

fruit at harvest, grading and packing should all be considered as logical corollaries of cold storage, which in itself is one of the potent means of contributing towards maximising food production.

**Land Utilisation:** Governmental plans towards attainment of self-sufficiency in food take into account a computed deficit of 10 per cent in our requirements of food grains. This is sought to be made up by bringing under the plough cultivable wastes, by providing irrigation to erstwhile dry land areas, by intensive cultivation of existing arable land adopting improved farm practices, and by encouraging the cultivation of quick-growing and heavy yielding subsidiary food crops.

It may be emphasised, that the outlook for fruits and vegetables as calorie producers is brighter because they produce in general terms much more from the land than any cereal crop is known to do. Even if this were not so, a scheme for increased output of fruits and vegetables has other resources at its command for intensive land utilisation.

One of these is the harnessing of marginal lands unsuited for arable farming to the raising of a variety of hardy fruits and vegetables such as the jujube, custard apple, *Phyllanthus*, tamarind, wood apple, drumsticks, yams, tapioca and the like. Another is the build up of a fruit landscape by a merging of fruit bearing trees into the accessible fringes of forests near and around the villages. A third is the planting of shady fruit trees along the highways and roads to form avenues. A fourth is the intensive intercropping of prebearing orchards with a wide variety of vegetables and bush fruits almost throughout the year. All these are means and modes peculiar to horticulture alone and are of real significance in maximising food production.

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## Concentration on Intensive Manuring is the only way for Maximisation of Crop Production.

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India is an agricultural country and nearly 83% of the cultivable area is under food crops, 31.6% under rice, 29% under millets and other cereals and 24.7% under wheat. In spite of these, we are in deficit in food grains and import large quantities from outside. There was of course a reduction in area under food crops — due to the partition of the country. The proportion was unfavourable to us as the Indian Union has to maintain 78% of her original population with only 71.7% of original area under rice and 72% under wheat and hence naturally our problem is one of cultivation with the limited area available.

The drive for increased food production was attempted in two directions, firstly by bringing new areas under food crops, diverting areas under non-food crops to food crops, increasing double crop cultivation and also cultivation during the off-season, and secondly by intensive cultivation, by the use of improved seeds and better manuring.

Our attempts at bringing waste lands into cultivation have not been as great a success, as expected; as the increased area under food crops were not commensurate with the additional expenditure incurred in reclaiming the lands and bringing them into cultivation. The State was also in deficit in the production of cotton and other commercial crops. Large areas have been brought under cultivation but due to the failure of North-East-monsoon rains for the last three seasons, our attempts in this direction did not come up to our expectations. There was success in the spread of improved paddy and other seeds; but the good effect of these was marred by the failure of seasons, with untimely planting and harvests. Thus in spite of strenuous activities under the "Grow More Food" campaign our success in increasing food production was not appreciable. As a matter of fact, figures show that the average yield of paddy per acre has not increased to the extent expected, especially in the Tanjore Delta, the granary of South India and the largest district under paddy cultivation in Madras State viz., 13½ lakhs of acres. This would be clear from the figures of crop-cutting experiments conducted in the district for the last five years:—

Year	Average acre yields in Tanjore district	
	Kuruvai	Samba
1945-'46	1755 lb.	1064 lb.
1946-'47	1401 ..	1234 ..
1947-'48	1492 ..	1495 ..
1948-'49	1424 ..	1425 ..
1949-'50	1260 ..	1406 ..

The average yield of paddy for Tanjore district as per the "Season and Crop Reports" is 1750 lb. per acre. In Aduthurai Farm, where judicious manuring is being adopted, the average yield figures for any crop viz., Kuruvai, Samba and Thaladi is more than 3500 lb. with maximum yields of 4800 lb. per acre. These figures show clearly that the ryots in general do not apply sufficient quantities of manures to the fields with the consequence that their paddy yields are very low. It is also found from past experience, that our attempts to give manures only to food crops have not been a complete success and instances have come to our notice of manures intended for food crops being used for other commercial crops. Further, either due to the poverty of the ryots or due to peculiar tenure systems, ryots are not very keen on applying manures to their lands and get increased production. In the Tanjore Delta, where there is assured water supply, the intake of ammonium

