acres ..

Population as per 1941 census—44.2 millions.

NOTE.—Column (2) is the population as per 1941 census report plus 2½ millions as per increase in census figures of 1931 and 1941.

Column (3) corresponds to adults as per S. Y. Krishnaswami's note.

Column (4) as per S. Y. Krishnaswami's report, worked out on proportionate basis 10,345,000 (millets eating population).

Column (5) as per season and crop report.

18,719,000 (Total population of 10 districts partly or mostly depending on millets).

STATEMENT II.—Statement showing the population (probable) in 1951, the actual extent under paddy and the extra extent required to meet the demand at 1½ lbs. of (cleaned) rice per head of the population.

Serial number and name of district.	(1)	(2) Population in lakhs during 1951.	(3) Adults in lakhs—75 per cent of column (2).	(4) Population depending on millets in lakhs.	(5) Balance of population depending on rice in lakhs.	(6) Requirements at 1½ lb. per head per day in thousands of tons (cleaned rice).	(7) Corresponding paddy in thousands of tons 10/7 of column (6).	(8) Corresponding extent in thousands of acres 4/3 of column (7).	(9) Actual extent under paddy irrigated and unirrigated in thousands of acres.	(10) Actual rice produced in thousands of tons.	(11) Surplus (+) deficit (—) in thousands of tons.	(12) Surplus in rice producing area in thousands of acres.	(13) Deficit in rice producing area in thousands of acres.
1 West Godavari ..	15.18	11.38	11.38	11.38	10.87	274.10	387.3	516.7	676.1	354.95	76.88	14.64	..
2 Krishna ..	15.88	11.91	11.91	11.91	11.38	294.10	415.9	554.5	744.0	387.75	16.60	31.64	..
3 Guntur ..	15.88	11.91	11.91	11.91	11.38	294.10	415.9	554.5	744.0	387.75	16.60	31.64	..
4 Nellore ..	15.88	11.91	11.91	11.91	11.38	294.10	415.9	554.5	744.0	387.75	16.60	31.64	..
5 Chittoor ..	15.88	11.91	11.91	11.91	11.38	294.10	415.9	554.5	744.0	387.75	16.60	31.64	..
6 Tiruchirappalli ..	15.88	11.91	11.91	11.91	11.38	294.10	415.9	554.5	744.0	387.75	16.60	31.64	..
7 Tanjore ..	15.88	11.91	11.91	11.91	11.38	294.10	415.9	554.5	744.0	387.75	16.60	31.64	..
8 South Arcot ..	15.88	11.91	11.91	11.91	11.38	294.10	415.9	554.5	744.0	387.75	16.60	31.64	..
Total ..	160.93	120.69	45.6	75.09	1,835.97	2,622.8	3,497.0	4,461.8	2,342.39	501.18	823.04	..	..
9 Vizianagaram ..	42.31	31.73	31.73	31.73	30.73	772.5	1,107.9	1,477.2	1,944.5	987.61	389.92	..	742.70
10 East Godavari ..	23.78	17.84	17.84	17.84	16.84	436.0	622.9	830.8	1,084.4	568.37	79.64	..	161.70
11 Kurnool ..	12.61	9.46	9.46	9.46	8.96	63.02	88.2	117.6	154.4	78.40	28.53	..	54.46
12 Bellary ..	11.56	8.67	8.67	8.67	8.17	60.37	85.5	114.0	149.1	74.40	28.53	..	54.46
13 Anantapur ..	12.61	9.46	9.46	9.46	8.96	63.02	88.2	117.6	154.4	78.40	28.53	..	54.46
14 Chingleput and Madras ..	28.64	21.48	21.48	21.48	20.48	528.20	751.70	1,002.30	1,333.3	677.00	169.05	..	332.70
15 South Arcot ..	28.64	21.48	21.48	21.48	20.48	528.20	751.70	1,002.30	1,333.3	677.00	169.05	..	332.70
16 North Arcot ..	28.64	21.48	21.48	21.48	20.48	528.20	751.70	1,002.30	1,333.3	677.00	169.05	..	332.70
17 Salem ..	28.64	21.48	21.48	21.48	20.48	528.20	751.70	1,002.30	1,333.3	677.00	169.05	..	332.70
18 Coimbatore ..	28.64	21.48	21.48	21.48	20.48	528.20	751.70	1,002.30	1,333.3	677.00	169.05	..	332.70
19 Madras ..	28.64	21.48	21.48	21.48	20.48	528.20	751.70	1,002.30	1,333.3	677.00	169.05	..	332.70
20 Madras ..	28.64	21.48	21.48	21.48	20.48	528.20	751.70	1,002.30	1,333.3	677.00	169.05	..	332.70
21 Madras ..	28.64	21.48	21.48	21.48	20.48	528.20	751.70	1,002.30	1,333.3	677.00	169.05	..	332.70
22 Madras ..	28.64	21.48	21.48	21.48	20.48	528.20	751.70	1,002.30	1,333.3	677.00	169.05	..	332.70
23 Madras ..	28.64	21.48	21.48	21.48	20.48	528.20	751.70	1,002.30	1,333.3	677.00	169.05	..	332.70
24 Nilgiris ..	2.31	1.73	1.73	1.73	1.73	42.30	60.40	80.50	106.0	53.05	39.22	..	74.70
Total ..	381.96	296.41	59.6	227.81	5,367.68	7,406.65	9,939.62	10,586.15	5,698.30	3,021.73	2,168.91	823.04	4,892.84
Grand total ..	542.70	407.10	105.20	302.90	7,406.65	10,586.62	14,083.13	10,160.10	5,354.03	1,305.94	1,242.1	4,892.84	..

