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# "GROW MORE FOOD" POLICY IN INDIA *

*by*

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While emphasizing the seriousness of the problem in India, I feel it necessary to draw attention to the fact that not only India but most of the world is also being affected by food shortages. In countries like Brazil and Mexico, the present consumption of food is 1 to 10 per cent below the pre-war level while in more unfortunate countries such as Rumania and Germany, consumption has fallen by over 30%. Food exports from the surplus countries are being allocated by an international organisation, and world supplies fall short of world demand. The food situation in India, therefore has to be viewed in the context of the world food situation.

The Grow More Food campaign of the Government of India is being criticised all over the country, both by economists as well as by laymen. It is suggested that there has been no increase in food production and that the entire campaign has been a failure. I do not want to suggest that the campaign was a success; but I do think that current criticism of the Grow More Food Campaign is not wholly fair to its organisers. There is no doubt that the seasonal factors during the last few years have not been particularly helpful and this has prevented the country from getting the full benefit of the increase in production that should have followed the increase in acreage. At the same time, I should like to emphasise that the quantity of cereals procured by Government should not be identified with the quantity produced in the country. Out of 50 million tons of cereals produced in undivided India, not more than 4½ to 5 million tons were procured by Government, the ratio of procurement to production in the country as a whole seldom exceeding 10%. Thus only a small proportion of the increase in production would be reflected in procurement figures. Consequently, it is not possible to judge the success of the Grow More Food Campaign from the results of the Government's progress in procuring food-grains.

As far as the campaign itself is concerned, I deprecate any attempt by Government to take credit to itself for the large diversion in acreage that has taken place from non-food crops to food crops. Excepting for Bombay, no systematic attempt has been made to bring about this diversion and such diversion as it occurred had largely been due to purely commercial causes. There had been a large diversion of acreage from cotton to food-grains but not from ground-nuts to food-grains; in fact ground-nut production has in-

* This is a summary of the speech delivered by Dr. Rao while initiating the discussion on this subject.

creased in the country since 1944. The real increase in acreage under food-grains brought about by the Grow More Food Campaign is, therefore, smaller than Government's spokesmen are inclined to admit. The real test of the growth in acreage should be the area newly brought under cultivation by provision of irrigation, reclamation and similar facilities.

The other measures undertaken for increasing food production are sinking of wells, distribution of fertilisers, and improvement of seed. The net result of the efforts made by Government in these respects is not very substantial in terms of the actual increase in production.

As regards the future, measures for increase in food production are well known and it is not necessary to dilate upon them or to appoint new committees for the purpose of suggesting new remedies. Suggestions for improvement of Indian agriculture have been discussed in detail in various blue books since the publication of Dr. Voelcker's report towards the end of the 19th century. What was required was implementation.

How is this implementation to be obtained? One of the most popularly suggested remedies is mechanization of agriculture. Reclaim land, mechanize cultivation and thus increase yield is the view of the advocates of these measures. It must be emphasized that as far as increase in agricultural efficiency is concerned, mechanization is only one of many possible means of improvement, and that it is very difficult to apply it with the existing area under cultivation as long as our farms remain sub-divided and fragmented. Reclamation of land hitherto never under cultivation is possible, but is accompanied by numerous difficulties and is subject to all the problems of colonization. I feel, however, that reclamation of land originally under cultivation but now overgrown with weeds is more practicable; such land could be reclaimed and also kept free from weeds by deep ploughing once in five years. Lands in malarious tracts could also be reclaimed with the help of machinery and anti-malarial measures. But mechanization is no over-all national remedy for the low productivity of Indian agriculture. What Indian agriculture as a whole requires is improvement of cultivation and increase in yield in the small farms; and for achieving this no spectacular measures can be of much assistance.

In my opinion, the most important approach to the problem of growing more food is through increase of facilities to the small farmer and by the improvement of farm practices. Much more stress should be laid on the sinking of wells and the provision of small irrigational facilities and similarly on the distribution of improved seeds. I also feel that agricultural research has largely been confined in the country hitherto to commercial crops and the time has come for more research to be done on food crops, especially the minor food-grains like millets and pulses. Much more energetic action is also required by way of transmitting to the farmer the results of agricultural research and inducing him to adopt these in his daily occupation.

I am struck by the fact that in spite of lack of mechanization, yield in some of our farms is equal to the highest in any part of the world. What is required is the creation of conditions which would stimulate the average farmer into following the practices of farmers who get better yields. This can be done by bringing successful farmers to the notice of the public so that their farming practices get widely known and thus get the necessary encouragement. At the same time, every attempt should be made to make the farmer community conscious of their place in the social and economic organisation of the country. The farmer's psychology must be studied and new incentives devised to stimulate better farming. It would also be useful if batches of *working* farmers could be sent out to study intensive cultivation in countries like China and Japan.

Finally, it is worth considering whether it would not be helpful if Government could guarantee minimum agricultural prices over a period of years. Even though the present may not be an appropriate time to do this, nevertheless, I feel that there is a lurking fear in the mind of the farmer that prices may collapse, and a guarantee to him that prices will be maintained for a fairly long period of time may remove this fear and encourage the farmer to go ahead with long-term plans for the improvement of his cultivation.

Finally, I feel that there is no point in working out estimates of food deficit in terms of quantities of food-grains and having targets for increased food production in terms of these quantities. Figures of food deficit would vary with different assumptions, and the contradictory character of such estimates only leads to confusion. It would be far better to set up concrete targets in terms of acres of land to be reclaimed, numbers of wells to be sunk, quantity of improved seeds to be distributed, quantity of fertilisers to be subsidized and so on, so that it may be possible to get an objective review of progress in the Grow More Food Campaign.

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## GROW MORE FOOD CAMPAIGN IN ORISSA

*by*

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Planned efforts to increase food production in Orissa under State control and guidance were initiated by the Provincial Government in 1943-44 in common with other provinces in India. Orissa is primarily an agricultural Province and her normal capacity for food production may be gauged from the tables in appendices I and II giving the total acreage under

food crops and the estimated yield of food-grains including pulses. Agriculture is the main industry of nearly 80 per cent of the people. Rice occupies the most important place in her agricultural economy and accounts for nearly 80 per cent of the total acreage under cereals. All the lands are mostly rain-fed except about 25 per cent of the area which is irrigated.

In this note the statistics relating to the States areas which have recently merged with the Province have been left out of consideration as no Grow More Food programme was in operation in those areas previously; the available statistics are extremely meagre and the G.M.F. programme which has been proposed for these areas is still under the consideration of the Provincial and the Central Governments.

Approximately about 94 per cent of the area under cultivation in Orissa is under food crops annually. The area under non-food crops namely, tobacco, cotton, jute, etc., is very small. There has been very little diversion of land from non-food crops to food crops. On the other hand, the disproportionate rise in the prices of commercial crops like tobacco, sugarcane, etc., has provided economic incentives resulting in some increase in the area under these crops. Since 1943, more areas are gradually being reclaimed under the Grow More Food drive and the new areas are almost entirely brought under food crops. The progressive total of the new area reclaimed during the 5-years, 1943 to 1948 is given in the statement below. A chart showing it graphically is also appended at the end.

*RECLAMATION OF LAND*

| Year. | Acres. |
|---|---|
| 1943-44 | 98,414 |
| 1944-45 | 1,70,565 |
| 1945-46 | 1,78,906 |
| 1946-47 | 1,89,867 |
| 1947-48 | 1,96,341 |

The increase in the area and production of rice is given below.—

| Year. | Area in acres. | Yield in tons. | |
|---|---|---|---|
| 1939-40 | 50,82,875 | 13,96,679 | |
| 1940-41 | 50,69,854 | 13,33,109 | |
| 1941-42 | 48,32,234 | 13,48,835 | |
| 1942-43 | 49,69,259 | 12,53,795 | |
| 1943-44 | 50,31,471 | 11,88,113 | |
| 1944-45 | 51,73,119 | 13,63,701 | |
| 1945-46 | 54,59,477 | 13,18,053 | |
| 1946-47 | 54,03,561 | 14,49,743 | |
| 1947-48 | 53,98,078* | 13,16,737 | (estimated) |

*(final forecast.)

The all-out drive to increase food production which was initiated in 1943-44 consisted of several short term measures designed mainly to maximise food production within the shortest possible time permitted by available resources. These schemes with slight minor variations continued in operation till the year, 1947. A list of all these schemes together with the results attained during the 3-years, 1944-45, 1945-46 and 1946-47 are given in appendix III. The actual targets of additional food production reached during these three years have not been worked out on any satisfactory statistical basis, but the results can easily be gauged from the targets of expenditure attained under each scheme. In 1946-47, the Provincial Government formulated a 5-year programme of development for the general economic reconstruction and development of the Province. To bring the food production plans in line with the 5-year programme of economic development, a 5-year scheme under the Grow More Food Campaign was also prepared with the approval of the Central Government. The details of the 5-year G. M. F. programme of the province together with the estimated target of additional production of paddy as a result of the scheme for different years of the 5-year period and the estimated cost of the schemes for different years is given in appendix IV. Of the 48 schemes, 18 of the schemes are directly productive of paddy whereas the remaining schemes have only an indirect bearing on the increase of agricultural production. The details of the schemes given in appendix IV do not include the Emergency Irrigation Schemes nor the schemes for the increased production of protective foods like fish, milk, eggs, etc.

It will be apparent from the list of G.M.F. schemes which are in operation in the Province that the main planks of the G.M.F. drive can be broadly classified as follows:—

(i) Increasing the area under crops by bringing new lands, including the fallow and water-logged areas, under cultivation;

(ii) increasing irrigation facilities by providing for digging of wells, tanks, etc.;

(iii) extended use of manures and fertilisers;

(iv) distribution of improved seeds;

(v) distribution of improved agricultural machinery and implements;

(vi) protection against pests and diseases;

(vii) encouraging increased production of protective foods, namely fruits, vegetables, fish, milk, eggs, etc.;

(viii) miscellaneous schemes for training of scientific and technical personnel, publicity and propaganda, etc.;

The Emergency Irrigation projects which are being undertaken may be broadly classified as follows;—

(a) Conserving rain water by low embankments;

(b) Contour bunding;

(c) Improvement of drainage in water-logged areas;

(d) Minor irrigation works;

(e) Pumping water from rivers, deep reservoirs, etc.

It is not possible in this brief note to deal with the details of each of the schemes which are in operation for increasing the food production.

It can not be denied that some progress has been made in Orissa for increasing food production during the last 5-year period. The results cannot be presented accurately in view of the paucity of reliable agricultural statistics. Steps have already been taken to improve collection, compilation and computation of agricultural statistical data under several post-war schemes and it is hoped that very soon a Provincial Statistical Bureau will be established which will deal with the compilation and publication of accurate statistical data relating to agriculture. However, the figures given in appendices I, II, and III give an idea of increased production of food crops especially rice with the increase in area under cultivation. Orissa is surplus in respect of rice and has been exporting a considerable quantity of rice to other province since 1943-44. The figures of export during the last four years given below illustrate to some extent the actual increase in production.

| Khariff year. | Quantity of rice exported. |
|---|---|
| 1944-45 | 92,364 tons. |
| 1945-46 | 89,875 tons. |
| 1946-47 | 1,25,170 tons. |
| 1947-48 | 1,50,000 tons. |

The target of additional production of food-grains in Orissa during the 5-year period of 1947-48 to 1951-52 under the G.M.F. 5-year plan is 1½ lakhs tons of rice. It is hoped that with the success already achieved, it would be possible to reach this additional target at the end of the 5-year period and progressively in every year of the 5-year period. The estimates given in the preceding paragraphs do not take into account the increased production due to improvements which may be effected by cultivators themselves owing to increased facilities available and also expansion of education, better provision of agricultural credit, etc. Against this, there are certain difficulties which will hamper the execution of some of the schemes. The difficulties may be dealt with under three categories—economic, technical and psychological.

(1) *Economic difficulties:—*

The chief difficulty which is likely to become a very important problem is the increasing scarcity of agricultural labour. Orissa is a developing

province and already several schemes for the industrial development and expansion of the province are under execution. Secondly big multi-purpose projects for the development of river valleys have been undertaken, namely, Mahanadi valley project and the Duduma Hydro Electric project. The demand for labour for all these schemes is creating scarcity of rural agricultural labour and wages have also shown a definite tendency to increase rather disproportionately. A detailed statistical survey of rise in the wages of agricultural labour is under contemplation and very soon we will be in a position to present a more accurate picture of the rise in the wages of agricultural labour.

The second economic difficulty which is of considerable importance is the price level of manures and fertilisers. Orissa is deficit in respect of oilseeds and therefore the production of oilcake which is a very important manure for the paddy crop is insufficient to meet her internal requirement. Consequently large quantities of the manure are being purchased from outside at a rate which is about Rs. 17/- per bag. Although at present under the G.M.F. scheme a subsidy of 50 per cent is allotted to the cultivators, the price is not economic for manuring paddy crops. In fact, the increased production of paddy by the application of about 2 bags of manure in an acre of land may be taken approximately as six maunds of paddy. The cost of six maunds of paddy at prevailing rates is just equal to the cost of two bags of oilcake. Obviously therefore the price factor does not offer sufficient inducement to the cultivators to apply the manure for increasing food production.

The third factor which severely handicaps efficient cultivation is the general low standard of the economic condition of the cultivators in Orissa. A vast majority of them are extremely poor and own small fragments of land. More than 60 per cent of the cultivators possess less than 5 acres of land each. Consequently the cultivators do not find it economically feasible to undertake paddy cultivation on a commercial basis.

The fourth difficulty is the low price of rice and paddy which is the principal crop grown in Orissa. Actually till last year, the price of rice and paddy in Orissa was perhaps the lowest in the whole of India. Since last year, however, the price has been slightly enhanced and even so, the price is fairly low in comparison with the prices of other agricultural commodities. Prices of agricultural commodities in general are so low compared to prices of industrial products in general that the price factor does not offer sufficient incentive to increases in agricultural production. The index of parity in the prices received and prices paid by the cultivators is continuously decreasing which indicates the general deterioration of the economic condition of the cultivators.

(2) *Technical difficulties:—*

The per acre yield of food-grains in Orissa is extremely low. This is largely due to the fact that scientific and technological advancements in agriculture have not reached the average cultivator, who still practices his primitive methods of cultivation. Principles of soil management and conservation, methods of plant breeding and control of insect pests and diseases are not easily understood by the average cultivator and secondly there is also difficulty in the wide-spread application of these improved methods and agronomic practices because of paucity of machinery, implements, fertilisers and trained personnel. Tractors and pumps are extremely scarce. Fertilisers are difficult to get and there is also paucity of trained technical personnel to operate farm machinery. It is difficult now even to meet the limited demand for modern scientific appliances and materials from the few well-to-do cultivators who want to practice agriculture under modern methods. There is also considerable dearth of iron and steel, cement, coal for burning bricks etc., and transport facilities are still inadequate.

(3) *Psychological difficulties:—*

Agriculture is not being practised as a means to earn a living, but as a way of life. Secondly, the average cultivator generally considers the methods and practices handed down to him from his fore-fathers as something which he should not alter. The average cultivator is generally prone to view with suspicion advanced agronomic practices demonstrated by the staff of the Government Agricultural Departments. This is largely due to the ignorance and poverty of the cultivators. The spread of education and mass literacy is likely to over-come many of these prejudices of the ordinary cultivators. This psychological difficulty is only of a temporary nature and can easily be over-come with better publicity and propaganda by the Agricultural Departments and by the initiation of agricultural extension services.

The incentive to agricultural production is considerably influenced by the system of land tenure. In Orissa at present we have a very large medley of systems of land tenure inherited from different provinces. It is true that the ownership of land and the nature of rights between the various parties connected with the land are the result of a long evolution of economic and social and political conditions and some of the interests are directly the by-products of the effects of the British Administration to fix the responsibility of payment of land revenue. Until the difficulties created by the existing systems of land tenure are removed, it would not be feasible for the State to initiate measures for improving the technique and methods in agriculture through the elimination of petty farms, encouragement of collective or co-operative farming, mechanisation of agriculture, application of

scientific methods of farming etc., in order to bring agricultural production in the Province on a line with that of other advanced countries.

*Mobilisation of local resources:*

A vigorous all-out programme for the economic development of the Province has already been initiated and several large schemes have been undertaken particularly relating to the development of agriculture and industries. Floods are a recurring calamity of the agriculturists in a major part of the Province and therefore the control of floods and the harnessing of the water wealth of the mighty rivers for developing irrigation has naturally been accorded the highest priority in the development plans of the Province. The Mahanadi valley multi-purpose development scheme has just been taken up and within the next 5-years when the scheme is executed, floods would be completely and effectively controlled. Incidentally, the scheme would also provide 4 million K.W. of power, a major part of which would be available for rural areas. The Mahanadhi waters when fully harnessed will provide complete flood protection in the deltaic districts, will irrigate over 20 million acres of land in the new expended Orissa province and will provide numerous other facilities. This scheme, more than anything else, holds out the highest hopes for increasing the prosperity of the Province and for improving in particular agricultural production.

There are vast tracts of current fallow land in the Province. With the merger of the States more such areas have been added. A detailed statement giving the total area and the cultivable area, the area lying fallow, which can be reclaimed in all the districts of the province, including the merger States areas is given in appendix V. The cultivable waste lands in the new Province comes to more than 5 million acres. This also does not include large areas in some of the States which are estimated to be nearly 2 million acres and which can be reclaimed without much difficulty. As the State lands have not been fully surveyed, it is difficult to estimate the potentialities for increasing the area under cultivation. However, at a very conservative estimate, more than 5 lakhs of acres can easily be brought under cultivation during the next 5 years. Already a scheme for the reclamation of waste lands through Government Agency has been undertaken in Sukinda and the scheme is in progress and another larger scheme which is being initiated by the Government of India is under consideration.

Another important direction in which local resources are being mobilised for the increased production of food is through the media of co-operative institutions. It is fully recognised that for popularising the schemes initiated under the G.M.F. campaign and for the introduction of scientific agricultural practices, the only effective course would be through the co-operative societies. The Co-operative Department in the Province has been

greatly strengthened. The planned expansion of the co-operative movement in the Province includes the establishmnt of a Provincial Co-operative Bank which was recently opened. This bank will, apart from acting as an Apex Bank and a balancing centre of the Co-operative Movement in Orissa, discharge the functions of an Agricultural Credit Corporation in providing extended facilities for agricultural finance. It is a truism to say that the poverty of the agriculturist is the root cause of the decadence of our agriculture. The recent rise of agricultural prices during and after the War has perhaps not contributed to decrease of rural indebtedness appreciably. Hence agricultural production can be improved only by improving the facilities for providing cheap credit to the poor agriculturists. With this in view, the co-operative machinery is being organised to provide cheap rural credit and co-operative societies are also being used to serve as links between the Agricultural Department and the cultivators. The execution of G.M.F. schemes are thus expected to be greatly facilitated owing to the increasing interests taken by non-official organizations. The number of Agricultural Co-operative Societies is being increased and they are being utilised to the maximum extent for purposes of food production.

*Suggestions for re-organising the Grow More Food plans.*

It is indeed tragic that in India where 4 out of every 5 persons of the population are engaged in the pursuit of agriculture, the production of food-stuffs should be insufficient even to meet the minimum requirements of the population. In view of the heavy imports of food-grains which have become necessary and which indirectly amount to subsidising the cultivators of other countries in the world, it is imperative that our agricultlural production should be considerably increased to provide a balanced nutritive diet to the people. It is to be clearly recognised that the Grow More Food Campaign is essentially a short term plan designed to secure the maximum production within the shortest time possible and within the limits permitted by the available local resources. The execution of the programme with its limited objectives has been on the whole quite satisfactory at least in Orissa. Nevertheless, it is to be admitted that the G.M.F. schemes which are in operation at present will not solve the problem of increasing agricultural food production on a permanent basis. Various long term and short term measures would be necessary if we are to increase the level of our per acre aricultural production to the extent of even Eastern countries like China and Japan. In order to formulate any comprehensive programme for increasing both the per capita and per acre agricultural production in the country, we have to carefully analyse the existing handicaps under which the cultivators are suffering. Briefly, the causes for the low level of agricultural production may be enumerated as follows:—

(i) The gradual deterioration of soil fertility due to continuous

cropping without undertaking measures for conservation of soil fertility;

(ii) Inadequacy of facilities for irrigation;

(iii) Pursuit of primitive agronomic practices;

(iv) Absence of scientific methods of crop rotation, plant breeding, etc;

(v) Lack of improved seeds;

(vi) Inadequacy of measures to control crop pests and diseases;

(vii) Poor live-stock and equipment;

(viii) Wastage of essential materials which can be converted into manures and fertilisers;

(ix) Poverty of the cultivator which severely handicaps him in the application of improved scientific methods of commercialised farming;

(x) Fragmentation and subdivision of holdings which makes farming uneconomic;

(xi) A complex system of land tenure under which the tiller of the soil is not the actual owner of land;

(xii) Instability of agricultural prices;

(xiii) Absence of facilities for marketing of agricultural produce;

(xiv) Absence of any planned system of land utilisation.