sulphate was never more than 2000 to 3000 tons per year for such an extensive area of  $13\frac{1}{2}$  lakhs of acres. Similarly even when phosphatic manures were sold at concessional rates the sales were not to our expectations and large quantities of super and granular phosphate were left unsold in various depots during the last season. Again it has been proved that green manuring or green leaf manuring for paddy gives increased yields and in Tanjore Delta where *kolinji* is being grown in more than  $2\frac{1}{2}$  lakhs of acres the yield of plots grown with *kolinji* crop puddled in are invariably higher than without green manure. These facts are known to every mirasdar but in spite of these, green manure and application of fertilisers have not come up to our expectations. Hence there is an urgent need for concentrating on green manuring and manuring with fertilisers in the Tanjore Delta and in other districts where there is an assured water supply to ensure a paddy crop when once it is planted. Such tracts in this State are (1) Tanjore Delta (2) Periyar Tract (3) Thambraparni Tract and (4) Krishna, Godavari, and Nellore Deltas. In all these tracts there is copious water supply and yields can be increased by at least 20% by the application of manures (green manure and fertilisers). A ready-made mixture can be advocated to each tract viz., groundnut cake, phosphate, and ammonium sulphate with a basal dressing of green manure or at least some organic manure. The manures should be applied by Government agency through the Agriculture Departmental staff just before planting. Regarding green manuring—for instance in Tanjore Delta, *Kolinji* can be arranged to be sown compulsorily just a week before harvest of paddy crop. A band of maistries with a number of coolies to each may go round the villages and effect the sowings of *Kolinji* seeds in all the fields—taking advantage of 100% subsidy given by the India Government—the cost of the operating staff alone should be met by State Government. Similarly various manures should be stocked in villages just before the season and should be distributed and applied under departmental supervision. The cost of the manure should be collected at the time of collection of *kist* or land assessment. The present district staff should be augmented and the staff from other districts should be deputed to work in tracts where manure is to be applied for temporary periods. The senior students from the two Agricultural Colleges may also be deputed for short periods to attend to this work as was done during the year 1917-'18 in the Tanjore Delta for popularising fish manure. Some may go even further and call in military help for this work. A small unit to each agricultural demonstrator can be provided so that with their help the manure can be easily spread in fields, just in time before planting. If this is done yields can be increased by at least 20%, allowing 5% for pests and unforeseen circumstances. At the first instance the experiment may be tried in the Tanjore Delta during *Kuruvai* and *Samba* season and later extended to other districts where there is assured water supply.

The normal area in the Tanjore district, including double crop paddy is 13,27,800 acres and taking a moderate figure of 200 lb. as increased yields due to manuring (though increased yields up to 500 lb. can be easily expected), the extra production will be nearly 1,18,553 tons in a single year. If the scheme is extended to all the tracts mentioned above, then it is possible to increase production by nearly 4 lakhs of tons in one year and our All-India deficiency in rice can be made up in just two seasons viz., 1950-'51 and 1951-'52.

The above scheme may involve a large expenditure, but we are now spending huge sums of money to get food grains from outside and that amount can be easily spent on the above scheme and self-sufficiency can be attained within the period prescribed by the India Government. Food production is to be treated as a war measure, and hence it is of utmost importance to take up such a revolutionary method to increase food production. Unless this is done, maximisation of production can be hardly attained before the dead line fixed by the India Government.

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## Maximisation of Crop Production through Adequate Irrigation

By

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Provision of irrigation facilities is the most potent single factor in any scheme of increased crop production, especially in a country like ours where the monsoons are often erratic and the rains precarious. No doubt, better seeds, more manure and scientific methods of cultivation do play their parts in increasing crop yields. But without adequate and timely supply of water, these cannot produce effective results. By providing an assured supply of water, crop production may be increased by 100%, for the dry land can be converted into a garden land, the garden land into a wet land and the single crop wet land into a double crop wet land.

Irrigation has been in vogue in India from time immemorial and this country is said to be the original home of irrigation. India leads the world in the field of irrigation even after partition. We have still 47 millions acres of irrigated land. But this area though considerable, represents only 1.5th of the total area under cultivation. Of the total area irrigated in our State, Government canals from river projects served 42%, tanks 36%, wells 16% (including subsidy wells) private canals and other sources 6%.