Deficit extent column (13) minus column (12)
And 5 per cent of the extent column (9) for seeds, etc.

Deficit area in million acres ..

Millions of acres ..

NOTE.—Column (2) is the population as per 1941 census report plus 5 millions as per increase in census figures of 1931 and 1941.

Column (3) corresponds to adults as per Mr. S. Y. Krishnaswami's note, page 5.

Column (4) as per Mr. S. Y. Krishnaswami's report—vide page 3, worked out on proportionate basis 10,345,000 (millets eating population).

Column (5) as per season and crop report.

STATEMENT III, PART I.—*Statement showing irrigation schemes for more than 100,000 acres.*

Serial number and name of district.	Name of scheme.	Extent of ayacut in acres.		Cost in rupees.
		Dry crops.	Wet crops.	
1 Kistna	Kistna-Pennar Reservoir Project .. .. .	.. .. .	2,500,000	78,00,00,000
2 Cuddapah	Gnadikota Project .. .. .	.. .. .	to 3,000,000	3,45,00,000
3 Coimbatore	Lower Bhavani Project	100,000	.. .. .	7,00,00,000
		207,000	.. .. .	.. .. .
	Total	307,000	2,500,000 to 3,000,000	88,45,00,000 or 89 crores.

STATEMENT III, PART II.—*Statement of schemes for more than 10,000 acres but below 100,000 acres.*

Serial number and name of district.	Name of scheme.	Extent of new irrigation in acres.	Cost in rupees.	Stage.
1 Vizagapatam	Vamsadhara Project	30,000	1,80,00,000	To be investigated.
	Makkuvagedda Project	12,000	70,00,000	Do.
	Reservoir across Janjavati river	11,000	1,10,00,000	Do.
		(1 crop) plus 13,000 (II crop)	.. .. .	.. .. .
		25,000 (I) Crop	3,25,00,000	Do.
		40,000 (II) Crop	.. .. .	.. .. .
2 West Godavari	Arundal dam across Sarada river	13,300	80,00,000	Do.
3 Kistna	Reservoir across Tamnilleru	16,900	1,00,00,000	Do.
	Anumanalanka	25,000	1,50,00,000	Do.
4 Guntur	Budameru	20,000	1,00,00,000	Do.
5 Anantapur	Gundalakamma	28,500	1,50,00,000	Investigated.
	Perur Project	10,500	75,00,000	Do.
	Mid-Pennar Project	10,500	60,00,000	To be investigated.
	Bhairavanitippa	10,000	60,00,000	Under investigation.
		(new in addition to existing wet).	.. .. .	.. .. .
6 Nellore	Rallapad Reservoir	14,800	75,00,000	Investigated.
7 North Arcot	Sathanur	20,000	1,24,00,000	To be investigated.
8 Salem	Canal from Mettur reservoir	45,000	2,45,00,000	Investigated.
9 Coimbatore	Aliyar Dam	10,000	80,00,000	To be investigated.
10 Thiruchirappalli	Kattalai High Level Channel	20,000	90,00,000	Investigated.
	Pullambadi	22,000	80,00,000	Do.
11 Madurai	Vaigai Reservoir	12,500	1,65,00,000	Do.
12 Malabar	Malampuzha	40,000 (II) Crop	3,60,00,000	Do.
	Kanhirapuzha	25,000	1,50,00,000	Under investigation.
	Waiyalar	16,600	40,00,000	Do.
		491,800	28,49,00,000 or 28 crores.	.. .. .