To overcome these draw-backs and handicaps of the average cultivator, the Central and the Provincial Governments will have to initiate an all out and vigorous drive to introduce several long term and short term measures. Those which require long term measures may be stated briefly as follows:—

(i) Land utilisation and conservation;

(ii) Provision of adequate agricultural finance;

(iii) Consolidation of holdings;

(iv) Reform of the land tenure system;

(v) Increase of irrigation facilities;

(vi) Stabilisation of agricultural prices;

(vii) Industrialisation to remove the existing demographic pressure on agriculture and to increase the per capita income of the agriculturist.

(viii) Spread of agricultural education.

The short term measures some of which are being undertaken under

the G.M.F. campaign which require to be intensified are briefly the following:—

(1) Encouragement of production and use of all forms of manures from organic wastes;

(2) Production and distribution of inorganic fertilisers and organic manures;

(3) Establishment of improved seed farms and seed stores for supply of good and viable seeds to cultivators;

(4) Supply of improved types of agricultural implements and machinery;

(5) Improvement of farm live-stock;

(6) Reclamation of cultlivable waste lands;

(7) Encouragement of crop rotations and scientific agronomic practices.

The measures briefly indicated above have to be organised on a wide and intensified scale. It is not possible in this brief note to discuss details of the various schemes. The chief work which Governments in India can undertake is the extension of agricultural knowledge and technique amongst the cultivators. Certain improvements are possible by the enactment of necessary legislation, but to a very large extent improvement of the level of agricultural production would depend entirely on the initiative and practices followed by the cultivators in general. Particularly, during the present century, agricultural science has made considerable contribution towards the furtherance of increased, improved and more efficient agricultural production. If the existing knowledge made available by the Soil Scientist, Plant Breeder, the Entomologist, Mycologist, workers in nutrition, genetics and veterinary science, the Engineer, the Farm Economist and all others is put into universal practice, there would be an enormous and immediate rise in production. Hence, the basic problem confronting agriculture not merely in Orissa, but in the whole of India to-day is not so much the acquisition of new scientific knowledge as the application of existing knowledge on a wide scale. This does not imply that we should cry a halt to further agricultural research, but along with it more intensified and extensive methods have to be adopted for the wider diffusion of the findings of the research workers in their laboratories or on the farms attached to research institutions and agricultural colleges. It is no doubt true that even in the most highly organised countries much of the knowledge of the scientist has yet to be put into practice by a considerable proportion of farmers. But most of the other countries, particularly U.S.A., have an organised system for undertaking the work of the extension services. The immediate need therefore in Orissa and perhaps in the whole of India to-day is the inauguration of agricultural extension work, preferably through the organisation of non-official bodies. It is proposed to organise

and establish very soon such an organisation in Orissa. This would need a considerable increase in the existing personnel connected with the development of agriculture and will also mean considerably more expenditure by the Central and Provincial Governments. The extent of the provincial expenditure on agriculture in Orissa per head of population is a little above a rupee at present and the amount spent by the Central Government on Agriculture is only about one anna per person as was recently pointed out by the Hon'ble Sri Jairam Das Daulatram, Minister of Agriculture in the recent Conference of Agricultural Ministers at Delhi. The amount spent by U.S.A., on their Department of Agriculture works out nearly at Rs. 80/- per head of population. The amount spent in India for the development of agriculture appears insignificant in comparison with countries in the West. Hence, there is immediate need for extending the organisation of the agricultural departments and for providing suitable agricultural extension services for the wider diffusion and teaching of scientific agriculture to the cultivators. There are numerous other difficulties and bottle-necks which have to be removed by suitable administrative action, but some of the economic difficulties which have already been referred to in a preceding paragraph are beyond the control of the Provincial Governments. Measures to stabilise agricultural prices, to control facilities for agricultural finance, etc., shall have to be taken through co-ordinated action between the Central and Provincial Governments if we are to improve the level of agricultural production in the country. The Agricultural Departments in the province and under the Centre should also be organised on a permanent basis similar to the other Departments connected with either Revenue or for maintenance of Law and Order. In fact, the present national Government has already declared as a part of its Food and Agricultural policy that the feeding of the teeming millions of the people in India, who are at present under-fed, would be the sole and primary responsibility of the Government. This re-orientation in the policy of Government is a great land mark in the economic history of the country and it is hoped that very soon, a planned programme of long term and short term measures will be initiated on a permanent basis for improving the level of agricultural production in India. The vital problem of making the country self-sufficient in food demands the highest priority in our national efforts. But the successful execution of the planned programme through the co-ordinated and concerted action of the Central and Provincial Governments, would depend to a considerable extent on the willing co-operation of the actual cultivators.

## APPENDIX I.

*Statement showing the area in acres of different crops in Orissa.*

| Name of crop | 1939-40 | 1942-43 | 1943-44 | 1944-45 | 1945-46 | 1946-47 | 1947-48* |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Rice .. .. .. | 50,82,875 | 49,69,259 | 50,31,471 | 51,73,119 | 54,59,477 | 54,03,561 | 53,98,078 |
| Wheat .. .. .. | 3,949 | 4,005 | 6,499 | 6,666 | 6,650 | 6,378 | 6,256 |
| Barley .. .. .. | 100 | 360 | 4,240 | 1,900 | 840 | 960 | 960 |
| Jowar .. .. .. | 44,081 | 37,637 | 36,742 | 39,929 | 39,310 | 38,330 | 38,619 |
| Bajra .. .. .. | 6,032 | 4,799 | 5,085 | 4,819 | 4,648 | 4,487 | 4,460 |
| Maize .. .. .. | 31,760 | 39,410 | 28,906 | 28,276 | 29,765 | 26,959 | 25,012 |
| Gram .. .. .. | 8,668 | 17,472 | 4,964 | 5,455 | 5,886 | 1,68,618 | 1,29,864 |
| Ragi .. .. .. | 2,96,366 | 2,54,732 | 2,83,810 | 2,01,994 | 3,55,834 | 2,67,715 | 2,70,790 |
| Pulses .. .. .. | 6,90,788 | 6,93,644 | 7,48,569 | 7,22,594 | 6,57,491 | 8,39,918 | 8,79,475 |
| Total—Food Grains & pulses .. | 61,64,619 | 60,21,318 | 61,50,286 | 61,84,752 | 65,59,901 | 67,56,926 | 67,53,514 |
| Linseed .. .. .. | 7,082 | 5,605 | 5,921 | 6,216 | 9,913 | 8,990 | 5,684 |
| Til .. .. .. | 1,07,611 | 1,10,536 | 1,08,033 | 1,04,727 | 1,11,310 | 86,997 | 83,276 |
| Rape & Mustard .. | 29,371 | 26,441 | 28,549 | 29,494 | 29,587 | 25,188 | 23,028 |
| Groundnut .. .. | 23,863 | 13,019 | 13,613 | 18,102 | 19,885 | 23,447 | 31,733 |
| Castor .. .. .. | 21,118 | 19,230 | 21,379 | 21,354 | 21,709 | 24,779 | 22,866 |
| Total—Oilseeds .. | 1,89,045 | 1,74,831 | 1,77,495 | 1,79,893 | 1,92,404 | 1,69,401 | 1,66,587 |
| Tobacco .. .. | 31,992 | 99,830 | 30,999 | 32,709 | 32,197 | 31,360 | 30,775 |
| Sugarcane .. .. | 32,702 | 31,403 | 31,634 | 36,103 | 36,171 | 31,423 | 33,143 |
| Cotton .. .. .. | 8,359 | 8,805 | 10,181 | 2,972 | 9,948 | 8,920 | 8,923 |
| Jute .. .. .. | 22,454 | 23,505 | 25,230 | 23,905 | 19,590 | 23,955 | 22,239 |
| Total—Non-food crops.. | 95,507 | 1,63,543 | 98,044 | 95,689 | 97,906 | 95,658 | 95,080 |

* Some of these figures for 1947-48 are not accurate as they are based on the intermediary forecast reports.

## APPENDIX II.

*Statement showing the yield in tons of different crops in Orissa.*

| Name of crop | 1939-40 | 1942-43 | 1943-44 | 1944-45 | 1945-46 | 1946-47 | 1947-48* |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Rice .. .. .. | 13,96,679 | 12,53,795 | 11,88,113 | 13,63,701 | 13,18,053 | 14,49,743 | 13,16,737 |
| Wheat .. .. .. | 1,343 | 1,574 | 1,989 | 2,148 | 2,114 | 2,022 | 1,988 |
| Barley .. .. .. | 33 | 33 | 1,300 | 563 | 166 | 284 | 284 |
| Jowar .. .. .. | 13,774 | 9,472 | 8,424 | 8,434 | 8,339 | 8,333 | 7,321 |
| Bajra .. .. .. | 1,858 | 1,257 | 820 | 840 | 787 | 863 | 769 |
| Maize .. .. .. | 7,852 | 8,307 | 8,816 | 6,318 | 6,655 | 5,980 | 5,722 |
| Gram .. .. .. | 2,727 | 9,843 | 1,601 | 1,687 | 9,902 | 10,009 | 16,659 |
| Ragi .. .. .. | 88,279 | 61,880 | 1,06,646 | 60,006 | 60,216 | 60,580 | 58,627 |
| Pulses .. .. .. | 1,16,300 | 92,182 | 1,30,386 | 1,64,060 | 1,18,957 | 1,58,929 | 1,40,086 |
| Total yield of Food-Grains .. .. | 16,28,845 | 14,38,343 | 14,48,095 | 16,07,757 | 15,25,189 | 16,96,743 | 15,48,193 |
| Linseed .. .. .. | 1,204 | 708 | 646 | 743 | 1,009 | 971 | 703 |
| Til .. .. .. | 14,091 | 15,262 | 13,524 | 13,015 | 13,038 | 9,213 | 9,646 |
| Rape & Mustard .. | 5,752 | 4,891 | 5,464 | 5,523 | 6,017 | 3,989 | 4,406 |
| Groundnut .. .. | 7,371 | 7,074 | 6,564 | 6,952 | 6,588 | 8,660 | 12,986 |
| Castor .. .. .. | 1,000 | 1,975 | 2,554 | 2,335 | 2,281 | 2,393 | 2,166 |
| Total Yield of Oilseeds.. | 29,418 | 29,910 | 28,752 | 28,568 | 28,933 | 25,226 | 29,907 |
| Tobacco .. .. | 10,315 | 9,995 | 10,482 | 10,812 | 10,164 | 9,915 | 9,646 |
| Sugarcane .. .. | 63,980 | 83,916 | 70,045 | 51,849 | 68,264 | 61,082 | 2,28,888 |
| Cotton .. .. .. | 1,100 | 1,075 | 1,150 | 1,144 | 1,151 | 1,081 | 1,055 |
| Jute .. .. .. | 47,325 | 55,073 | 66,447 | 50,200 | 42,814 | 57,021 | 8,167 |
| Total yield of Non-food crops .. | 1,22,720 | 1,50,059 | 1,48,124 | 1,14,005 | 1,22,393 | 1,29,099 | 2,47,156 |

* Some of the figures for 1947-48 are not accurate as these are based on intermediary forecast reports.

## APPENDIX III.

*Statement showing the expenditure under Grow More Food Schemes from 1944-45- to 1946-47*

| | 1944-45 | 1945-46 | 1946-47 |
|---|---|---|---|
| | Rs. | Rs. | Rs. |
| Amount advanced for reclamation .. .. | 6,53,775 | 10,05,450 | 9,95,719 |
| Amount advanced for land improvement .. | .... | .... | .... |
| Amount advanced for new tanks .. .. | 2,97,890 | 5,07,200 | 1,00,000 |
| Amount advanced for old tanks .. .. | 1,19,349 | 2,08,000 | 1,96,200 |
| Amount advanced for wells .. .. .. | 2,01,516 | 1,99,900 | 1,00,000 |
| Amount advanced for other minor irrigation works .. .. .. .. .. | .... | .... | 10,663 |
| Amount advanced for ploughs and bullocks | 2,10,516 | 3,18,270 | 3,60,000 |
| Amount spent for monkey killing (including rewards granted for killing10 wild animals).. | 26,378 | 29,317 | 83,948 |

| | Tons | Tons | Tons |
|---|---|---|---|
| Quantity of kharif seeds distributed .. .. | 2,509 | .... | .... |
| Quantity of rabi seeds distributed .. .. | 636 | .... | .... |
| Quantity of maize, millets and ragi distributed | .... | 200 | 141 |
| Quantity of pulses distributed .. .. | .... | 1,197 | 708 |
| Quantity of oilseeds distributed .. .. | .... | .... | 44 |
| Quantity of nucleus paddy seeds distributed | .... | .... | .... |
| Quantity of improved paddy seeds distributed | .... | 2,892 | 1,937 |
| Quantity of Beali paddy seeds distributed .. | .... | 1,068 | 722 |
| Quantity of L. R. paddy seeds distributed .. | .... | .... | .... |
| Quantity of paddy seeds distributed in the areas affected by flood, drought etc. .. | .... | .... | .... |
| Quantity of improved seeds (wheat, maize, groundnut, gram) distributed .. .. | .... | .... | .... |
| Quantity of green manure seeds distributed | 95 | 67 | 60 |
| Quantity of oilcakes distributed .. .. | 1,385 | 933 | 1,000 |
| Quantity of wheat seeds distributed .. .. | .... | 31 | 30 |
| Quantity of ammonium sulphate distributed | 100 | 1,743 | 1,385 |
| Quantity of bone-meals distributed .. .. | .... | .... | .... |
| Quantity of compost manures distributed .. | .... | 886 | 14,944 |
| Groundnut, other millets and jowar .. | .... | 106 | .... |
| | Rs. | Rs. | Rs. |
| Amount spent for vegetables .. .. | .... | 46,619 | 30,440 |

## APPENDIX IV.

*Five-year Grow More Food Plan for Orissa from 1947-48 to 1951-52.*

| Sl. No. | Subject of the Scheme | Estimated target of additional production of paddy as a result of the Scheme for different years of the five-years period. | | | | | | Estimated cost of the Scheme for different year of the five-years period. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1947-48 | 1948-49 | 1949-50 | 1950-51 | 1951-52 | Total | 1947-48 | 1948-49 | 1949-50 | 1950-51 | 1951-52 | Total |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| | | Mds. | Mds. | Mds. | Mds. | Mds. | Mds. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| | *Land Improvement Works:* | | | | | | | | | | | | |
| 1. | Reclamation of waste lands through Government Agency. | .... | .... | 50,000 | 70,000 | 90,000 | 2,10,000 | .... | 19,83,715 | 2,20,247 | .... | .... | 22,03,962 |
| 2. | Reclamation by private individuals .. .. .. | .... | 20,000 | 38,000 | 60,000 | 90,000 | 2,08,000 | 2,40,000 | 2,40,000 | 2,40,000 | 2,40,000 | 2,40,000 | 12,00,000 |
| 3. | Other land improvement works (improvement of existing cultivated land) by private parties. .. .. .. | .... | 40,000 | 60,000 | 80,000 | 1,00,000 | 2,80,000 | 10,00,000 | 10,00,000 | 10,00,000 | 10,00,000 | 10,00,000 | 50,00,000 |
| 4. | Drainage of land .. .. | .... | 20,000 | 48,000 | 84,000 | 1,32,000 | 2,84,000 | .... | 4,80,000 | 4,80,000 | 4,80,000 | 4,80,000 | 19,20,000 |
| 5. | Construction of flood & saline embankments .. .. | .... | 33,750 | 67,500 | 1,01,250 | 1,35,000 | 3,37,500 | .... | 8,13,655 | 8,10,000 | 8,10,000 | 8,10,000 | 32,43,655 |
| | *Minor Irrigation Works:* | | | | | | | | | | | | |
| 6. | Exploratory Tube-wells Scheme .. .. .. | ..... | .... | 6,000 | 12,000 | 12,000 | 30,000 | 1,50,000 | 1,25,000 | 1,25,000 | .... | .... | 2,50,000 |
| 7. | Establishment of Nursery Project .. .. .. | .... | .... | .... | Scheme held in abeyance | | | .... | .... | .... | .... | .... | .... |
| 8. | River pumping installation | .... | 1,000 | 2,000 | .... | .... | 3,000 | 60,000 | 72,000 | 24,000 | .... | .... | 1,56,000(*a*) |
| 9. | Barge Irrigation .. .. | .... | 500 | .... | .... | .... | 500 | 22,600 | 11,236 | .... | .... | .... | 33,836(*g*) |
| 10. | Renovation of Government Tanks .... .. .. .. | .... | 2,400 | 4,800 | 7,200 | 9,600 | 24,000 | .... | 1,96,595 | 1,92,637 | 1,92,919 | 1,93,201 | 7,75,352 |
| 11. | Installations of irrigation tube-wells by private parties | .... | .... | .... | Scheme held in abeyance | | | .... | .... | .... | .... | .... | .... |
| 12. | Sinking of pucca wells .. | .... | 6,000 | 9,000 | 12,000 | 15,000 | 42,000 | 3,00,000 | 3,00,000 | 3,00,000 | 3,00,000 | 3,00,000 | 15,00,000 |
| 13. | Minor private Irrigation works .. .. .. | .... | 32,000 | 52,000 | 72,000 | 92,000 | 2,48,000 | 7,55,000 | 12,00,000 | 12,00,000 | 12,00,000 | 12,00,000 | 55,55,000 |
| 14. | Sinking of small wells in areas where sinking of pucca wells is not possible .. .. | .... | .... | .... | Information is being collected | | | .... | .... | .... | .... | .... | .... |

APPENDIX IV.—(*Contd.*)

| Sl. No. | Subject of the Scheme | Estimated target of additional production of paddy as a result of the Scheme for different years of the five-years period. | | | | | | Estimated cost of the Scheme for different year of the five-years period. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1947-48 | 1948-49 | 1949-50 | 1950-51 | 1951-52 | Total | 1947-48 | 1948-49 | 1949-50 | 1950-51 | 1951-52 | Total |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| | | Mds. | Mds. | Mds. | Mds. | Mds. | Mds. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| | *Multiplication and distribution of improved paddy seeds:* | | | | | | | | | | | | |
| 15. | Maintenance of existing and establishment of new farms.. | .... | .... | .... | .... | .... | .... | 2,06,452 | 7,90,575 | 4,01,323 | 2,56,109 | 2,58,077 | 19,12,536 |
| 16. | Multiplication of seeds through Growers .. .. | 3,500 | 38,500 | 50,380 | 1,71,340 | 1,92,940 | 4,56,660 | 84,576 | 2,70,532 | 4,47,503 | 14,98,499 | 15,29,362 | 38,30,472 |
| 17. | General distribution of improved paddy seeds .. | 40,000 | 40,000 | 3,50,000 | 3,50,000 | 15,38,000 | 23,18,000 | 2,40,000 | 11,77,810 | 29,57,800 | 29,57,500 | 1,29,96,100 | 2,03,28,910 |
| | *Distribution of manure:* | | | | | | | | | | | | |
| 18. | Distribution of green manuring seeds. .. .. .. | .... | .... | .... | .... | .... | .... | 68,750 | 1,41,250 | 1,77,500 | 2,12,500 | 2,47,500 | 8,47,500 |
| 19. | Distribution of Amm. sulphate .. .. | 2,43,000 | 3,24,000 | 4,,32,000 | 5,67,000 | 6,21,000 | 21,87,000 | 17,10,000 | 22,80,000 | 29,92,500 | 38,47,500 | 42,75,000 | 1,51,05,000 |
| 20. | Distribution of Oilcake | | | | | | | 9,00,000 | 18,60,000 | 27,00,000 | 34,00,000 | 40,00,000 | 1,28,60,000 |
| 21. | Distribution of Bonemeal .. | 5,400 | 6,750 | 8,100 | 8,450 | 10,800 | 40,500 | 30,000 | 50,000 | 60,000 | 70,000 | 80,000 | 2,90,000 |
| 22. | Production & distribution of compost manure .. .. | .... | .... | .... | .... | .... | .... | 1,11,255 | 1,34,342 | 1,47,174 | 1,60,042 | 1,72,874 | 6,14,432 |
| 23. | Establishment of a green manure seed farm .. .. | .... | .... | .... | .... | .... | .... | .... | Estimates are being prepared. | | | | |
| | *Prevention of decrease of food crops otherwise imminent:* | | | | | | | | | | | | |
| 24. | Distribution of paddy seeds in reclaimed areas and in areas where seeds are actually required .. .. .. | .... | .... | .... | .... | .... | .... | 75,000 | Dropped from the year 1948-49 | | | .... | 75,000 |
| 25. | Reservation of paddy seeds for distribution in case of natural calamities.. .. | .... | .... | .... | .... | .... | .... | 75,000 | 59,000 | 53,900 | 53,900 | 53,900 | 2,90,600 |
| 26. | Raising of paddy seedlings for flooded areas .. .. .. | .... | .... | .... | .... | .... | .... | 1,500 | Dropped from the year 1948-49 | | | | 1,500 |
| 27. | Purchase of ploughs & bullocks .. .. .. .. | .... | .... | .... | .... | .... | .... | 5,00,000 | 5,00,000 | 5,00,000 | 5,00,000 | 5,00,000 | 20,00,000 |
| | *Pest Control Measure:* | | | | | | | | | | | | |
| 28. | Monkey killing .. .. | .... | .... | .... | .... | .... | .... | 2,20,500 | 2,20,500 | 2,20,500 | 2,20,500 | 2,20,500 | 11,02,500 |
| 29. | Control of crop & store pests | .... | .... | .... | .... | .... | .... | 37,018 | 1,56,095 | 1,88,140 | 2,21,164 | 2,33,688 | 8,36,085 |
| | *Increased production of food crops in which the Province is deficit:* | | | | | | | | | | | | |
| 30. | Establishment of a Vegetable Seeds farm .. .. .. | .... | .... | .... | .... | .... | .... | 11,377 | 8,340 | 8,443 | 8,584 | 8,610 | 45,354 |
| 31. | Distribution of Vegetable seeds & seeds potatoes .. | .... | .... | .... | .... | .... | .... | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 2,50,000 |

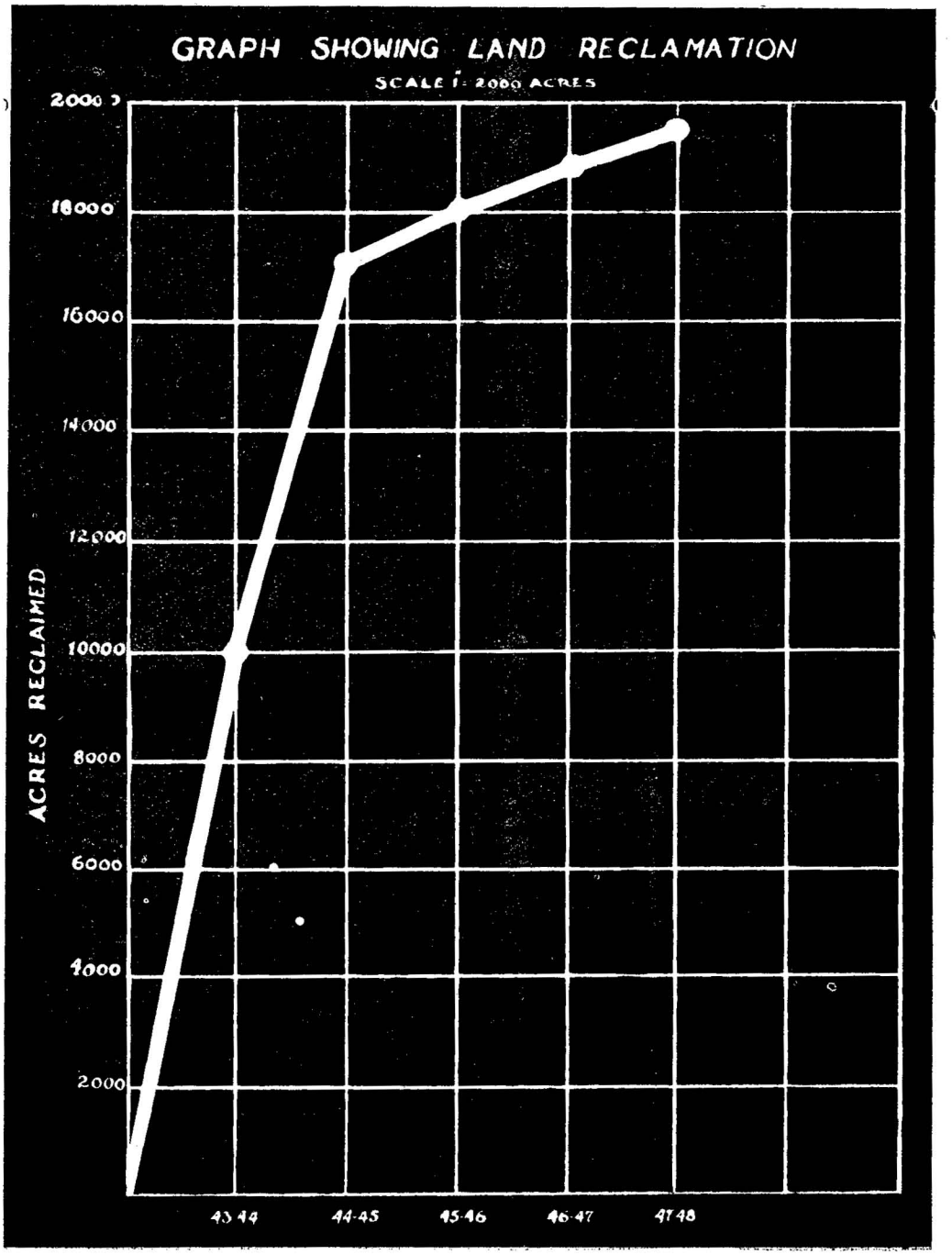
APPENDIX IV.—(*Contd.*)

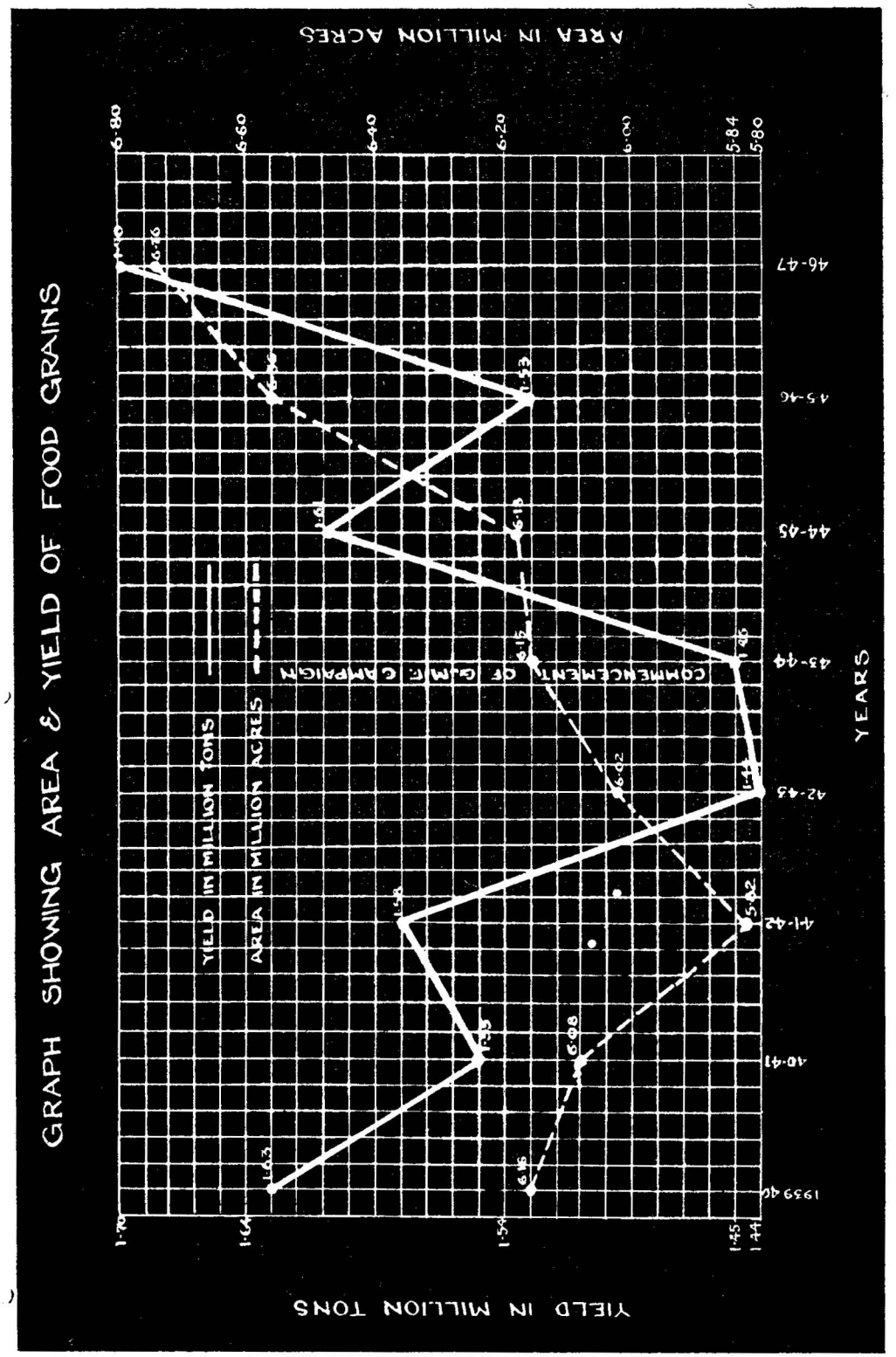
| Sl. No. | Subject of the Scheme | Estimated target of additional production of paddy as a result of the Scheme for different years of the five-years period. | | | | | | Estimated cost of the Scheme for different year of the five-years period. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1947-48 | 1948-49 | 1949-50 | 1950-51 | 1951-52 | Total | 1947-48 | 1948-49 | 1959-50 | 1950-51 | 1951-52 | Total |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| | | Mds. | Mds. | Mds. | Mds. | Mds. | Mds. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| 32. | Production of Summer & Monsoon potatoes for seeds and table purposes .. .. | .... | .... | .... | .... | .... | .... | .... | 45,577 | .... | .... | .... | 45,577 |
| 33. | Establishment of Demonstration Vegetable gardens .. | .... | .... | .... | .... | .... | .... | .... | 25,890 | 25,890 | 25,890 | 25,890 | 1,03,560 |
| 34. | Increased production by distribution of improved seeds | .... | .... | .... | .... | .... | .... | 7,500 | 7,500 | 7,500 | 7,500 | 7,500 | 37,500 |
| 35. | Distribution of pulses seeds | .... | .... | .... | .... | .... | .... | 1,00,000 | 1,00,000 | 1,00,000 | 1,00,000 | 1,00,000 | 5,00,000 |
| | *Supply of Agricultural implements & Irrigation appliances* | | | | | | | | | | | | |
| 36. | Tractor ploughing for private parties .. .. .. | .... | .... | .... | .... | .... | .... | 2,36,769 | 1,98,493 | 49,065 | 49,641 | 50,215 | 5,84,183 |
| 37. | Hiring of Agricultural implements .. .. .. | .... | .... | .... | .... | .... | .... | 2,02,000 | 1.15,000 | 1,20,000 | 1,30,000 | 1,40,000 | 7,07,000 |
| 38. | Supply of Agricultural implements & Irrigation appliances | .... | .... | .... | .... | .... | .... | 2,05,000 | 2,05,000 | 2,05,000 | 2,05,000 | 2,05,000 | 10,25,000 |
| 39. | Loans for the purchase of tractors by private parties .. | .... | .... | .... | .... | | **Details being worked out.** | | | | | | |
| 40. | Demonstration of Persian Wheels .. .. .. | .... | .... | .. | .... | .... | .... | 9,340 | 4,840 | 4,840 | 4,840 | 4,840 | 28,700 |
| 41. | Maintenance of trucks for movements of seeds and manures .. .. .. | .... | .... | .... | .... | .... | .... | 34,072 | 40,316 | 28,316 | 28,316 | 28,316 | 1,59,336 |
| 42. | Survey of cultural waste lands | .... | .... | .... | .... | .... | .... | .... | 13,988 | .... | .... | .... | 13,988 |
| 43. | Publicity & propaganda .. | .... | .... | .... | .... | .... | .... | .... | 1,59,524 | 1,37,713 | 1,37,902 | 1,38,067 | 5,71,206 |
| 44. | Staff & Organisation.. .. | .... | .... | .... | .... | .... | .... | 9,84,696 | 17,83,573 | 18,28,844 | 18,50,839 | 18,96,795 | 83,44,747 |
| | *Training of Staff*: | | | | | | | | | | | | |
| 45. | Training of Agricultural College .. .. .. | .... | .... | .... | .... | ..... | .... | 26,000 | 56,000 | 86,000 | 1,16,000 | 1,16,000 | 4,00,000 |
| 46. | Training of Sub-Overseers & Fieldmen Demonstrators .. | .... | .... | .... | .... | .... | .... | 50,000 | 60,000 | 61,000 | 63,000 | 63,000 | 3,22,000 |
| 47. | Training of candidates in tractor ploughing .. .. | .... | .... | .... | ..... | .... | .... | .... | 5,870 | .... | .... | .... | 5,870 |
| | *Miscellaneous* : | | | | | | | | | | | | |
| 48. | Supply of cement to cultivators .. .. .. .. | .... | .... | .... | .... | .... | .... | .... | 70,000 | .... | .... | ..... | 70,000 |
| | **Total** .. | 2,91,900 | 5,61,900 | 11,77,780 | 15,96,240 | 30,38,340 | 66,69,160 | 87,04,405 | 4,70,07,116 | 1,81,48,535 | 2,03,98,145 | 3,16,24,435 | 9,51,46,381 |

## APPENDIX V.

*Statement showing the total area of land in Orissa Province including merger States*

| District | Total area | Total Forest area | Total area under cultivation | Total area unfit for cutivation | Total cultivable waste-land |
|---|---|---|---|---|---|
| | Acs. | Acs. | Acs. | Acs. | Acs. |
| Cuttack .. .. | 36,18,237 | 26,65,120 | 12,82,412 | 28,90,152 | 7,93,151 |
| Balasore .. .. | 15,16,160 | 1,05,658 | 10,53,268 | 1,92,805 | 1,64,429 |
| Puri .. .. | 33,72,840 | 6,53,998 | 9,58,610 | 4,28,677 | 3,35,855 |
| Sambalpur .. .. | 33,02,989 | 7,92,072 | 15,37,105 | 2,25,027 | 6,85,527 |
| Ganjam .. .. | 55,96,421 | 7,98,725 | 11,33,651 | 28,14,048 | 8,49,995 |
| Koraput .. .. | 63,92,530 | 6,78,625 | 14,19,370 | 25,35,784 | 17,58,751 |
| Dhenkanal .. .. | 22,30,974 | 10,77,350 | 5,82,481 | 1,11,267 | 2,15,966 |
| Gangpur .. .. | 24,33,558 | 13,25,034 | 7,34,849 | 1,39,480 | 2,34,195 |
| Keonjhar .. .. | 8,98,288 | 1,74,832 | 5,08,725 | 1,74,832 | .... |
| Bolangir-Phulbani .. | 19,76,161 | 5,89,898 | 12,09,111 | 13,390 | 1,53,762 |
| Total .. | 3,13,30,000 | 68,55,000 | 1,04,00,000 | 75,75,000 | 52,00,000 |


GRAPH SHOWING LAND RECLAMATION
SCALE 1: 2000 ACRES
ACRES RECLAIMED
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
43-44
44-45
45-46
46-47
47-48


GRAPH SHOWING AREA & YIELD OF FOOD GRAINS
YIELD IN MILLION TONS
AREA IN MILLION ACRES
YEARS
COMMENCEMENT OF GIME CAMPAIGN
YIELD IN MILLION TONS
AREA IN MILLION ACRES
1939-40
40-41
41-42
42-43
43-44
44-45
45-46
46-47
1·70
1·64
1·59
1·45
1·44
6·80
6·60
6·40
6·20
6·00
5·84
5·80

# GROW MORE FOOD CAMPAIGN IN MADRAS.

*by*

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*Present Food Position*

The Province of Madras has for long been deficit in food supply. In the inter-war period, the gross production of rice, the staple food of the bulk of the population, was about 5 million tons and that of millets about 3 million tons. When due allowance is made for seeds, there remained only about 4.5 million tons of rice and 2.9 million tons of millets or 7.4 million tons of cereals for human consumption. This was normally supplemented by average annual imports of about half-a-million tons of rice from Burma, Siam and French Indo-China. The sudden cessation of imports caused by the Japanese flare-up in the Far East rendered the food situation in this province critical. The magnitude of the gap in food supply caused by loss of imports in the last few years of the inter-war period may be seen from appendix I; it shows the food supply position in the five years ending 1941-42, the period taken as the base for the computation of net deficit in the All-India Basic Plan. In these five years the average annual deficit amounted to 257,487 tons of rice and 13,821 tons of millets.

The food situation, since 1941-42, has been complicated by unusually adverse seasonal conditions and natural increase in population. The rate of growth of population in this province has been 1% per annum which means an additional demand for about 100,000 tons of food grains every year. In this context production was also seriously affected by failure of monsoons, cyclones etc., which led to a progressive tightening of the belt. The total available supply of food grains has declined from 7,454,713 tons in 1943-44 to 5,943,088 tons in 1947-48, one of the worst years on record (vide appendix II). The requirements of cereals alone for a balanced diet have been estimated variously at 14 oz., and 18 oz., per diem per adult by the Nutrition Advisory Committee of the Indian Research Fund Association and the Advisory Board of the I.C.A.R. respectively. Even if a mean of 16 oz., is taken, this province with its population of over 53 millions (calculated for 1948-49 from the census figures of 1941) will require 7.125 million tons of cereals (vide appendix II). The battle for closing the gap, caused by loss of imports, is now in its second stage when concerted efforts are being made not only to make the province self-sufficient with regard to cereals for a static population but with regard to all kinds of foods,—energy-giving, protein-yielding as well as protective foods—for a rapidly growing population.

*Deficiency in protective foods*

The deficiency in the supply of protective foods, based on the standards set by nutrition experts, has been considerable. The following table gives the requirements and normal production of the main categories of protective foods in the province.

*Supply of protective foods.*

| Discription | Total Requirements. (lakhs tons). | Normal Production (lakhs tons). | Deficit or surplus (lakhs tons). | Percentage of deficit or surplus to total Production. |
|---|---|---|---|---|
| Pulses. | 12.4 | 2.4 | —10.0 | —80.6 |
| Vegetables. | 46.2 | 13.1 | —33.1 | —71.6 |
| Fruits. | 8.3 | 15.1 | — 6.8 | 81.9 |
| Milk. | 37.9 | 19.0 | —18.9 | —49.9 |
| Fish, meat and eggs. | 12.4 | 2.2 | 10.2 | —82·3 |

The deficit is heaviest in the case of pulses, fish, meat and eggs, ranging upto 81%. The total production of milk is only half of the requirements while that of the vegetables only 30%; with regard to fruits, shown as surplus, it is doubtful whether the lower income groups consume as much as they should. Thus the general picture of food production, both in quantity and quality, is one of over-all deficit and the population factor tends to make this deficit progressively increase.

*Objectives of Grow More Food campaign*

Effective measures are being taken to reduce and finally wipe out this deficit and they are collectively known as the Grow More Food Campaign. The short term objective of this campaign is to close the gap and accord a minimum of food supply to the population while the long term objective is to produce in adequate quantities even protective foods to assure a balanced diet to the population.

The area of this province is about 80 million acres of which about 30 million acres are already under food crops; the area under commercial crops has been hovering round 8 million acres. The area and yield of the various crops,—food and non-food—are given in appendices III and IV. The per capita area under major food crops of .559 acre in 1938-39 rose to .567 in 1943-'44 (vide Appendix V) but latterly it has declined due to unfavourable seasonal conditions; *pro tanto* the per capita production of food grains has fallen from 631.7 lbs., in 1943-44 to 593.6 lbs., in 1946-47. The fall in area as well as output should be attributed to hazards of nature, particularly failure of monsoons. Although these data give a gloomy state of affairs,

the prospects of increasing food supply are not so bleak. The area classified as cultivable waste in this province is nearly 21 millions acres, or two-thirds of the present area under foodcrops. The scope for extensive cultivation is vast but depends upon the speed with which irrigation facilities are provided. The execution and completion of the giant irrigation works like the Rampadasagar project, the Tungabhadra project and the Krishna-Pennar project would bring about 5.54 million acres under cultivation. But these projects will take time and belong to long-term policy.