STATEMENT III, PART III.—*General abstract.*

Part	I—Schemes for more than 100,000 acres	II—Schemes between 10,000 and 100,000 acres	III—Schemes below 10,000 acres.—Grow More Food schemes and others	CRORES.
..	.. .. .	.. .. .	.. .. .	89
..	.. .. .	.. .. .	.. .. .	28
..	.. .. .	.. .. .	.. .. .	13
	Total .. .. .	.. .. .	.. .. .	130

IRRIGATION DEVELOPMENT IN MADRAS PROVINCE

STATEMENT IV.—*Statement showing the periods of execution and development of the irrigation projects in the Madras Presidency.*

Serial number and name of scheme.	Probable cost of the scheme.	Probable ayacut in acres.	Investigation stage.		Execution.		Development.	
			Commencement of work.	Completion of work.	Commencement of work.	Completion of work.	Date when full ayacut will be reached.	Date when full ayacut will be reached.
1 Vamsadhara Project	1,80,00,000	30,000	To be investigated	.. .. .	1951	1954	1953	1955
2 Gandikota Project	3,45,00,000	100,000	Partly investigated	.. .. .	1949	1952	1951	1955
3 Canals from Mettur Reservoir	2,45,00,000	45,000	Investigated	.. .. .	1948	1950	1950	1953
4 Lower Bhavani Project	7,00,00,000	207,000	Investigated	.. .. .	1948	1953	1952	1958
5 Kistna-Pennar Project	78,00,00,000	2,500,000	To be investigated	.. .. .	1951	1958	1955	1965
6 Makkuvagedda	70,00,000	12,000	Do.	.. .. .	1951	1952	1953	1955
7 Reservoir across Janjavati	1,10,00,000	11,000	Do.	.. .. .	1951	1954	1955	1956
8 Arundal Dam across Sarada River	3,25,00,000	25,000	Do.	.. .. .	1951	1953	1953	1955
9 Tuni or Thandava Reservoir	80,00,000	13,300	Do.	.. .. .	1949	1951	1951	1954
10 Tamnilleru Reservoir	1,10,00,000	16,900	Partly investigated	.. .. .	1950	1953	1953	1957
11 Anumanalanka	1,50,00,000	25,000	To be investigated	.. .. .	1950	1951	1951	1954
12 Budameru Reservoir	1,10,00,000	20,000	Partly investigated	.. .. .	1949	1952	1952	1956
13 Gundalakamma	1,50,00,000	28,500	Investigated	.. .. .	1948	1950	1951	1953
14 Perur Project	75,00,000	10,500	Do.	.. .. .	1949	1951	1951	1954
15 Mid-Pennar Project	60,00,000	10,500	Under investigation	.. .. .	1949	1952	1952	1955
16 Bhairavanitippa Project	60,00,000	10,000	Do.	.. .. .	1949	1951	1951	1954
17 Rallapad Reservoir	1,24,00,000	14,800	Investigated	.. .. .	1949	1952	1952	1955
18 Sathanur Reservoir Project	90,00,000	20,000	To be investigated	.. .. .	1950	1951	1951	1954
19 Aliyar dam	80,00,000	22,000	Investigated	.. .. .	1948	1950	1951	1953
20 Kattalai High Level Channel	1,65,00,000	12,500	Do.	.. .. .	1948	1950	1951	1953
21 Pullambadi Scheme	3,60,00,000	40,000	Do.	.. .. .	1949	1952	1952	1956
22 Vaigai Reservoir Scheme	1,50,00,000	25,000	Under investigation	.. .. .	1949	1951	1951	1954
23 Malampuzha	40,00,000	16,600	Do.	.. .. .	1949	1950	1951	1954
24 Kanhirapuzha .. .. .	.. .. .	.. .. .	.. .. .	.. .. .	.. .. .	.. .. .	.. .. .	.. .. .
25 Waiyalar Reservoir Scheme .. .. .	.. .. .	.. .. .	.. .. .	.. .. .	.. .. .	.. .. .	.. .. .	.. .. .
	1,16,94,00,000	32,45,600	.. .. .	.. .. .	.. .. .	.. .. .	.. .. .	.. .. .

STATEMENT V.—Programme of probable expenditure on the irrigation schemes and projects.