The short-term policy of the Grow More Food Campaign is a two-pronged drive of extensive and intensive cultivation for a rapid increase in food supply. Extension of cultivation, which depends upon irrigation and soil preparation, is sought to be assisted by the sinking of new wells, repair and renovation of old ones, deepening of old tanks, clearance of silt from canals as well as terracing, contour bunding, contour trenching etc. In the sphere of intensive cultivation, increased use of manure, improved seeds and better implements constitute the most important planks of the programme. Although for production to be adequate and to keep pace with the rapid increase of population, both the methods of extensive and intensive cultivation are an imperative necessity, greater emphasis will have to be laid on the former for long term and on the latter for short term results.

## EXTENSION OF CULTIVATION

The campaign for extension of cultivation in this province may be classified into land reclamation and colonisation schemes, special development schemes, special measures for increasing the acreage in the river basins and project areas, soil conservation schemes, encouragement of cultivation of all available land space by the grant of general and special concessions, new irrigation works etc.

*Land reclamation and colonisation schemes.*

There are at present 13 land colonisation schemes in this province. To induce the members of the co-operative land colonisation societies to reclaim lands allotted to them, certain concessions are being granted for manuring lands, free distribution of seed, free half grant for the purchase of bulls and increased advances for the purchase of implements. Loans have also been granted to 14 co-operative societies in 16 villages in the Cauvery-Mettur Project area for the reclamation of 1,500 acres of lands. Another scheme for reclamation of 114.19 acres at Alathur village in Tanjore district is also in operation.

*Special development schemes.*

Certain areas situated in malaria ridden jungle and inhabited sparsely by backward tribes are extremely fertile and their reclamation will contribute to substantial increase in food supply. Several such areas have

been located while special arrangements for their development have been made only in two places viz., Araku valley in Vizagapatam district and Wynaad in Malabar district. Eradication of malaria has to be undertaken first and the development of these areas starts with the adoption of anti-malarial measures. The second consideration is the well-being of the hill tribes and local inhabitants. In Araku valley, an extent of 625 acres was taken up for departmental cultivation, partly by the department directly and partly by a system of collective farming by the hill tribes. The latter were supplied with free cattle, seed and manure. It is proposed to close down direct cultivation by the department at the end of three years. The Wynaad Colonisation Scheme covers an area of 28,000 acres and the work is carried on in two stages; adoption of anti-malarial measures and opening of an agricultural farm constitute the first stage while the question of settlement with colonists is to be taken up in the second stage. The significance of these two schemes lies in their serving as experimental schemes and in the prospect of a large number of such schemes being launched soon after an assessment of their success is made.

*Extension of cultivation in Cauvery-Mettur project area.*

The entire area of 301,000 acres which the Cauvery-Mettur project has been intended to serve, has not been fully cultivated due to lack of irrigation channels coupled with lack of capital and labour. A scheme was sanctioned to bring under cultivation an area of about 40,000 acres as the first instalment of the programme for the maximum utilisation of the available water supply. By the end of March 1946 the target was exceeded and an area of 60,157 acres was cultivated of which 52,224 acres are under paddy; irrigation facilities at a cost of Rs. 1,50,000 have been provided. Loans free of interest in the first year and thereafter at 3% per annum have been granted to ryots. Extension of cultivation was encouraged also by granting a subsidy of Rs. 10 per acre of land reclaimed. An equally good measure of success attended a second scheme with a target of 10,000 acres when an area of 16,892 acres was brought under cultivation. Another proposal to extend this project area beyond the Narsinga Cauvery and bring under cultivation an area of 15,000 acres has been taken up with the issue of loans for the purchase of seeds and manures, supported by exemption of water cess and assessment.

*Soil and Water Conservation Schemes.*

In dry regions with scanty rainfall, there is a great urgency for conservation of water. Heavy showers in a few hours wash away rich soil. To prevent soil erosion as well as to catch the water of occasional rains, large scale bunding operations have been undertaken covering an area of 2,500 acres in certain taluqs of Bellary district and an area of 7,500 acres in Vizagapatam district.

*New irrigation works.*

Apart from the major irrigation projects which will take time to yield results, 103 small irrigation works under Grow More Food Campaign at an estimated cost of Rs. 160 lakhs have been undertaken. The Government of India have given a subsidy of Rs. 19.26 lakhs towards an expenditure already incurred amounting to Rs. 72 lakhs. These schemes are expected to bring an area of 105,000 acres under irrigation in addition to ensuring better irrigation facilities to about 24,000 acres.

*Mechanised Cultivation*

Reclamation of new lands and extension of the frontiers of cultivation are arduous tasks the completion of which would involve immense time and man power. To accelerate extensive cultivation, tractors and bulldozers are coming into greater use. There is a heavy demand for tractors for ploughing operations, particularly from regions where dry land and garden cultivation are predominant. Tractors are also used to clear sand strewn over fields in the cyclone-affected areas of Cuddapah, Nellore and Vizagapatam districts. It has been estimated that there is a saving of 3|8 to half in expenditure for earth works by the adoption of machines. The Agricultural department owns 145 tractors and bull-dozers for hiring out to agriculturists at concessional rates.

*General and Special Concessions.*

Cultivation of unoccupied lands, adjuncts of land to government buildings, strips of land on either side of railways etc., has been given a prominent place in the Grow More Food Campaign. Positive aid is given by allowing free or concessional rates of assessment to cultivation of unoccupied lands. All lands normally reserved for public purposes, backyards and compounds of public buildings, schools, churches, hospitals etc., have been thrown open to cultivation of vegetables and other food crops.

Lands in panchayat and reserved forests, not essential to the raising of timber and fuel have been assigned for cultivation of food crops. Tank beds which would remain dry for a part of the year, have been permitted to be cultivated. In the issue of permits to cultivate these lands, preference is given to the landless poor. Apart from concessions in water rates and exemption from or partial assessment of these new lands, the cultivators are encouraged by liberalisation of the rules relating to penalties for breaches or irrigation rules and encroachment. In the case of temporary grants of land, Government also dispensed with the collection of security deposits.

Special concessions are also granted in specified areas like Cauvery-Mettur project area in Tanjore and Trichinopoly districts, Krishna and Godavari deltas, Periyar delta, and plantation disricts. In the old delta area of the Cauvery, double cropping had always been allowed without restric-

tion and this right was extended to the new delta until a target of 84,000 acres was reached. In the northern deltas, concessions took the shape of postponement and waiving of inclusion fees, permission for second crop cultivation on lands bordering drainage and remission for 5 years of water rates for lands newly cultivated in Kaliapatnam project. Subject to the payment of usual charges, to encourage the raising of *"Kodai"* crop, an additional area of 10,000 acres in Periyar delta has been supplied with water from Periyar lake. In the plantation districts, estate owners were temporarily granted adjacent lands for food production. A loan of Rs. 600 per acre was also granted to cultivators of potatoes.

*Legislation in aid of the campaign*

Maximum utilisation of all the lands available for the raising of food crops was impeded by certain legal difficulties. Three Acts were passed to remove them. One was the Madras Estates land (Temporary Amendment) Act 1944 which provided for the temporary assignment of ryoti lands for a period ranging from three to five years without conferring occupancy rights on the assignees. The assignment was only for the purpose of raising food crops. The second was the Madras Irrigation Works (Repairs, Improvement and Construction) Act 1943 (later amended in 1945) authorising the Government to carry out repairs or improvements to privately owned irrigation works or to construct a new irrigation work in any estate and to recover cost ultimately from the owner. The third was the Madras Essential Articles Control and Requisitioning (Temporary Powers) Act, 1946 prohibiting the cultivation of mungari cotton as a pure crop or as a mixed crop with less than two rows of food crop to one row of cotton in the Ceded districts, from 15th June 1946. The Government have also prohibited the cultivation of Coconada cotton in Guntur district except as a mixed crop. A bonus of Rs. 4 per acre was also sanctioned wherever a mixed crop has been substituted for the usual pure crop. Cultivation of Coconada, Northerns, Yerrapati, N-14, Tellapatti, Westerns, H-1, Jowari, Mungari, Bogda, K-1, Karunganni, Uppam, Tinnies, and Nadam except as a mixed crop with at least one row of horsegram or blackgram for every five lines of cotton is also prohibited in the whole Province.

## INTENSIVE CULTIVATION.

Despite the existence of over 21 million acres of cultivable waste in this province, extension of cultivation has been limited by irrigation facilities and its results would be realised only in a long term policy. To tackle the present food crisis, schemes have got to be judged by the quickness with which increase in food production was achieved. To this end, nothing is comparable with methods of intensive cultivation. The manurial experiments conducted by Dr. W. Burns have clearly demonstrated that an application of 250 lbs. bone meal and 50 lbs. sulphate of ammonia per acre, in-

creases production of rice by 128%; an application of 110 lbs. of bone-meal with green manure, by 50%; neem cake and sulphate of ammonia by 22%; 40 lbs. of castor cake per acre by 33%; jowar production is increased by 115% with an application of 5 tons of farm yard manure per acre of land. Dr. Burns has also said that the improvement in the yield would be 5% if the cultivators' seeds are replaced by seeds of high yielding improved strains of crops, without any additional manuring or labour. The same authority holds that production would be increased to the extent of 5% by combating pests and diseases both by preventive and curative methods. The introduction of new implements like tractors, an adequate supply of iron and steel, ordinary implements and financial aid for carrying out agricultural operations and loans for sinking wells and making permanent improvements are important if the programme of intensive cultivation is to be successfully implemented. It is on these lines the Madras Grow More Food Campaign is planned.

*Well subsidy scheme.*

The large irrigation works belong to the long-term planning for growing more food but wells sunk by individual cultivators in their lands improve the area under food crops immediately after they are constructed. Prior to 1944, three well subsidy schemes were in operation in this province of which the first two applied only to a few specified districts while the third was in operation in all the districts except the Nilgiris. Subsidies were granted for the construction of over 64,000 new wells and for the repair of 3,125 old wells, under those schemes. With effect from 1st March 1947 a new well subsidy scheme came into operation in all the districts of the Province except the Nilgiris and Madras. It did not relate to the repair of old wells. Assistance was extended to the construction of new and repair of old tanks in the West coast districts. A subsidy of 50% of the cost of the work subject to a maximum of Rs. 300 for each new well and Rs. 500 for each new or old tank was given. Under this scheme which was in force during the year 1947-48, subsidy loans amounting to about Rs. 164 lakhs were disbursed to the ryots for about 46,500 wells and 260 new and old tanks. In 1948-49 this scheme was extended to the Nilgiri district also and the subsidy was enhanced to a maximum of Rs. 500 for a new well in ordinary areas except Malabar and South Kanara districts and to Rs. 750 for a new well in the Ceded Districts and special areas in other districts. A provision of Rs. 160 lakhs has been made to meet the expenditure of this scheme. A total extent of 86,750 acres has been brought under irrigation by the wells; the entire area however is not new land. To a large extent the wells have helped to ensure water supply to old lands and increased their productivity.

The policy of granting loans under the Land Improvement Loans Act and Agricultural Loans Act has been liberalised and the rate of interest has been reduced from 6 to 5½% per annum.

*Manures:*—The five year plan of Grow More Food Campaign of the Madras Province aims at attaining an increased production of 6.5 lakhs of tons of rice in 1951-52 by means of manurial applications and improved seeds alone. This target is to be reached by the combined efforts of the departments of Agriculture, Revenue, Public works, and Irrigation. The department of Agriculture alone is responsible for stepping up production by 5.5 lakhs of tons while the other departments are expected to help the production of additional 1,00,000 tons. The former department on which rests the heaviest burden of implementing the plan has a three-tiered programme for attaining its target. By manuring paddy crop with ammonium sulphate, it expects to increase the yield to the extent of 3 lakhs of tons, by manuring with oil cakes to the extent of 1.80 lakhs of tons and lastly by multiplication and distribution of improved seeds of paddy, another 3.55 million tons of paddy. In the aggregate, the additional production will be 8.35 million tons of paddy or in terms of rice 5.5 million tons.

The yearly allotment of ammonium sulphate from the central pool to this province has been far short of the requirements for manuring the paddy according to the programme of the Agricultural Department which consisted of applying 50,000 tons in 1947-48, 90,000 tons in 1948-49, and 100,000 tons in each of the next three years. The actual supply in 1947-48 from the central pool was only 23,000. However the Madras Government managed to get an additional 10,000 tons from a factory in the Travancore State.

*Oil cake:*—It is estimated that every ton of cake applied to paddy crop will increase the yield by about one ton of paddy. In the five year plan it was proposed to distribute about 180,000 tons for manuring the paddy crop. The distribution made through the Agricultural depots since 1944, has been recently transferred to the Co-operative Societies. At present 60% of the oil cakes produced in the mills is purchased by the Government and sold to the cultivators through co-operative societies while the remaining 40% is left to normal trade channels. The amount of groundnut oil cake distributed in the last 4 years is given below :

| | |
|---|---|
| July 1944 — June 1945 | 57,320 tons. |
| July 1945 — June 1946 | 113,285 tons. |
| July 1946 — June 1947 | 235,200 tons. |
| July 1947 — June 1948 | 161,051 tons. |

The supply of groundnut cake has of late steeply fallen owing to the profitability of selling seeds rather than oil after incurring extra crushing expenses. In the coming year, it has been estimated that supply of oil cake may not exceed 80,000 tons. If this estimate were to prove correct, the

target of the Agricultural Department would be affected to the extent of 100,000 tons of paddy.

In the sale of these manures through the Agricultural Department, the Government have spent about Rs. 12.26 lakhs as subsidy in 1946-47 by meeting all the overhead charges upto 10% of the cost and the entire administrative charges. In order to remove phosphorus deficiency of the soil in the paddy areas, and to popularise the use of phosphatic manures, the Government undertook a scheme costing Rs. 24,000 for a period of 2 years for distributing to ryots at half the cost price, 100 tons of sulphur phosphate for 400 acres in the Tanjore, Krishna, Guntur, Godavari districts and Periyar tract.

*Green Manure*:—With a view to encouraging the use of green leaf manure the Government have reduced the rate for removal of green leaf manure from reserved forests by 50%. Dead leaves and leaf mould could now be collected from reserved forests on payment of seigniorage rate of 4 annas per cart load except in a few districts.

*Compost-making*:—At present there is a corps of two officers and 68 Sanitary Inspectors trained in the process of compost-making. There is one scheme in operation for rural compost-making from waste vegetable matter and another in 90 local areas (58 Municipalities and 32 Panchayat Boards). The statistics of production and distribution are tabulated below:

**Compost making by Municipalities and Panchayet Boards.**

| Year. | Quantity prepared in cubic foot (in lakhs.) | Quantity distributed in cubic foot (in lakhs.) |
|---|---|---|
| 1946 | 40.17 | 28.18 |
| 1947 | 50.75 | 39.49 |
| 1948 | 52.46 | 25.30 |
| | Rural compost making | |
| 1945-46 | 17,393 tons | 13,774 tons |
| 1946-47 | 4,688 pits | 4,688 pits |
| 1947-48 | 3,73,004 c. ft. | 2,83,000 c.ft. |

*Improved Seeds*:—Multiplication and distribution of high yielding strains of seeds are the most important items of work of the Agricultural Department. In the five-year plan, better seeds are expected to yield an additional 3.55 lakh tons in 1951-52. The department has evolved a number of improved strains—139 in paddy, 51 in millets, 5 in pulses, 9 in oil seeds, 4 in sugar cane, and 9 in cotton. The experiments conducted in Government farms have shown that the percentage increase in the yields of grains evolved and distributed by the department are 15 to 20% for paddy, 10 to 20% for millets and 20 to 25% for oil seeds.

There is a comprehensive scheme at a cost of Rs. 35.86 lakhs for multiplication and distribution of improved seeds of paddy, millets, pulses,

groundnut and green manure crop. Great faith is placed in this scheme as it is believed that if the entire cultivation of food crops is done with improved varieties of seeds, the province will attain self-sufficiency in food, without the help of any other scheme.

The large scale multiplication of the high yielding strains of seeds is brought about by running what are known as "Primary Seed Farms" in the districts. A limited quantity of the departmental strains suited to particular localities is distributed to selected cultivators. By previous agreement, the cultivators of these Primary seed farms deliver the produce to the departmental officer at the prevailing price. The department pays a premium over the market price and rogueing charges at specified rates. Every year the department distributes about 8,000 to 12,000 tons of improved paddy seeds for bulk sowings in the province. The area under seed paddy is about 35,000 acres every year. In 1947-48, 9,030 tons of paddy seeds and 101 tons of millets seeds besides a ton of pulses seeds were distributed by the department. In the five year plan, targets have been fixed to multiply seeds of high yielding strains of paddy to serve 7.6 million acres by 1951-52. Distribution of improved coconut, groundnut and gingelly seeds is also done to a limited extent by the department. (Vide Appendix V for data relating to seeds distributed and area covered etc.).

*Supply of Iron and Steel:*—There has been a persistent short supply of iron and steel for the manufacture of the necessary agricultural implements which seriously hinders agricultural operations. To relieve this scarcity, the Provincial Government now obtain quotas of iron and steel in bulk on permits and distribute a portion of the supplies to selected firms for the manufacture of certain agricultural implements for distribution to ryots through the 526 agricultural depots at fair prices. The rest of the supplies are sold to ryots and village blacksmiths directly by the Agricultural department. The quantity of iron and steel distributed on these lines in 1947 amounted to 23,000 tons and in 1948 to 31,000 tons.

Special attention is also paid to make available to the agriculturists ordinary implements like country ploughs and shares, spades, sickles, crowbars, cattle shoes, nails etc. In 1946-47, iron available with scrap merchants was allotted to 78 fabricators and the articles made were distributed at fair prices through the departmental depots.

*Agricultural Engineering:*—The agricultural department has a special engineering branch to advise and help agriculturists in using modern machinery for ploughing, lifting water etc. This branch procures electric motors, petrol pump sets etc to hire out or sell to farmers. The outturn of work by this section of the Agricultural department upto the end of September 1948, consisted of the procurement for hire or for sale of 4,117 electric motor pumps, 792 petrol pump sets, 215 Diesel oil engines, 3,24,000 feet of pipes,

145 tractors (for hire) and 35,240 tons of iron and steel for manufacturing agricultural implements.

## PRODUCTION OF PROTECTIVE FOODS.

Among protective foods special mention must be made of the measures taken to increase the production of vegetables, milk and milk products, eggs and fish.

*Vegetable cultivation*:—From September 1942, the policy of this Government has been to encourage the cultivation of vegetables in the compounds of local board schools, buildings and road margins. Land revenue assessment was also dispensed with till the end of fasli 1357. Free supply of vegetable seeds upto a maximum limit of Rs. 50/- per annum is also made to educational institutions. The distribution of vegetable seeds to schools has been progressively expanding in the last few years as the following table will show:—

| *Year.* | *Value of seeds distributed.* |
|---|---|
| 1946-47 | Rs. 1,680 |
| 1947-48 | ,, 5,547 |
| 1948-49 | ,, 10,000 |

In 1947-48 a seed farm at Wellington alone produced seeds worth Rs. 10,500. About 1,200 lbs. of vegetable seeds and 51,000 seedlings were distributed this year and it is estimated that about 12,000 acres of additional area has come under vegetable cultivation, with production stepped up by 17,200 tons of vegetables.

*Milk and milk products:* Schemes for salvage of dry cows and she buffaloes in the city of Madras, have been introduced. To encourage rearing of calves, a subsidy of Rs. 35/- per calf is given in the city to the owner of every calf which is alive and in a satisfactory condition at the end of 9 months. Municipal councils have been instructed to restrict the slaughter of milch cattle and utilise uncultivated plots for the maintenance of dry cows. Interest free loans are liberally granted to members of Co-operative Milk Supply Societies and Unions for the purchase of milch cattle. The owners of cattle yielding record quantities of milk are given prizes. Cattle feed in the form of cotton seed etc. is made available at reasonable prices.

*Eggs:* The province of Madras, normally deficit in egg production, used to obtain large imports from Travancore and Cochin but both these states have now banned the export of eggs and fowls. The post of a special Poultry Officer was created in 1944-45 to coordinate the various developmental schemes in the province. Two poultry development schemes, one at Katpadi and the other at Mangalagiri (Tinnevelly district) have been sanctioned by the Government. The co-operative egg marketing society is also subsidised by the Government.

*Fisheries:* The Government have sanctioned 40 schemes to develop both inland and marine fisheries in this province. These schemes relate to various aspects of fishing industry such as conduct of local surveys, opening of demonstration farms, training of candidates in fisheries, production of smoked fish, deep sea fishing operations, building improved types of fishing boats, provision of transport vans and ice plants etc.

## RESULTS OF GROW MORE FOOD CAMPAIGN

Despite the vast range and variety of schemes in the Grow More Food Campaign in Madras, the achievements either in increase of acreage or output have not been gratifying. But the poverty of results could not be ascribed to a complete lack of will or inefficiency of organisation but only to certain unforeseen adverse seasonal conditions. The production of food-grains and other food stuffs in the last 3 years would have been considerably less but for the execution of the various measures of the Grow More Food Campaign. It must however be admitted that the campaign is capable of producing better results, if certain impediments are cleared out of the way and some re-adjustments are made in the organisation of the Campaign.

The high percentage of small and uneconomic holdings is a grave defect in the agricultural set-up of this Province. Schemes for consolidation of midget holdings into impartible economic holdings are now being discussed and will be taken up shortly. There is already a bill to improve standards of agricultural efficiency. It provides for a better control of cultivation and for bringing under the plough all cultivable lands. Power is to be given to the Government to compel owners to raise the crop which the province requires with a view to increasing production of food and also to assure land-owners of a market and fair price for their produce. If the standards of management and husbandry are below the mark, the lands of such cultivators may be taken over by the Government and let out to efficient cultivators, the owners being given a share of the produce.

With the abolition of the Zamindaris in this Province, the problem of tenancy has lost much of its importance. It is howevr quite possible to increase the yield by giving a better share to tenants who are varamdars by allowing them to have a higher percentage of the yield if it exceeds the normal by a specified percentage. For example, if a varamdar gets 50% of the yield when the normal yield is expected to be 40 maunds of paddy, he will get twenty and the landlord twenty. If the yield by dint of his labour and enterprise exceeds, say, 50 maunds he may be allowed to take 60% of the total yield. This sliding scale of reward for the tenant will give a direct incentive to obtain more produce. With regard to the tenants paying fixed rent, no reform appears to be necessary. Vague ideas about giving away the lands to "actual tillers of the soil" are being expressed in

some quarters. But they overlook the fact that mere transference of ownership of land from the present owners to the "tillers" will not have the magic effect of increasing production. On the other hand, the tillers, generally lack the necessary capital, implements, bullocks etc. to attend to cultivation efficiently. Further such suggestions of wholesale transference, whatever may be their long term effects, will have the immediate effect of chilling the enthusiasm of landholders to increase production. For some time until normal conditions are restored, it would be safer to leave undisturbed the existing tenant landlord relationship in the ryotwari area of the Madras Province. Any hasty reform may tell upon the grow-more-food drive.

*Agricultural prices:* There has been a tendency on the part of agriculturists to switch over to the cultivation of non-food crops from that of food crops. This is generally due to the rigidity of price control in the food sector. It is sometimes pleaded that the panoply of price control should be extended to all sectors. Mere proleferation of price control will not be a panacea. Relaxation and removal of all controls, may, on the other hand, serve the cause of increased food production. There is always a grievance under a sysem of controls that prices are less than remunerative. This grievance will vanish with the exit of controls. The will to produce more will be stimulated when the agriculturist feels that he would get the market price unhindered by any governmental restrictions. Opinion is gaining ground among agriculturists and rural population that the prices of agricultural produce, notably foodgrains, are being deliberately fixed at low levels to serve the interests of the urban and industrial consumers, a comparative minority, and the interests of producers, a majority of the population are being sacrificed. The prices may, therefore, well be left to be adjusted by natural causes.

The threat of hoarding or famine may be averted by substituting a large scale buying programme instead of the unpopular procurement system. The market prices may be offered and the grains purchased may be stored in warehouses and released or sold whenever necessary. The Government of Madras have recently published a bill for establishing licensed warehouses for the storage, chiefly of agricultural produce. These warehouses may be used by both the government and the private individuals for storing grains. The receipts, issued by the warehouse authorities being negotiable, the Government need not lock up too much of their resources in foodgrains. This method of purchase, storage and financing will obviate the need for compulsory procurement and may produce better results.

*Technical Obstacles*: At present, the cultivator feels it easier to get finance than equipment and expert assistance, e.g. sinking of a well or installing an electric water-lift. Unless the latter are supplied adequately and in time, all the schemes of Grow More Food woud be barren of results.

In certain cases, the ordinary agriculturist is a bundle of prejudices; for instance, he is loath to use poudrette. In these cases a great deal of publicity and enlightenment is an urgent necessity. Frequently schemes of Grow More Food are held up due to lack of proper utilisation of local resources. Silt clearance, renovation of tanks, sinking of wells, (in initial stage) etc., generally require only unskilled labour, available in plenty in villages. In all the villages, arrangements must be made to make full use of the available idle resources; these could be best achieved by instituting prizes, rewards etc. to exite the spirit of emulation. Number of manure pits, wells, of earthwork in bunding, terracing and tank-repairing operations, number of good milch cows, sturdy draught animals, extent of vegetable and fruit gardens, etc., output of green manure and tree planting for it may be taken as the criteria for the award of prizes. There is hardly anything impracticable in this scheme because there is already a rolling cup at a cost of Rs. 25/- in each taluq to be awarded at the time of jamabandi to the village officer in whose jurisdiction the largest number of green manure shrubs and seedlings are grown and established by his efforts. Only this idea requires extension.

*Renovation of tanks and minor irrigation works:* By far the quickest way of increasing the food production in this province, is to renovate the 33,000 tanks, deepen them and make them effectively irrigate a much larger area. Of these, 25,000 tanks found in 17 districts are completely rainfed and 2,000 more, under Public Works Department, partly rainfed and partly fed by small streams. Out of 80 lakhs of acres under wet cultivation in the province, nearly 35 lakhs are irrigated by these 27,000 tanks. But in many years, this entire area of 35 lakhs acres is not actually irrigated owing to defective storage of water; the capacity of these tanks has been so much reduced by silting that even in years of good rainfall, they are unable to irrigate the entire ayacut. The present capacity of a large number of tanks to hold water is only about 30 days although originally it was twice or thrice as much. All these tanks can be thoroughly repaired at an expense of about Rs. 8 crores. If the capacity of each tank to irrigate is extended by 25 acres on an average, the total increase in area under effective irrigation will be 675,000 acres. Under proper tillage, this area alone will increase food production by more than 5% and almost fill the gap. While the huge irrigation projects will meet long term needs, the repair and renovation of the 27,000 tanks will go a long way in solving the present food crisis and the entire cost is not even as much as one year's land revenue and irrigation rates.

## CONCLUSION

To sum up, the Grow More Food Campaign in Madras is being conducted on the extensive and intensive fronts.

I. On the extensive front (1) land reclamation including colonisation and development schemes, being long term in character, have not yet crossed the experimental stage. (2) In Cauvery and Mettur Project area as well as in Northern deltas, appreciable progress has been made in extension of cultivation. (3) In the dry districts of Rayalaseema, soil water conservation schemes are making headway. (4) New irrigation work has been undertaken. (5) A small beginning has been made in the use of tractors and bulldozers for terracing, surfacing and ploughing new land.

(II) (1) General and special concessions in the land revenue and cesses have been shown to fresh cultivation in Panchayat and Reserve Forest Areas etc. (2) Temporary assignment of ryoti lands for periods ranging from 3 to 5 years solely for the purpose of raising food crops have been made under Special Acts. (3) Government have assumed powers to carry out repairs or improvements of old irrigation works and to construct new ones in private estates recovering the cost ultimately from the owner. (4) Legislation has been passed to extend the cultivation of food crops by encouraging mixed cultivation with non-food crops.

III. Tenurial reforms have been effected by the abolition of the Zamindaris and pending its implementation, a Rent Reduction Act has come into force, bringing down the high zamindari rent to the level of ryotwari assessments. Amendment to Malabar Tenancy Act is under the active consideration of Government.

IV. On the intensive front, (1) the most important activity has been sibsidised well-sinking. Nearly 90,000 acres have been brought under effective irrigation by sinking of new wells and renovation of old wells. (2) The policy of granting loans for agricultural operations has been liberalised and the rate of interest reduced. (3) A vigorous drive in the direction of an intensive application of manures and chemical fertilisers has been undertaken. The distribution of oil cake is being done under Government auspices; use of phosphatic manure has been encouraged by grant of subsidies. Increased supply of green manure has been rendered possible by relaxation of Forest Regulations. A concerted effort for compost making has been undertaken in 90 municipal and panchayat boards and in several rural areas. (4) A large scale multiplication of the high yielding strains of seeds has been brought about by running 'Primary Seed Farms,' in almost every village and the work is progressing according to a five year target.

V. The Agricultural Department has taken up the distribution of iron and steel to agriculturists. A special Agricultural Engineering Branch advises agriculturists on use of the modern machinery and procures for hire or for sale tractors, oil engines etc.

VI. Nutritional aspect of the Grow More Food Campaign lays stress on the increased production of vegetables, milk and milk products, eggs and fish

(1) Free supply of vegetable seeds and seedlings is made to educational and public institutions. Land revenue assessment was also dispensed with for vegetable cultivation. (2) To encourage milk production, dry cows are salvaged and rearing of calves is encouraged by liberal subsidy. Slaughter of milch cattle has been prevented. Liberal loans are being granted to Co-operative Milk Supply Societies for purchase of milch cattle. Prizes are being instituted for record milk yielders. (3) New poultry development schemes have been started. (4) More than 40 schemes are in operation for the development of both inland and marine fisheries.

VII *Schemes under consideration:-* On the lines of the British Agricultural Bill, 1947, powers are sought to be assumed by the Government to step up efficiency of agriculture and bring all available land under cultivation. Proposals for compulsory consolidation of fragmented holdings are under active consideration. A Bill for the establishment of bonded warehouses has been already published providing for the issue of warehouse receipts negotiable in the money market thus facilitating agricultural finance. The abolition of Zamindari has done away with the acute problems of tenancy and the conversion of the Zamindari into ryotwari areas will considerably tone up the psychology of the agriculturists.

VIII. *Further measures necessary:* Renovation of more than 27,000 tanks capable of effectively irrigating more than 3.5 million acres is an imperative necessity. This work will not cost more than 8 crores of rupees or less than one year's revenue from land. By this single measure alone the immediate gap in food supply can be progressively closed within a period of 3 to 5 years.

IX. *Incentives to production:* (1) Arrangements should be made to give a better share to Varamdars by allowing a higher percentage of the yield if it exceeds the normal. This will afford a great incentive to increased production. (2) Fair, remunerative prices and cheaper credit must be guaranteed to agriculture. The establishment of a Commodity Corporation aided by the bonded warehouses will be of help in this direction.

*Extension work:* There is a great need for expansion of the extension work in agricultural engineering, utilisation of improved strains of seeds, poudrette, compost, etc. Progressive methods of agriculture must be encouraged by the institution of prizes and awards.

## THE PROBLEM RESTATED.

For over a century now, Madras has been a province deficit in food supply. It has been depending on imports, at one time from Orissa and Bengal, and later from Burma when that country was conquered and developed by the British. From a trickle in the first quarter of the 19th century the Burmese imports steadily gathered volume and swelled into a regular

stream until they were suddenly dried up by the fall of Burma. That started the crisis. To the loss of foodgrains to the tune of nearly 3 lakhs tons was being added the increasing pressure of population which has been growing at the rate of 500,000 a year. The net result is, today, against a requirement of 7.123 million tons on a 16 oz., basis, the actual supplies amount to 6.466 million tons, leaving a gap of 6,57,000 tons a year or roughy 10% of current production.

This state of affairs has been there only for the past four years. If we look at the internal production of foodcrops during the years 1938-43, we find that it amounts to an average of 7,277 million tons which would be more than sufficient to feed the present population at 16 oz., per diem per adult.

Prima facie, the immediate problem is a simple one. It is one of getting back to the level of production attained in the quinquennium, 1938-43. The multiplication and distribution of improved strains of seeds alone, according to expert opinion, would step up production by about 10% and the application of more manures and fertilisers, by another 7 to 8%; and our deficit is only 10%. Notwithstanding the concentration on these two schemes as well as on a well-sinking campaign, which has cost the Government well-nigh Rs. 4 crores the Grow More Food Campaign has not been attended with positive success. This is mainly due to unusually adverse seasonal conditions like cyclones and unprecedented failure of harvests in the last four years and serious bottlenecks in the supply of manures, fertilisers and other agricultural requisites. The Grow More Food Campaign had, therefore, at best to be a negative measure—but for it, things might have gone worse.

The campaign, however, might have fared better, had not another factor come into play to change the pattern of the agricultural economy of the province. This was the steady decline in the acreage under millets. The area under millets which was of the order of 13.259 million acres in 1941-42 progressively declined to 10.979 million acres in 1947-48 (vide Appendix III.) The loss for millets appears to have been the gain mainly for groundnuts. Although steps have been taken as part of the Grow More Food Campaign to restrict the cultivation of indigenous cotton with some measure of success, groundnut has remained so far unaffected by any restrictionist policy.

The problem of food crops versus money crops, in general, has raised much controversy. On the side of food crops, it is argued that self-sufficiency in food should be a country's first objective. That should have top priority, and all else matters little. No price is too high to attain this objective. Legal restriction of money crops and levy of a restrictive cess on commercial crops are some of the methods advocated for this purpose. On the other hand, for the commercial crops, it is argued, that any restriction of cultivation might dislocate the industrial economy by cutting into the supply of essential industrial raw materials. In the existing context of the short

supply of industrial goods, that might result in more acute scarcity and aggravation of inflationary forces. Even agriculturists, who raise mixed crops on a rotation basis, are averse to the restriction of money crops, as in the prevailing price structure the cultivation of money crops enjoys a distinct comparative advantage and is the only means of gaining on the rounds what they lose in the swings. With regard to groundnut, in particular, it is pointed out that it is very much of a foodcrop and its by-product, oil-cake, is an essential feed of the soil and being a leguminous crop, it also helps in the fixation of nitrogen and enriches the soil for raising cereal crops. The question therefore cannot be decided on *a priori* basis. It, however, establishes the need for crop-planning based on a thorough examination of all the relevant factors, keeping in view the country's economy as a whole. It also brings into prominence the ticklish question of establishing a parity of prices between food and commercial crops. The latter thesis derives added significance in view of the fact that today we are paying nearly 50% more for the imported food stuff than to indigenous production. Both these—crop planning and competitive prices for food crops—are matters for immediate solution, and if solved successfully, will solve the present food problem.

In the five years ending 1941-42, (adopted as the base for the All India Basic Plan), production plus imports had given a per capita consumption of over 19 oz., per diem. In the absence of a balanced diet, a lower ration in a mainly rice-eating province like Madras has already told on the health and vitality of the population. Assuming 20 oz., as the normal ration per adult per diem, the total requirements of the province work out to 8.906 million tons of food-grains. Compared with the earlier quinquennium (1938-1943) this rate of consumption would entail a deficit of 1.629 million tons or 18.3% but as compared with the latter quinquennium (1943-48), the deficit is 2.202 million tons or 24.7%. To ensure this ration, it is urgent to work out a medium term plan. The chief features of this plan should be a re-doubled effort in intensive cultivation, extension of cultivation by reclamation and colonisation schemes, expansion of the acreage under millets to the peak level of 1941-42 and more than all these, the effective utilisation of over 27,000 tanks by means of a comprehensive scheme of repair and renovation. The latter scheme would involve a cost of only Rs. 8 crores—less than one year's revenue from land or about 2 years' expenditure now incurred by the province on food subsidies. The work of repairing and renovating the tanks can be accelerated by entursting it to the village communities; for centuries, this kind of work has been performed by villagers themselves. The time-consuming and elaborate scrutiny of schemes should be minimised and a good deal of red tape cut out; by harnessing the supply of unskilled labour available in villages and by giving a purposive drive, it may not be impossible to complete this work in three to five years.

The long-term plan should aim at targets higher than the provision of adequate supplies of cereals at the rate of 20 oz., per adult per diem. Energy-giving food should be fortified by ample supplies of protective foods, and the far-reaching implications of the steady growth of population and the consequent expanding demand for food supplies, should be fully taken into account.

The major irrigation projects like the Tungabhadra, already under construction, and Ramapadasagar and Krishna-Pennar projects in the final stages of investigation, bid fair to afford irrigation facilities for extensive cultivation of more than 5.5 million acres (vide Appendix VII). When these schemes fructify in a period of 10 years, as is expected, there is no reason why the province of Madras should not become self-sufficient in food supply, if not produce an export surplus.

No scheme of extension of cultivation, however, will achieve all the objectives outlined above unless it is accompanied by adequate supply of green manures, oil cakes and chemical fertilisers, a judicious crop-planning, rational fixation of remunerative prices for agricultural products, and provision of crop insurance. A high priority will need to be given to effective "extension" work, with the object of covering the entire area under food crops with improved strains of seeds. With the implementation of a comprehensive long-term plan on these lines, not only would there ensue extension of area under protected irrigation and expansion of food crops, but also a balanced agricultural economy with strength and resilience to withstand price and seasonal fluctuations.

## APPENDIX I

*Food Supply position in the Madras Province in the 5 years ending 1941-42*

| Year | Production of rice Tons | Net Imports | Quantity of rice available for consumption Tons. |
|---|---|---|---|
| | | *RICE* | |
| 1937-38 .. .. | 4,850,000 | 327,616 | 5,177,616 |
| 1938-39 .. .. | 4,100,000 | 369,271 | 4,469,271 |
| 1939-40 .. .. | 4,467,000 | 548,752 | 5,015,752 |
| 1940-41 .. .. | 5,150,000 | 196,579 | 5,346,579 |
| 1941-42 .. .. | 4,955,000 | —154,783 | 4,800,217 |
| Average .. .. | 4,704,400 | 257,487 | 4,961,887 or 4,962,000 roundly |
| | | *MILLETS* | |
| 1937-38 .. .. | 2,653,000 | 14,648 | 2,667,648 |
| 1938-39 .. .. | 2,791,000 | 27,413 | 2,818,413 |
| 1939-40 .. .. | 2,998,000 | — 955 | 2,947,045 |
| 1940-41 .. .. | 3,084,000 | 7,898 | 3,091,898 |
| 1941-42 .. .. | 2,856,000 | 20,101 | 2,876,101 |
| Average .. .. | 2,876,400 | 13,821 | 2,890,231 or 2,890,000 roundly |

## APPENDIX II.

*Population, requirements and available supply of food grains 1938-39 to 1948-49*

| Year | *Available* | | | Requirements per adult at 16 oz. (in 000 tons) | Surplus or deficit (without imports in 000 tons) | Surplus or deficit (with imports in 000 tons) | Population in thousands.* |
|---|---|---|---|---|---|---|---|
| | Production (in 000 tons) less seeds | Imports (in 000 tons) | Total (in 000 tons) | | | | |
| 1938-39 | 6,641 | 397 | 7,038 | 6,388 | 253 | 650 | 48,287 |
| 1939-40 | 7,215 | 548 | 7,763 | 6,459 | 756 | 1,304 | 48,823 |
| 1940-41 | 7,984 | 204 | 8,188 | 6,528 | 1,456 | 1,660 | 49,342 |
| 1941-42 | 7,591 | 175 | 7,766 | 6,600 | 991 | 1,166 | 49,890 |
| 1942-43 | 6,954 | —227 | 6,727 | 6,674 | 280 | 53 | 50,444 |
| 1943-44 | 7,373 | 82 | 7,455 | 6,748 | 625 | 706 | 51,004 |
| 1944-45 | 7,478 | 46 | 7,524 | 6,823 | 655 | 701 | 51,570 |
| 1945-46 | 6,118 | 388 | 6,506 | 6,899 | —781 | —393 | 52,142 |
| 1946-47 | 6,861 | 185 | 7,046 | 6,977 | —115 | 70 | 52,721 |
| 1947-48 | 5,687 | 256 | 5,943 | 7,054 | —1367 | —1,111 | 53,313 |
| 1948-49 | 6,466 | N.A. | .... | 7,123 | .... | .... | 53,846 |

*Adult equivalent in Madras Province is taken as 81.2% of the actual Population.
N.A. Not available.