Serial number and district.	Name of scheme.	Stage.	Probable cost of the scheme in lakhs of rupees.	Probable yearwise expenditure in rupees.			
				1948-49.	1949-50.	1950-51.	1951-52.
			LAKHS.	LAKHS.	LAKHS.	LAKHS.	LAKHS.
A. SCHEMES COSTING MORE THAN 20 LAKHS.							
1 Kurnool-Cuddapah, Mellore-Chittoor-Chingleput-South Arcot.	Kistna-Pennar Project	Under investigation	7,800 (78 crores).	2,500,000 (25 M.A.C.)	50	100	100
2 Coimbatore	Lower Bhavani Project	Sanctioned	700 (7 crores)	207,000	200	200	170
3 Cuddapah	Gandikottah Project	Investigated 'partly'	345 (3.45 crores)	100,000	5	25	100
4 Gunur	Gundalakamma Project	Do.	150 (1.5 crores)	28,500	NIL	10	30
5 Anantapur	Perur Project	Do.	76 (0.76 crores)	10,500	10	18	20
6 Nellore	Rallapet Reservoir Project	Do.	76 (0.76 crores)	14,500	5	20	25
7 Coimbatore and Salem	Canals from Mettur Reservoir	Do.	245 (2.45 crores)	45,000	50	80	40
8 Tiruchirappalli	Kattalai High Level Channel	Do.	80 (0.8 crores)	20,000	20	25	18
9 Do.	Pullambadi Scheme	Do.	80 (0.8 crores)	22,000	20	25	13
10 Madurai	Valgaal Reservoir Scheme	Do.	165 (1.65 crores)	12,500	NIL	10	50
11 Malabar	Malampuzha Reservoir Scheme	Do.	380 (3.80 crores)	40,000	2	40	118
12 Nellore	Atteru Project	Do.	85 (0.85 crores)	4,349	10	15	NIL
13 West Godavari	Tamileru Reservoir Project	Partly investigated	100 (one crore)	16,900	5	10	30
14 Kistna	Budameru Reservoir Project	Do.	100 (one crore)	20,000	NIL	5	10
15 Anantapur	Mid-Pennar Project	Under investigation	80 (0.8 crores)	10,500	5	10	25
16 Do.	Bhairavani Project	Do.	60 (0.6 crores)	10,000	5	10	20
17 Do.	Kashirapuzha Scheme	Do.	150 (1.5 crores)	25,000	1	10	20
18 Do.	Walayar Scheme	Do.	40 (0.4 crores)	16,000	1	5	14
19 Coimbatore	Amaravathi Reservoir Scheme	Do.	100 (one crore)	7,000	NIL	1	5
20 North and South Arcot	Sathanur Project	Do.	124 (1.24 crores)	20,000	1	10	10
21 Vizagapatnam	Vamsadhara Project	To be investigated	180 (1.8 crores)	30,000	0.5	1	10
22 Do.	Makuradada Project	Do.	70 (0.7 crores)	12,000	NIL	0.5	1
23 Do.	Reservoir across Janavathi	Do.	110 (1.1 crores)	11,000	NIL	0.5	1
24 Do.	Arundal dam across Sarada	Do.	325 (3.25 crores)	25,000	NIL	1	2
25 Do.	Tuni or Thandava Reservoir	Do.	80 (0.8 crores)	13,300	NIL	0.5	1
26 West Godavari	Anumukunda Project	Do.	150 (1.5 crores)	25,000	NIL	1	5
27 Coimbatore	Aliyar Dam	Do.	60 (0.6 crores)	10,000	NIL	0.5	1
28 Madurai	Forandur Scheme	Do.	85 (0.85 crores)	15,300	NIL	4	5
29 Tinnevely	Mannudhar Scheme	Do.	110 (1.1 crores)	20,000	NIL	0.5	1
			12,023 (120.23 crores)	8,992,949 (89.93 crores)	49	320	900
					620	10	1,300.5

STATEMENT V.—Programme of probable expenditure on the irrigation schemes and projects—cont.

Serial number and district.	Name of scheme.	Stage.	Probable cost of the scheme in lakhs of rupees.	Probable yearwise expenditure in rupees.			
				1948-49.	1949-50.	1950-51.	1951-52.
			LAKHS.	LAKHS.	LAKHS.	LAKHS.	LAKHS.
B. SCHEMES COSTING RS. 20 LAKHS AND LESS.							
1 East Godavari	Coringa Island Project	Investigated	19	8,000	2	6	NIL
2 Coimbatore	Tattahalla Scheme	Do.	20	4,500	NIL	5	5
3 Do.	Doddahalla Scheme	Do.	16	3,000	NIL	4	4
4 Chingleput	Anadur Scheme	Under investigation	15	No extension of ayacut.	2	5	1
5 All districts G.M.F.	Schemes in 1947-48 list	Partly investigated and to be investigated.	165	98,008	30	65	3
6 All districts	Schemes in 1948-49 list	Do.	225	108,437	78	65	20
7 Do.	Schemes in 1949-50 list	Do.	90	60,079	NIL	36	26
			559	277,224	112	150	73
					187		10
C. SCHEMES UNDER EXECUTION.							
1 Tanjore and Tiruchirappalli.	Drainage improvements to the existing Sathyapatti.	Sanctioned	29.5	NIL	7	7.5	NIL
2 Kistna and Gunur	Drainage improvements to the existing Kistna Delta.	Do.	115	NIL	24	30	NIL
			144.5	NIL	31	37.5	NIL



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