## APPENDIX III

1. *Statement showing the area under food and commercial crops in the Madras Province during* 1938-39 *to* 1947-48.

| Crop<br>1. | 1938-39<br>2. | 1939-40<br>3. | 1940-41<br>4. | 1941-42<br>5. | 1942-43<br>6. | 1943-44<br>7. | 1944-45<br>8. | 1945-46<br>9. | 1946-47<br>10. | 1947-48<br>11. |
|---|---|---|---|---|---|---|---|---|---|---|
| *Food Crops.* | Acres | Acres | Acres | Acres | Acres | Acres | Acres | Acres | Acres | Acres |
| Paddy .. .. | 9,844,388 | 9,844,316 | 10,744,393 | 10,212,422 | 10,382,419 | 10,925,131 | 11,013,530 | 10,202,580 | 10,986,124 | 10,352,000 |
| Millets .. .. | 13,165,372 | 13,165,459 | 12,598,534 | 13,295,227 | 13,095,059 | 13,203,887 | 12,290,969 | 11,631,453 | 11,821,144 | 10,979,000 |
| Total Cereals .. | 23,009,760 | 23,009,775 | 23,342,927 | 23,507,649 | 23,477,478 | 24,129,018 | 23,304,499 | 21,834,033 | 22,807,268 | 21,331,000 |
| Pulses .. .. | 2,425,685 | 2,691,639 | 2,807,264 | 2,915,136 | 2,900,384 | 3,109,323 | 3,005,845 | 2,791,886 | 2,935,523 | 2,724,500 |
| Sugarcane .. | 98,202 | 137,633 | 161,716 | 109,527 | 121,691 | 154,650 | 155,596 | 160,700 | 202,828 | 247,430 |
| Other food crops .. | 1,506,289 | 1,525,576 | 1,514,515 | 1,513,882 | 1,507,898 | 1,534,580 | 1,502,257 | 1,639,105 | 1,682,737 | Not available |
| Total Food crops .. | 27,039,996 | 27,364,653 | 27,826,422 | 28,046,194 | 28,007,451 | 28,927,571 | 27,968,197 | 26,425,724 | 27,628,356 | do. |
| *Commercial Crops.* | | | | | | | | | | |
| Groundnut .. | 3,770,689 | 3,617,600 | 3,922,497 | 2,784,441 | 3,382,126 | 3,550,013 | 4,299,592 | 4,165,385 | 4,121,394 | 4,135,400 |
| Gingelly .. .. | 876,397 | 734,496 | 786,079 | 693,070 | 839,519 | 696,838 | 616,142 | 599,056 | 672,870 | 670,600 |
| Castor .. .. | 267,627 | 266,051 | 266,786 | 243,954 | 277,238 | 279,032 | 284,759 | 235,263 | 229,244 | 230,500 |
| Coconut .. .. | 585,124 | 608,607 | 598,427 | 596,147 | 598,054 | 605,764 | 615,518 | 613,997 | 618,813 | Not available |
| Cotton .. .. | 1,928,714 | 2,196,284 | 2,412,857 | 2,540,996 | 2,209,889 | 2,187,278 | 1,670,141 | 1,611,339 | 1,566,530 | 1,360,900 |
| Tobacco .. .. | 320,134 | 307,172 | 310,604 | 333,880 | 284,787 | 238,219 | 328,185 | 363,036 | 303,997 | Not available |
| Total of commercial crops | 7,748,985 | 7,730,210 | 8,297,250 | 7,192,488 | 7,591,613 | 7,557,146 | 7,814,337 | 7,588,076 | 7,512,848 | do. |

## APPENDIX IV.

*Statement showing the production of food and commercial crops in the Madras Province* 1938-49- *to* 1947-48.

| Crop. 1. | 1938-39 2. | 1939-40 3. | 1940-41 4. | 1941-42 5. | 1942-43 6. | 1943-44 7. | 1944-45 8. | 1945-46 9. | 1946-47 10. | 1947-48 Estimates 11. |
|---|---|---|---|---|---|---|---|---|---|---|
| *Food Crops.* | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| Paddy .. .. | 6,119,740 | 6,667,040 | 7,687,120 | 7,396,000 | 6,886,320 | 7,360,990 | 7,543,250 | 6,330,590 | 7,342,450 | 5,978,000 |
| Millets .. .. | 3,381,350 | 3,673,670 | 3,800,540 | 3,579,260 | 3,197,450 | 3,307,840 | 3,283,070 | 2,618,040 | 2,610,450 | 2,352,000 |
| Total cereals .. | 9,501,090 | 10,340,710 | 11,487,660 | 10,975,260 | 1,083,770 | 10,668,830 | 10,826,320 | 8,948,630 | 9,952,900 | 8,330,600 |
| Pulses .. .. | 222,360 | 270,280 | 295,220 | 285,350 | 241,670 | 267,060 | 285,890 | 223,780 | 253,550 | 239,500 |
| Sugarcane (tons of jaggery) | 273,800 | 379,530 | 484,760 | 309,280 | 327,240 | 435,290 | 459,910 | 436,670 | 591,910 | 680,770 |
| Other food crops .. | 3,301,350 | 3,498,138 | 3,662,119 | 3,320,137 | 3,000,682 | 3,013,418 | 3,399,460 | 3,667,670 | 3,185,540 | Not available |
| Total food crops .. | 13,298,660 | 14,488,658 | 15,929,759 | 14,890,027 | 13,653,362 | 14,384,598 | 14,971,580 | 13,276,750 | 13,983,900 | Not available |
| *Commercial Crops.* | | | | | | | | | | |
| Groundnut .. | 1,612,800 | 1,721,580 | 1,924,010 | 1,182,810 | 1,304,180 | 1,603,250 | 1,951,040 | 1,563,880 | 1,696,440 | 1,607,600 |
| Gingelly .. .. | 93,760 | 89,870 | 102,540 | 84,000 | 97,560 | 81,270 | 76,270 | 67,200 | 78,850 | 79,400 |
| Castor .. .. | 22,132 | 25,630 | 27,390 | 23,400 | 22,980 | 24,640 | 25,180 | 19,160 | 19,350 | 21,800 |
| Coconut .. .. | .... | N.A. | .... | .... | N.A. | .... | .... | N.A. | .... | .... |
| Cotton (bales of 400 lb. lint) bales.. | 369,240 bales | 452,100 bales | 530,170 bales | 562,690 bales | 470,920 bales | 482,480 bales | 381,310 bales | 360,670 bales | 335,780 bales | 292,700 bales |
| Tobacco (tons) .. | 119,430 | 141,250 | 126,810 | 129,300 | 113,930 | 93,600 | 132,600 | 132,920 | 108,080 | N.A. |

## APPENDIX V.

*Area and Production of all major food crops.*

| Year | Population (in thousands) | Area under food crops (in thousand Acres) | Area per head (Acres) | Production (In tons 000s) | Production per head lbs. |
|---|---|---|---|---|---|
| 1938-39 .. | 48,287 | 27,040 | ·559 | 13,299 | 616·0 |
| 1939-40 .. | 48,823 | 27,365 | ·560 | 14,489 | 665·3 |
| 1940-41 .. | 49,342 | 27,826 | ·564 | 15,930 | 723·6 |
| 1941-42 .. | 49,890 | 28,046 | ·562 | 14,890 | 667·5 |
| 1942-43 .. | 50,444 | 28,007 | ·555 | 13,663 | 607·0 |
| 1943-44 .. | 51,004 | 28,928 | ·567 | 14,385 | 631·7 |
| 1944-45 .. | 51,570 | 27,968 | ·542 | 14,972 | 649·6 |
| 1945-46 .. | 52,142 | 26,426 | ·507 | 13,271 | 571·2 |
| 1946-47 .. | 52,721 | 27,628 | ·524 | 13,984 | 593·6 |
| 1947-48 .. | 53,313 | .... | .... | .... | .... |
| 1948-49 .. | 53,846 | .... | .... | .... | .... |

## APPENDIX VI

*Distribution of improved strains of seeds and area covered.*

| Year | Quantity of seeds distributed (tons) | Area covered by improved seeds of paddy.(Acres) | Area of seeds farms raised. (Acres) | Additional production of food obtained (tons) |
|---|---|---|---|---|
| 1943-44 .. | 8,770 Paddy .. | 3,838,809 | 25,720 | 191,940 |
| 1944-45 .. | 9,038 Paddy .. | 11,013,000 | 29,368 | 550,650 |
| 1945-46 .. | 9,864 Paddy .. | 9,952,000 | 33,378 | 497,600 |
| | 148 Millets .. | | | |
| 1946-47 .. | 12,540 Paddy .. | | | |
| | 57 Millets .. | 780,335 | 34,600 | 107,304 |
| | 732 Other seeds .. | | | |
| 1947-48 .. | 9,030 Paddy .. | | | |
| | 101 Millets .. | 2,585,800 | 34,987 | 92,350 |
| | 1 Pulses .. | | | |
| | 1,207 Other seeds .. | | | |

## APPENDIX VII.

*Major Irrigation Projects*

| No. | Name of the Project | Estimated cost (lakhs) Rs. | Probable area to be irrigated (acres) |
|---|---|---|---|
| 1. | Tungabhadra .. .. | 7,98 | 294,210 |
| 2. | Lower Bhavani .. .. | 7,00 | 207,000 |
| 3. | Ramapadasagar .. .. | 129,00 | 2,746,000 |
| 4. | Krishna Pennar .. .. | 78,00 | 2,500,000 |
| | Total .. | 221,98 | 5,747,210 |

## APPENDIX VIII

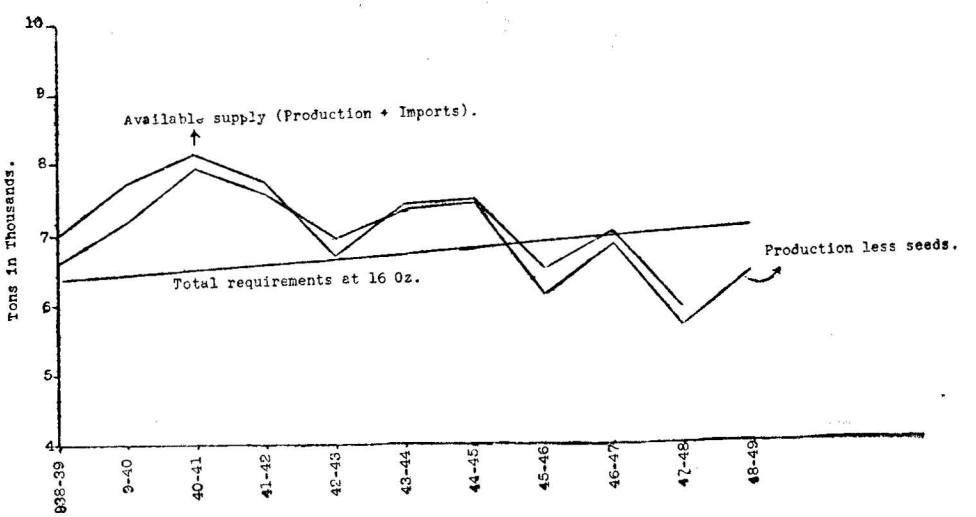
*Statistics of Acreage and Production of Millets and Groundnut*

| YEAR | MILLETS | | GROUNDNUT | |
|---|---|---|---|---|
| | Area (Acres) | Production (Tons) | Area (Acres) | Production (Tons) |
| 1938-39 .. | 13,165,372 | 3,381,350 | 3,770,689 | 1,612,800 |
| 1939-40 .. | 13,163,459 | 3,673,670 | 3,617,600 | 1,721,580 |
| 1940-41 .. | 12,598,534 | 3,800,540 | 3,922,497 | 1,924,010 |
| *Average for the year ending* | | | | |
| 1940-41 .. | 12,975,788 | 3,618,520 | 3,770,262 | 1,752,797 |
| 1941-42 .. | 13,295,227 | 3,579,260 | 2,784,441 | 1,182,810 |
| 1942-43 .. | 13,095,059 | 3,197,450 | 3,382,126 | 1,304,180 |
| 1943-44 .. | 13,203,887 | 3,307,840 | 3,550,013 | 1,603,250 |
| 1944-45 .. | 12,290,969 | 3,283,070 | 4,299,592 | 1,951,040 |
| 1945-46 .. | 11,631,453 | 2,618,040 | 4,165,385 | 1,563,880 |
| 1946-47 .. | 11,821,144 | 2,610,450 | 4,121,394 | 1,690,440 |
| 1947-48 .. | 10,979,000 | 2,352,000 | 4,135,400 | 1,607,600 |
| | INDEX NUMBER | | | |
| *Three years ending* | | | | |
| 1940-41 .. | 100·00 | 100·00 | 100·00 | 100·00 |
| 1941-42 .. | 102·46 | 98·91 | 73·85 | 67·48 |
| 1942-43 .. | 100·92 | 88·36 | 89·71 | 74·41 |
| 1943-44 .. | 101·76 | 91·41 | 94·16 | 91·47 |
| 1944-45 .. | 94·72 | 90·73 | 114·04 | 111·31 |
| 1945-46 .. | 89·64 | 72·35 | 110·48 | 89·22 |
| 1946-47 .. | 91·10 | 72·14 | 109·31 | 96·44 |
| 1947-48 .. | 84·61 | 65·00 | 109·68 | 91·72 |

## APPENDIX IX—Graphs.

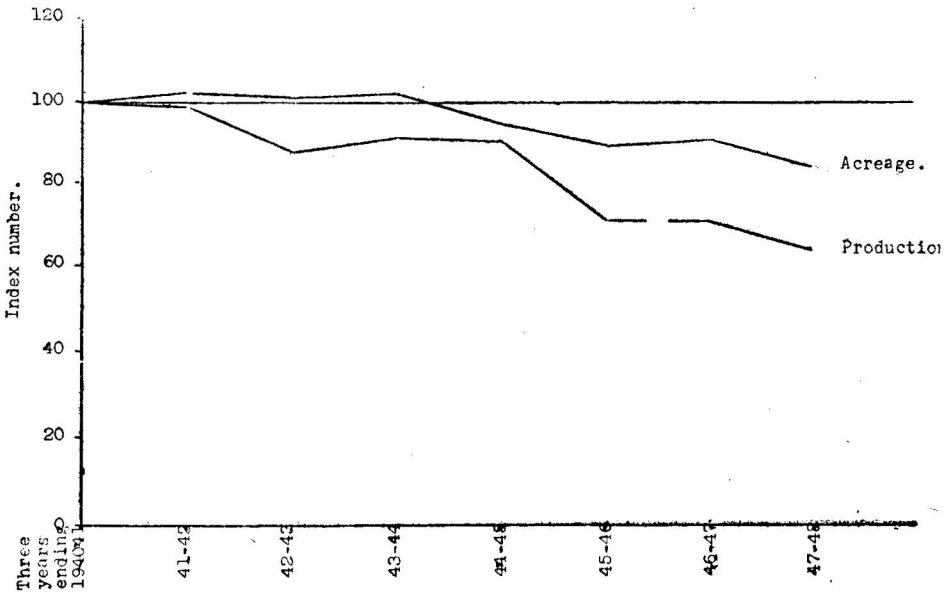
Fluctuations in Area under Food crops.


The Requirements and Availability of food.



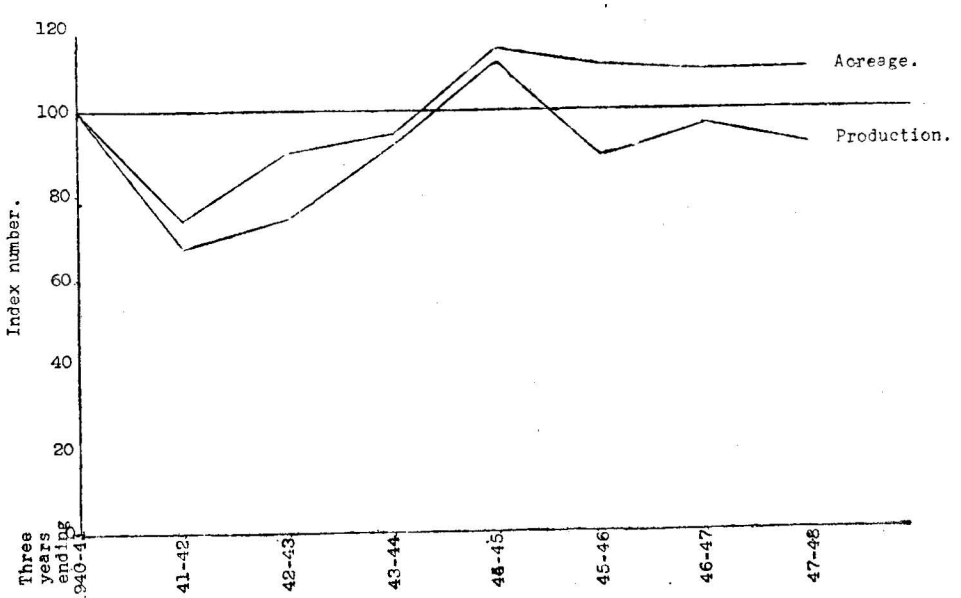
- 38 -

Index numbers of Acreage and production of Millets in the Madras Province with the years 1938-39—1940-41 as base.




- 39 -

Index numbers of Acreage and Production of Groundnut in the Madras Province with the years 1938-39—1940-41 as base.



# 'GROW MORE FOOD' IN MADRAS

*by*

K. G. SIWASWAMI.

Comparing the surplus or deficit income of owners of lands in 1939 and 1945 after deducting costs of cultivation and living expenses from land incomes, the Economic Adviser to the Madras Government says the following :—

"The big landholders (holding over 25 acres) with considerable surplus of their agricultural produce for sale at enhanced prices have acquired the largest surplus income. The second class holding between 5 to 24 acres and getting a surplus of Rs. 121 in 1939 and Rs. 117 in 1945 shows a slight decrease. The surplus of 1939 has been turned into a deficit in 1935 with regard to the third (those holding less than 5 acres) and fifth (agricultural labourers) classes. The greatest deficit is experienced by the tenants in whose case the slight deficit of Rs. 1-9-0 in 1939 has grown to Rs. 44-1-0 in 1945."

The Hon'ble Food Minister of the Government of Madras has said that 75% of the growers of paddy are tenants. Increased costs of cultivation and living since the war have not been relieved in their case by any Governmental measure. On the other hand, the need of procurement has provided in certain areas the rentier owners of lands with a State staff to procure rents as stipulated in lease deeds while there existed an elasticity in rent collection before, according to varying yields. Rents in Madras for irrigated paddy lands range between two-thirds and five-sixths of gross produce, while the present cultivation expenses amount to not less than half of this produce. The Madras Government has met the unavoidable agitation of producer tenants for reduction in rents by the application of the Maintenance of Public Order Act intended in other provinces to quell communal trouble, by wholesale detention of tenants without trial, by offer of police help for harvests with the aid of imported labour and goondas which the previous Adviser Government never permitted, by arresting workers of all groups including the Congress who helped in organising tenants, and by even making distressing and humiliating speeches against the *kisans,* of which the following is a sample:—

"The activities of Kisans had made procurement impossible in many cases. Their creed was "Down with the man who possesses." They would be a dangerous instrument in his hands and if he followed them, he would not get any grain. While he would not hesitate to avail himself of their co-operation, he would not play into their hands or allow them to use Government machinery for their propaganda" (speech of the Hon'ble Minister for Food on 23rd August 1948 at the Y.M.C.A.).

Recently the Premier of the Madras Government has come forward with a thesis that rents amounting to 2|3 and 4|5 of gross produce are fair, that labour cannot be paid a higher wage in agriculture, and that the acute distress among 20 million tenants and labourers was nothing so serious as to require legislation.

The producers of paddy who are mostly tenants know that the adjoining province of Bombay has given to their class substantial relief by fixing rents as not to exceed one-third of the gross produce for dry lands and one-fourth for irrigated lands, land revenue to be paid by the owner and water rate by the tenant.

Not only is the major producer class of paddy conscripted by the Government to slave for the rentiers by the use of police force and detention without trial but the very class whom the Economic Adviser of the Madras Government characterises as 'having acquired the largest surplus income' is pampered with bonus amounting to ten or fifteen per cent of the present price, with a view to inducing them to part with their surpluses. The tenant sees that while he should pay rent even by selling straw and otherwise, his master rentier is rewarded for his hoarding. He sees the repeated announcements of Government of the need for repression, arrests and detention in his case, and of 'discriminatory' use of force, persuasion, appeal to good sense and reason in the case of these rentiers. He sees too that somebody else other than himself is rewarded because cultivation expenses have gone high. He sees further a provincial Food Advisory Board consisted of these 'rentiers' whom the Food Minister calls 'giant producers' but excluding the representatives of the *de facto* producers.

There are again powerful pressure groups, of legislators and Provincial Congress Committees interested in exploiting the food shortage to get a higher price. A higher price will get little benefit for the *de facto* producer as his margin of surplus for sale is little. He wants a reduction in cultivation expense. District Food Committees comprising prominent Congress leaders, and members of the legislatures all cry for a higher price for paddy.

With a view to showing off the bonus policy as helping cultivation, the Government of Madras has devised a method of granting manure instead of cash bonus. This policy has concentrated manure coupons in the hands of absentee land holders employed in service elsewhere and rentier non-cultivators who, being the sellers of surpluses, are alone entitled to these coupons and who are therefore forced to sell them at black market prices to the actual cultivating small owners and tenants.

A higher price may benefit somewhat the owners of lands in dry areas who produce millets as tenancy is comparatively less in these areas but here too the overwhelming majority of producers will gain little as compared with rentiers holding large areas.

Production rests on the efficiency of the agricultural labourer. But this labourer is a serf tied to the land where he is a dependent farm servant. He is in eternal debt to his landholder. He works at a lesser wage for the latter. He cannot go out for work elsewhere unless permitted. His wife and children should work in the farm of his master when required. His pay is indefinable being estimated in cash, in kind, and as various prerequisites, all these varying between one landholder and another. He lives in the site of his master. Unless this labourer is freed from bondage and made to feel a zest in his work by giving him a fair wage and better living conditions and trained in agricultural technique, there is no future for Indian agriculture.

To conclude (1) Grant security of tenure and fix fair rent for the producers who are mostly tenants in the case of paddy. (2) Bring down foodgrain prices to a level which will encourage but not deter cultivation. (3) Reduce cultivation expenses by supplying manure, iron implements and cattle feeds to cultivators (owners and tenants). (4) Abolish agricultural serfdom and pay fair wages for labour.

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## A NOTE ON THE GROW MORE FOOD CAMPAIGN IN THE BOMBAY PROVINCE

*by*

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The average annual production of the principal cereals in the Indian Union during the pre-control period i.e. from 1936-37 to 1940-41 was about 40 million tons and our imports from foreign countries (including what is at present Pakistan) have been estimated at approximately 2 million tons. During the same period, the production of principal cereals in the Bombay Province was 3.1 million tons and imports from areas outside the Bombay Province 0.5 million tons. The population of the Bombay Province represented 6.4% of the population of the Indian Union, whereas in production and imports of the principal cereals, it represented about 8% and 25% respectively. The fact that the Bombay Province is deficit to a larger extent in the matter of foodgrain supply than the Indian Union as a whole, is evident from these figures.

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*N. B.* The views expressed in this note are those of the authors and should not be treated as the views of the Bombay Government.

The post-control position is that the Indian Union produced about 41 million tons of the principal cereals per year (average of 1942-43 to 1945-46). At present our imports are about 3 million tons. The Bombay Province during the same post-control period produced about 3.1 million tons per year; the present imports from outside the Bombay Province are about 0.7 million tons.

The Government of India has been naturally perturbed about the colossal expenditure involved in importing foodgrains from foreign countries and does not like to be in the undesirable situation in which we have to depend for a part of our supply of foodgrains on foreign countries. It has, therefore, set itself the task of at least producing an additional supply of foodgrains more or less equal to the present quantity imported, in as short a period as practicable. The Bombay Government has followed suit and intends to produce an additional quantity of 0.56 million tons of foodgrains per year at the end of the Five Year Plan ending in 1952. The attempts of Governments in this direction are popularly known as the "Grow More Food Campaign."

The Bombay Government has been at the task since about 1944. But it was not until the popular Government had assumed office and studied the situation, that a regular Five-Year-Plan was formulated. Even a brief description of the various schemes comprising the Five-Year-Plan would be beyond the scope of this Note. However, a statement indicating the nature of the schemes and the targets set for each scheme is appended. The Bombay Government has recently published a small pamphlet entitled 'Growing Our Food' * which gives a more detailed description of these schemes.

The Bombay Government enacted the Growth of Foodcrops Act in 1944, the object of which was to compel the cultivator to put a certain minimum proportion of his holding under foodgrain crops (cereals and pulses). By the Act, he is also prevented from putting an area larger than a certain percentage of his holding under cotton and tobacco. The object of the Act is, in short, to compel the cultivator to grow more foodgrains even though, in his opinion, it is not as profitable to him to do so as to grow other crops. The effect of the Growth of Foodcrops Act may be judged from the fact that during 1944-45 to 1946-47 the average area under foodgrains in the Bombay Province rose to 215 lakh acres from the average of 203 lakh acres during the years from 1941-42 to 1943-44. The effect of the Act on the area under cotton in the Bombay Province during the same periods may be seen from the fact that the acreage under cotton was reduced from 33 lakh acres to 13 lakh acres, i.e., a reduction of about 60%. In Central Provinces and Madras,

* Obtainable from the Superintendent, Government Printing and Stationery, Bombay. —Annas 3.

done, we could have got some valuable results this time. Such intensive work should be started at once. Unfortunately, the reorganisation of the Department of Agriculture and the rapid expansion of work has done away with the intensive study of the agricultural practices in the Bombay Province. There is practically no experienced all round Agricultural Officer of a sufficiently high status in any of the agricultural tract, who can claim wide personal experience of the agricultural conditions of the tract. Instead, we have now a number of specialist officers stationed at Headquarters who are expected to advice the whole province from the Headquarters. These specialists have no chance to get in close touch with the local agricultural conditions of any tract as they will not be in constant touch with the practical aspects of any field trials or any agricultural work of the tract. It takes years to know the practical side of agriculture of any tract. These officers simply draw conclusions from the experiences of the much smaller men who are always on the move for propaganda work and many of whom have had no experience of the practical agriculture of the district they are serving. Thus how so clever the specialist may be, he can never be an efficient and all round agriculturist even after years of service at the centre to give sound practical advice to the cultivator of any tract. This is a serious drawback at a time when intensive work is most needed to increase the food supply by the improvement of agriculture and raising the general standard of cultivation. This will be seen after a number of years as it will lead to stagnation then. Such Officers are more likely to be post offices for giving arm-chair advice. What is needed is the most intensive work in the fields if our agriculture is to establish higher standard of farming and produce more food. In every village there are a few cultivators whose farm practices are of a very high standard and unless the Agricultural Officers of higher status study and try out ideas in the light of personal scientific experience of farming, no sound improvement can be suggested. The closure of Government Farms is another great drawback for such trials. It is most unfortunate that most of the higher staff of the Department is made up of the specialists having very limited experience of wider practical aspects of farming as most of the experienced agricultural officers have retired.

This is the result of sudden expansion of the Department and want of foresight in the past for training up the staff for the future. Such serious defects of organisation in addition to the fundamental wrong basis of the reorganisation of the Department which has done away with the divisional officers who can do intensive study of farming of the tract, have resulted into paper work of the Department. Would anybody having practical experience of the work of Revenue or other Departments, suggest centralising all the higher officers at Bombay or at Poona, leaving the work of the administration to the lower district staff like mamlatdars etc. ? No province has

a large part in the proper observance of orders issued by Government in respect of the Grow More Food Campaign.

Sometimes, religious prejudices and social inhibitions prevent the cultivator from enthusiastically taking up a scheme which is *prima facie* beneficial from the point of view of producing more yield. A case in point is the scheme for converting night soil into manure. It has been found that, except where social workers come forward to give their entire time and energy to such schemes, it is not possible to induce the cultivators to take them up.

The proverbial mental make-up of our cultivators, which makes them satisfied with just enough for bare living, is also responsible for some lethargy in the taking up of Grow More Food Schemes enthusiastically. This is more so where the actual cultivator is not the owner of the land but is a tenant paying rent in kind. He is apt to think that, when at least some part of the additional labour he might put in would go to benefit the landlord, he must not worry much about doing any additional labour. Recently, the Bombay Government has passed an Act by which the share of the tenant in the total produce, has been increased from the customary one-half to at least two thirds. There are reports that some of the tenants are prone to relax their efforts on account of their thinking that the two thirds share of the production which can be retained by them would be sufficient for their needs, even if the total production is somewhat less than before. The tendency to work just enough, and no more, to get the bare necessities of life is also noticed in the urban workers, especially, in the unskilled workers. There is greater absenteeism and less total hours per week put in. A similar tendency is not unlikely in the agricultural classes.

It is necessary to point out a serious defect in the estimate of the results of the Grow More Food Campaign, namely, that even the estimates of increased potentialities of production of foodgrains are made on the assumption that the facilities given or the means used for prosecuting a particular scheme are utilised for the purposes for which they are intended. For example, manure is distributed for manuring foodgrain crops, but it is widely reported that it is actually used for cash crops, either by the same cultivator to whom it was given or by his neighbour to whom the manure was sold at a profit. Another example is that of the irrigation facilities intended to be used for growing foodcrops being used for cash crops. A suggestion has been made recently that an independent enquiry should be made about the actual results achieved in the field, as a result of the various Grow More Food Schemes. This is worthwhile being put into practice as a check on official estimates.

There is a fundamental criticism of the short term policy adopted in formulating Grow More Food Schemes. The assumption made that if and when we produce a quantity equivalent to the quantity at present being imported, we would be self-sufficient, is incorrect. It is well-known that

even before World War-II the sum total of local production and imports fell considerably short of the potential demand for foodgrains. This shortage has been variously estimated by different computors. Although the bases for estimating shortages could be challenged and the figures of percentage shortages disputed, there is no doubt that there was an appreciable gap between the potential demand and the actual supply. Otherwise it is difficult to explain why, in spite of nearly doubling of our imports and some increase in local production, there is still such an acute shortage as to require control on distribution for restricting consumption. The increase in population cannot fully account for this phenomenon. What has very probably happened is that whereas before the War the cultivator, especially the tenant, brought into the market or handed over to the landlord a quantity appreciably larger than what he could really spare after keeping enough for his family consumption, he is now able to retain more for his family consumption because of the rise in prices. He can meet his cash requirements, which represent only a part of his cultivation and family expenses, by selling in the market a much smaller quantity of grain. Even a small increase in the proportion of grain retained by him, for example, 10%, would result in a very much higher shortage for the non-producing classes. This is, perhaps, the real explanation of the present acute shortage felt in the country, and if this be so, then the problem of food shortage cannot be considered as of a temporary nature. It cannot be the aim of any Government to bring about once again those conditions under which the cultivator was forced to remain under-nourished. The high rate of increase in population would also tend to increase the requirements of foodgrains continuously. The problem of increasing the production of food would thus seem to be more or less of a permanent nature. If this is admitted, then the question is whether the Governments and the people as a whole, should any longer be led to believe that once the targets under the Grow More Food Campaign are achieved, we would be out of the woods. This does not seem to be desirable. Logically, the approach to the whole problem should be from the point of view of dealing with a long term problem and not a short term problem. If this approach is accepted, many of the Grow More Food Schemes which have been adopted more because they are likely to give results in a short period rather than because they are the most economical or profitable from a long term point of view, would have to be scrapped. Others which have been framed for a short term would have to be put on a long term basis. Policies of Governments should be directed towards bringing about a permanent improvement in agriculture as a whole, giving emphasis on production of more food, but without fixing targets for short periods, if the fixing of such targets is likely to result in wastage of human and material resources.

## STATEMENT ON SCHEMES COMPRISING THE GROW MORE FOOD CAMPAIGN IN THE BOMBAY PROVINCE

(The target to be achieved by 1952 is 560,000 tons more per year.)

I. *Cultivation of Waste Lands:*—The total area of cultivable waste land in the Bombay Province is estimated at 8 lakh acres. It is expected that about 1½ lakh acres would be brought under the plough at the end of the 5 year period, i.e. by 1952. During 1947-48 about 300 acres were cultivated. A survey of 1,65,000 acres of Government waste lands has been sanctioned and is progressing.

II. *Tractor ploughing of weed infested areas:*—The total area infested by deep-rooted weeds is estimated at 6 lakh acres. About 93,000 acres would be deep-ploughed with the aid of tractors every year, when all the tractors ordered are received. In 1947-48 tractor ploughing resulted in an increase in production by about 5,000 tons.

III. *Increase in area due to double cropping:*—The double cropped area, on account of additional irrigation facilities, is expected to increase by 76,000 acres at the end of the Five Year Plan. The increase in the double cropped area during 1947-48 resulted in additional production of 1,000 tons of foodgrains.

IV. *Reclamation of Khar Lands:*—There are about 1 lakh acres of khar lands which have gone out of cultivation due to breaches in the sea bunds. There are another 50,000 acres of coastal lands which could be reclaimed for rice cultivation. During its last session the Bombay Legislature has passed the Khar Lands Improvement Act authorising Government to set up the necessary machinery for doing the work.

V. *Compost Manure:*—It is proposed that by the end of the Five Year Plan, there should be 5 lakh pits dug for the preparation of compost in the rural areas. The production of compost manure from these pits is expected to be about 20 lakh tons. The Municipalities in the Province are expected to produce at least 1 lakh tons of compost manure at the end of 5 years. In 1947-48 the additional production of foodgrains due to the use of compost manure was estimated at 2,000 tons.

VI. *Groundnut Cake and Manure Mixture:*—It is proposed to distribute about 55,000 tons of groundnut cake and about 60,000 tons of manure mixture (containing roughly 50 per cent groundnut cake) for the manuring of foodcrops every year. In 1947-48 about 30,000 tons of additional foodgrains are estimated to have been produced by the use of groundnut cake and manure mixture.

VII. *Increasing the area under irrigation:*—It is proposed to construct 50,000 new wells and repair 10,000 old wells during the Five Year Plan. Up to the 31st March 1948 about 4,300 new wells had been constructed and

4,500 old wells repaired. The additional production by this well irrigation was estimated at 3,000 tons. By the construction of tanks and pacca bandharas, it is proposed to bring under irrigation an additional area of 38,000 acres during the Five Year Plan. Some of the works are progressing. By setting up pumping plants in about 50 places along the rivers, it is proposed to bring under irrigation 1,71,000 acres. During 1947-48 construction on 14 pumping stations was in progress.

VIII. *Distribution of Improved seeds:*—Improved seed is proposed to be distributed at the end of the Five Year Plan to cover the area of about 56 lakh acres, out of the total area under foodgrains of about 213 lakh acres. The increased yield on account of distribution of improved seed during 1947-48 has been estimated at 27,000 tons. On account of the unfavourable season in 1946-47, particularly for the wheat crop, adequate quantity of improved seed could not be procured.

IX. *Plant Protection:*—The additional yield expected on account of prevention and control of pests, diseases and wild animals is an estimate based on the extent of damage done in the absence of control measures. During 1947-48 over 20 lakh acres were sown with Jowar seed which was treated for the prevention of the Smut disease. During the Five Year Plan, it is proposed to establish 400 Gun Clubs in 2,000 villages of the Province which are badly affected by wild animals. In 1947-48 much progress could not be made in this respect on account of the non-availability of arms and ammunition.

X. *Soil Conservation:*—It is proposed to improve during the Five Year Plan 8½ lakh acres of land. The work done up to the 31st March, 1948 is estimated to have yielded an additional production of about 24,000 tons.

The total additional production achieved during 1947-48 was in the neighbourhood of 92,000 tons.

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## NOTES ON THE QUESTION OF DEVELOPMENT OF FOOD SUPPLIES IN BOMBAY PROVINCE

*by*

B. S. PATEL. (RETIRED I. A. S.)

"The Growth Of Food Crops Act" has created certain difficulties and problems for the cultivator of cotton tracts. By asking the cultivator to grow less cotton the rotation of the tract is upset. The labour demand at a particular time has also changed, and this coupled with the effect of changed rotation on the fertility of soil has great deal to do with poor yields of cereals. It is, therefore, essential that the Act should have been followed

up in the field and at least observation on the labour difficulties and fertility aspects of the changes ought to have been taken to plan improvement in future. It is possible to give alternative cropping schemes to suit the different agricultural tracts to enable the cultivator to maintain soil fertility to get the best yields of food crops on the increased area. But, it seems, the Department has remained content by estimating the results in a mechanical manner based on the statistics of the crops sown. It is also possible that poorer areas came under food crops and these factors and others might have been responsible for giving no extra yield of food crops in spite of greater area under them. It was also necessary that the Department of Agriculture should have gone into details and given alternative cropping schemes and taken field observations on their results and at the same time laid out trial plots on the Government farms and in the district on all such modified rotations calculated to maintain fertility to give better results so that comparative results could have been obtained by this time to advocate the most suitable cropping schemes for each tract. This could have created greater confidence in the people on the question of growing more food crops to suit each tract. This requires to be done now with a view to increase areas on food crops.

*Other Grow More Food Schemes:*—Here again the work done is extensive though limited to the supply of irrigation facilities, improved seeds, some manures, and more bulls and cows to certain tracts. But the fundamental aspects of improving crop yields have been more or less neglected. If more irrigation is provided, it is essential that the standard of cultivation should be raised to maintain and improve fertility if we are to get the best results. Similarly, improved seeds also need better fertility to yield more. The supply of cake and sulphate of ammonia can hardly meet a fraction of the demand and therefore it was essential to conserve all the cattle manure and all the crop and village wastes for compost making to increase the organic manure. Practical plans to make compost in villages should be worked out and executed. Steps should be taken to induce the cultivator to plant fuel trees that do not shade the crops and also supply fodder for cattle to save dung and fodder wastes for compost making. The most important items of green manuring and introduction of legumes in the rotation seem to have been altogether left out. This is the most important source of supplying organic matter and nitrogen into the soil to maintain fertility or improve fertility.

It is essential that an experienced Agricultural Officer of wider ability and outlook should go into the details of cropping schemes and methods of cultivation in each agricultural tract and suggest modified croppings and these should be tried out under the guidance of the competent experienced staff. At the same time, the Department should lay out experiments on Government farms to check the results of the country side. If this was

got such an organisation by which staff is centralised. Particularly the agricultural work needs constant personal touch with the field work and the people of the tract if the advice to be given is to be practical and useful. This reorganisation has centralised all authority and initiative in the staff at the centre who have to depend on second hand experience of the District Agricultural Officers who are smaller men and are too busy to think clearly.

Improvement in cultivation is also possible but unfortunately the reorganisation has put the tractor cultivation with the non-agriculturists who are neither expert tractor-men nor agriculturists to know how to get best out of tractors. As a result, tractors have been lying idle and we do not get the best use of the tractors. Here again, committees of laymen are in charge of the dispensation of the use of tractors. It will be interesting to get the information of the actual number of working days and the actual work done by each tractor. How can an engineer in charge know the best time to use the tractor for different tracts ? It is time to examine the whole working of the scheme of Grow More Food in the light of these observations by an independent experienced agricultural officer.

As regards distribution of manures, I may observe that this work is done mechanically and no effort is made to follow up the manure to know exactly what kind of land and crops are treated with the manure. The application of cakes and sulphate of ammonia may give better results if there is sufficient organic matter in the soil and in fact, half the amount of nitrogen per acre may even give better results if manure is applied in combination with green manuring or legume cropping, better and cleaner cultivation. Here again, no field observations have been taken of the results of use of these manures.

*Improved Seeds:*—I may suggest that some of the improved seeds are finer in quality but it is possible to get better yield with coarser varieties, particularly in case of rice. Better varieties have not been always better in food value and therefore it is worthwhile to study this aspect to get higher yield. In Kaira District, lot of people have grown coarse rice by drilling it in ordinary soil and have got very high yields. So this matter also requires to be tried out. As regards potato cultivation I may observe that seeds should be distributed according to the seasonal requirements for planning. If the seed is not given in time for planting the crop will fail. There are different seasonal limits for various potato tracts and these should be noted for various supply of seeds and manures for potato cultivation. I understand that this has not been done. Under the Grow More Food Scheme the supply of Crude Oil requires to be specially cared for. People did not get oil and manure at a critical time and so the crop yield came to less than half in the case of wheat. This again, is a practical question which requires the

attention of the Divisional Agricultural Officers of the higher status. At present, priority for crude oil should be given for agricultural purposes over all other needs of crude oil. Even the transport should be guaranteed. Government should not remain content with the distribution of what is on hand but plan for more supply and quicker and timely distribution for food production by planning the curtailment of all new projects that may demand Crude Oil for other uses. Perhaps this requires planning on all-India basis.

In this connection, I may observe that many sugar factories in Bombay Province have stopped the practice of green manuring and it is responsible for reducing the yield of cane per acre. As the factories are required to grow food crops, they do not grow *san* for green manuring. As a result the yield of not only cane but also food crops like rabi juwar and wheat has fallen for want of organic manure. It will be interesting to know the area under food crops and the average acre yield of these. I think all irrigated areas under food or cane should be compulsorily under green manuring before they are allotted any cake or sulphate of ammonia. This will increase the yield of cane and food crops and will help to maintain the fertility of land.

The Bombay Province has added to it many small states in Gujarat, Deccan and Karnatak. Similarly other Provinces too have merged the states with them. These areas are specially backward in their agricultural development. There are no good roads and they have large areas of good waste land. For example, Rajpipla State has such areas which can be easily developed to produce more food by immediate planning of construction of all-weather roads and agricultural development.

*Development of Dairying and Cattle Breeding:*—I am afraid the plans proposed are of routine type as in crop production and show no vision of wider development. If real progress is to be made, the tracts that are well known for cattle breeding and dairying should be tackled at once for greater development. Gujarat is a well known dairy tract and no effort is made to develop it further. There is immense scope for development of fodder crops, silage making, improvement of milch cattle and marketing of milk and purchase of requirements on co-operative lines. In 10 to 15 years the tract can be made to produce double the quantity of dairy produce if the work is planned on proper lines and is linked up with the supply of milk for Bombay and other cities. The tract is inhabited by progressive farmers having good deal of economic sense and adventurous spirit to take full advantage of any new plan of development that may be shown to them. But the Government Departments seem to be absolutely without any outlook on the subject. If this tract is given irrigation facilities by conserving the waters of all the rivers, there will be still greater scope for development of well and canal irrigation, which can easily increase the production of essential foods four fold for the benefit of the whole province and other

parts of India. But the schemes now proposed are very minor schemes of dairy development here and there and it is a question if these schemes will be successfully run on their own. Take the scheme of milk supply of Bombay City. Bombay has at present about 60,000 animals in milk. The need of hay for these animals alone comes to about 30 to 35 crores of lbs. a year. The B.B.C.I. Rly. and other lines just have this production of hay in good years. In bad years like this when the whole of Gujarat is threatened with starvation and the destruction of the valuable dairy and plough cattle, no hay will be available for famine relief. The present plan of Bombay Milk Department to establish 60,000 cattle in the three colonies will usurp and monopolise all the hay available and no reserve will be left, for famine conditions or needs of Gujarat. The agricultural development is done piece meal to get such dangerous results. The result is going to be most disastrous for Bombay and the Western India. Manure will not be fully utilised for the development of fodder which is just sufficient for 60,000 cattle. Bombay thus monopolises all the hay that is available as it has the ability to pay for the milk trade and therefore the availability of hay for emergency requirements of Gujarat will be nil. This aspect of the question has not received any attention in planning the colony system of the milk production for Bombay. If milk is drawn from the Gujarat and if the Bombay dairies are scattered over grass areas on B.B.C.I. Rly., there will be greater improvement of fodder crops by using all the manure of the dairy herd of 60,000 and the cost involved will be much less compared with what is to be spent on colonies. This alone can increase the fodder yield by 100% and thus there will be surplus fodder for emergency like the present for Gujarat and Sourashtra, loss of whose cattle will affect the food supply of the whole of Western India materially.

The centralisation of cattle in Bombay and Palghar on a few thousand acres can only improve a few thousand acres of grassland and not a vast area of 1 or 1½ lakhs of acres. Such a big centralisation of dairy cattle for Bombay has very little advantage from the point of production of milk. It also monopolises the cattle feeds of India without any decrease in the cost of production of milk or decrease in the loss of young stock and dry stock. Milk *cum* Bull production schemes should be based on the actual demand and cost of rearing bulls for breeding.

*Great Scope for the Development of Grass Areas on B.B.C.I. Rly.*

The Dairy Development Department or Bombay Milk Department and Department of Agriculture have not even thought of the ways and means of studying (i) the problem of fodder supply of Bombay cattle, (ii) the types of grasses required to be studied to select better grasses and legumes for the tract to increase quantity and improve the quality of hay (iii) the best method of growing fodder for green feeding and silage making (iv) comparative study of the possibility of improving grasses by establishing dairy farms on

the vast areas compared with the colonies for Bombay Milk Trade (v) intensive development of Bombay Milk supply on co-operative lines from Kaira District in the interest of Bombay and Upcountry by giving the full benefit of the price charged from the consumer to the producer to induce him to produce better quality and larger quantity of milk in Kaira.

To summarise, I would suggest that the Department of Agriculture should be so organised that each agricultural and socio-economic tract should be in charge of an experienced agricultural officer of higher status knowing the tract and the farming practices thoroughly. He may be assisted by the present district agricultural officers. These officers should plan the alternative rotations by including legumes in rotation and green manuring on widest scale to maintain and improve soil fertility.

The cattle manure should be fully conserved and all the village waste should be centrally collected and made into compost. Cultivation should be improved by the timely use of the tractor to control weeds and conserve rain water. All irrigated areas under canal should be compulsorily under green manuring area in 2 or 3 years and only selected areas under green manuring should be supplied with cake and artificials to get best results.

The Agricultural Staff should follow up the modified rotations and manuring by laying out field experiments in the cultivator's fields and on farms to check the results.

Wherever possible, in flat areas suitable small bunds should be constructed by the tractors to conserve rain water into the soil.

Fuel trees should be planted to supply fodder and fuel to conserve manure.

State areas should be opened up by urgent and immediate construction of all-weather roads to enable the use of tractors and get more labour settled for farming in waste lands.

Planning of milk production for cities like Bombay should be complete and should be on comprehensive basis more or less under one department to avoid commitment by piece meal planning without considering its effect on the farming of the whole province. The milk *cum* bulls farms should be run with the object of supplying the known demand for the bulls of the type required for breeding in the Province to avoid wasting money on rearing something for which there will be no demand.

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## PRODUCE AND PROSPER

*by*

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The year 1942 is of special significance in the history of India. The World War was gradually gripping her in its tentacles. Japan's entry into

the arena followed by her spectacular victories in Burma brought about conditions which ruthlessly exposed the fundamental shortcomings of Indian agriculture. The Government of India stood bewildered. Confronted with the spectre of a food crisis of an unusual character they launched the now famous Grow More Food campaign. As usual with the then Government, a Food-Grains Policy Committee was appointed under the Chairmanship of Dr. Gregory, the well-known British economist. The economists, scientists, agronomists, publicists and agricultural experts of India were not slow in coming up with their plans and schemes. Meantime the rot that set in, in 1942, began to worsen. In the year following, the Great Bengal Famine came as a rude shock.

The battle of freedom was fought and won. But it seems we are as far as ever from the economic fruits of the victory. The problems of food, cloth, shelter and education are as baffling as ever. The ills that the last World War brought in its train such as inflation, soaring prices and black market seem to have struck root in the soil. They have well-nigh become permanent features of our economic life. The creation of a new Dominion by the division of an economically indivisible unit has brought in new complications of a far-reaching character. The influx of millions of refugees from across India's borders which in Bengal is only a one way traffic has created an appalling situation. It is enough to overwhelm any State not to speak of a new born State like India.

India has to grapple with these problems alone and in her own way. It will be futile as well as foolish on her part to expect others to come to her succour. Every nation is self-centred. Every country which can afford to do it, is interested in enriching itself at the cost of others. Even in the midst of this conflict of self-interest, however, there is a sinister unity. There is the virile combination of exploiting nations against the exploited. But it is an irony of fate that there is hardly any unity among the exploited nations to stand against the exploiters. If any nation has the hardihood to do it, she will find herself deserted even by those whose self-interest should have been a guarantee of their support. The Paris Session of the U.N.O. is a glaring example of this.

India is an ancient country and at one time flowed with milk and honey. Her wealth attracted the foreign trader and invader to her rich soils. This wealth was the product of the old economic order. Its salient feature was the existence of self-sufficing, flourishing village communities where everyone had his work allotted and justice and security were assured by the village panchayat. In this economy, agriculture was predominant. It was the primary means of subsistence and round it grew the glorious civilisation of India. "Water is the life-giving power and food is that which gives the thinking faculty to man. The man who gives food gives life." This is the

message of our own Upanishads. The great sages and even kings like the great Janaka used to till the soil, clear the jungles and rear animals. Naturally agriculture was a very coveted profession in India of the past and in social gradation the agriculturist was on the top of all who had to live by labour and he was reckoned as one of the "twice-born" classes.

The Muslims came and conquered India. They ruled for about 600 years. Agriculture maintained its position in the social and economic set-up of their times. That India was prosperous in agriculture during Moghul rule cannot be denied today. This was possible because the Muslim invader adopted India as his home and shared the joys and sorrows of the conquered people.

With the establishment of Pax Britannica, the economy of the country underwent a rapid change for the worse. The Britishers came as aliens and preferred to remain as such till they had to quit our soil. India was no more than a precious appanage to their far-flung empire. All that really mattered with them was the prosperity of the British Isles and the welfare of their countrymen. Naturally, they attuned their economic and administrative policies to that central idea and in this they succeeded so well that when freedom came to her in 1947, India was lying prostrate like a patient who was the despair of her physician. The glory that was India was a forgotten past.

The task before the new administrators is therefore complex and vast but they are determined to take the bull by the horn. There is however a considerable difference of opinion as to how best to do so. This conference of experts, it is hoped, will discuss the matter in all its bearings and give a right lead to those in the field.

The Grow More Food scheme is six years old. Something has undoubtedly been achieved during this period but when the immensity of the problem is recognised the results appear too disappointing. During the British regime, agriculture was reduced to serfdom and it was made subservient to British overseas trade and commerce. Self-sufficient village community was broken up. Administration was centralised and local autonomy disappeared. The people became individualistic in their outlook. The revolution of transport fostered this process of disintegration. The remarkable result was the destruction of the self-sufficing character of the village and deterioration of the status of the peasants. Eclipse of agriculture as a noble profession was complete. The administration was alien to the genius of our people and during the hundred and fifty years of British rule the gulf between the villager and the ruler, the village and the centre of administration became too wide to be bridged.

Since 1942, too much has been written on this subject and I wonder if anything new can yet be said on a subject so vital to us. I can do no better than to recapitulate the salient points.

Although agriculture is India's principal industry it is singularly backward in character. The yield of practically all principal crops is lower when compared to yields in Great Britain, U.S.A. and U.S.S.R. and even in Japan China and Indonesia and Siam. The method of cultivation is primitive. Science and research are unknown to the cultivator. The bullock cart and the wooden plough, the twin legacies of ancient India still hold the field. As agriculture ceased to be remunerative and pressure of population on the land increased due to land laws, laws of inheritance, attachment of land and absence of alternative occupation in the village, agricultural holdings became so uneconomic as to render the application of modern improvements well-nigh impossible. The army of landless agricultural labourers was ever on the increase. Due to loss of interest in the land, cultivable lands remained fallow and gradually turned into swamps and ravines. Produce from land began to suffer in quantity and quality. The net result was grinding poverty.

Within the existing framework of economic society, the changes in agriculture, which are within the range of practical politics, include measures like reclamation of waste lands, better use of manures and improved seeds, extension of irrigation and river valley projects, control of crop pests and diseases, rotation of crops, use of artificial fertilisers and better implements of cultivation. To this catalogue we may add prevention of soil erosion and soil exhaustion, timely cultural operations, increased intensity of cropping, dovetailing of the arable and animal husbandries into one mixed farming system, introduction of large-scale farming and if possible collective farming on the Russian model. This list is not exhaustive but only indicates many of the important recipes suggested so far. How far the results achieved are commensurate with the efforts for execution of the above-mentioned proposals, I leave that to your judgment.

No new approach to this problem is likely to succeed unless it takes note of the fact that the villager must be made conscious of his own needs and must exert himself to his utmost to remove them. He must be made to understand that it is beyond the power of the State to help him unless he helps himself. As soon as the villager gets interested and comes forward as he did in the political sphere, our work will become easy. We have only to persuade our innumerable villages to work towards self-sufficiency in production and consumption. The guiding principle should be to bring anyhow increasing quantities of land under cultivation, to increase them yet more and to make them yield a bit more. When there is land and there are men with a will and purpose, no reasoning can justify lack of food. It has been estimated that if the existing lands under cultivation in India could be made to yield half a maund of grains more per acre, India can feed her people without having to beg from the World Food Council. She can also save more than 100 crores of rupees every year and utilise this amount in

rebuilding and renovating our villages and rehabilitating the men behind the plough.

Food in this context of Grow More Food includes besides foodgrains, fruits, vegetables, fish, meat and eggs, milk and milk products and honey. Out task is, therefore, to increase all these items of our dietary in quantity and quality. This task will be easier of accomplishment if the villagers can be made to understand the value of co-operative enterprise in the real sense of the term. A chain of co-operative multi-purpose societies, properly organised and wisely controlled, can achieve the results we seek. The causes which might have contributed to the failure of many co-operative enterprises in different parts of the country need not be recounted here. Co-operative movement was so long foisted from above on a people who could little understand its fundamental principles. But in the present constitutional set up the village panchayat as basis of self-government has been accepted. Human considerations were too long carefully excluded from the economic sphere. As Mr. T. Prakasam declared in the Constituent Assembly, village panchayats would solve India's economic as well as political problems.

The objective of the multi-purpose society would be to effect all round improvement of the village and the villager. We may call it community co-operative. As I envisage it, it will include two to three villages in its area of membership. If necessary the present village areas will have to be changed for organisational facility. Usually the maximum number of families for such a society may be five hundred. It is expected that all families of the villages would voluntarily become members. The State can help in this process by offering privileges which the people can only enjoy by attaching themselves to a co-operative.

The Panchayats of the villages, two or three as the case may be, will form the committee of management of the community co-operative. The functions of the village panchayats will be (a) judicial, (b) administrative, (c) economic. The economic functions of the panchayats will have to be discharged through the agency of the community co-operative. When these societies undertake economic functions, they will strike deeper roots. They become powerful agencies for reform and reconstruction. Their activities will be vigilantly watched by the villagers and chances of corruption may be far less. To start with, an experiment may be made in a narrow sector which may be widened as experience grows. But as a long-range plan the scheme must embrace the entire countryside.

Selection of the panchayats will have to be made by the majority vote of all villagers. All adults, men and women above the age of 18 should participate in the voting. The chairman of the Panchayats should be elected not by the majority votes of the panchayats but by the majority votes of the villagers.

The committee of management of the community co-operative should work on cabinet basis. Functional distribution of work is to be arranged by the Chairmen of panchayats. Chairman of the co-operative committee will be elected by the majority votes of the panchayats sitting together. The panchayats will have advisory committees to assist them. It is hoped there will be no dearth of men for such public service. It may serve as the training ground for the future leaders and legislators of the country.

The community society will have a furnished office in a centrally situated place. The State should provide the capital cost required for this purpose. If the recommendations of the Agrarian Commission are to be implemented in the years or months to come, such offices will have to be set up by each government for the realisation of rent from the tenants. It is quite in the fitness of things that this function of collecting rent in kind or cash should be entrusted to these community co-operatives. If this is done, the small co-operatives will become powerful economic units.

A trained Agricultural Inspector appointed by government should be attached to each community co-operative. He will work as a liaison officer between the local authority and the villagers. The Co-operative Department will also have its officers, one over every ten societies to guide and supervise. Best talents of the country should be detailed for such work and best prospects should be ensured to them. If necessary, a separate civil service will have to be set up for carying out this weighty and difficult task. I suggest that officers of the Agriculture, including Forest, Fisheries and Veterinary, Food, Co-operative, Cottage Industries, Irrigation and Public Health, Agricultural Engineering, Soil Research and Development departments should man this Civil Service. Change in our idea of values was never more wanted than now. This is an essential part of this scheme. No more tinkering with our vital national problems can be tolerated.

The functions which the community co-operative will have to take up and sucessfully carry out are broadly these.

(a) Intensive propaganda by the panchayats among the villagers. The local governmental staff will assist by explaining the up-to-date improvements devised by science to aid agriculture. This is to be arranged through lectures, lantern slides and information films, or through model farms and nurseries. Each multi-purpose community society should organise one nursery in its area of operation. It will also have a seed store attached to its office where improved local and governmental seeds, green manures, locally prepared compost manures, artificial fertilisers should be kept for sale and free distribution.

(b) The society should also arrange for seasonal and long term loans to agriculturists for current agricultural operations and for effecting perma-

nent improvements of land. The society should be made the sole agency for advancing loans to the rural people. The old overdues of the members of co-operative societies should be gradually written off if necessary out of our sterling resources.

(c) The society should arrange for supply of good milch cattle, bullocks, and selected poultry to the villagers. It should be seen that the eggs, goats, ducks supplied by the society in the beginning are not consumed but are multiplied. Provision for allowing kind bonus and certificates of honour to successful cultivators should be made.

(d) The committee will take up survey of all available lands in the area of the society. Then arrangement for proper utilisation of cultivated, culturable waste, fallow, forest and water-logged lands should be made. Waste and fallow lands should be resettled to the society. This will be easy when permanent settlement and zamindary system will be abolished. The panchayats will see that cultivated lands are properly manured and suitable crops are grown on them. They may have to be armed with statutory powers for restriction and rotation of crops. In short, the society should be made responsible for proper utilisation of land, conservation of soil and judicious crop planning. They should also reclaim waste lands by afforestation of a part where necessary and by cultivation of food and non-food crops on other lands according to soil.

(e) The society after arranging for increased production and maximum use of land will proceed to make marketing facilities available to all. It is desirable that all villagers should dispose of their saleable surplus through their own society. The committee of the society will have powers to cordon off their areas and to decide which products should go out and which should come in from outside its area. The society must have all guidance from Government but they will make their own plans for improvement and carry them out. The local government may have three nominees in the committee of management of the society and may also have powers of dissolution and then invite verdict of the villagers.

I trust such societies will not take long in becoming self-sufficient. Their working capital will be found from shares contributed in kind on the basis of ploughs held by each villager, deposits from members, commission received from government for working as its agent, subsidy and grants from state and profits earned by the society for much of its other work. Within the next 5 years, the financial burden of the state may be substantially reduced.

The hierarchy of the societies will be as follows :

i. Provincial Agricultural Corporation.
ii. District Multi-purpose Co-operative.
iii. Subdivisional Multi-purpose Co-operative.

iv. Thana Multi-purpose Co-operative.
v. Community Multi-purpose Co-operative.

Shares of the Provincial Corporation will be allotted to Reserve Bank (50 p.c.), Co-operative societies (25 p.c.) and to individuals (25 p.c.). After 10 years, the individual shares will be taken over by the Co-operative societies. Details of relationship between these organisations are easy to work out.

If this scheme is accepted the entire activity of each Provincial Government would be geared to the promotion of an integrated co-operative enterprise between the Government and the people. The Central and Provincial Governments should work as friend and guide. Let them bring science to the door of the villager, provide him with security through State Insurance of Crop Scheme. The purpose for which the co-operative movement stands would seem more efficiently fulfilled if it is engaged to underwrite the fruit of the cultivator's toil. Through the net-work of societies, the risk could be spread all over the country. Benefits of insurance should be given to the more numerous section of the community whose wealth is in its fields.

The loan from the International Monetary Fund and the expert knowledge of the U. N. Delegation expected shortly in India are very welcome as these may accelerate our progress towards solution of the present economic malaise. But let us not forget that Victory begins at home. Let us hurl no threat "Produce or Perish" but offer a homely counsel "Produce and Prosper."

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## FOOD POSITION IN HYDERABAD STATE WITH SPECIAL REFERENCE TO THE GROW MORE FOOD CAMPAIGN

*by*

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### *I. The pre-war position*

During the pre-war days Hyderabad was annually producing about 4,11,000 tons of rice, 1,71,500 tons of wheat, 13,92,400 tons of *jowar*, 1,07,400 tons *bajra* and 1,50,000 tons millets. Thus the total production of food grains used to be about 22,32,300 tons. Then she was importing about 80,000 tons of rice and 100,000 tons of wheat. As regards *jowar, bajra* and miscellaneous food grains, she was in a favourable position being an exporting State. The exports used to be about 727,000 tons. Ultimately, the total available food grains may be taken as 23,40,300 tons. It should, however, be

remembered that the export and import figures are far from reliable because as every one knows there is a great deal of smuggling across the huge land frontiers of Hyderabad. Taking the figures for what they are worth, let us suppose that all the available food was utilised during the year without taking into consideration what may have been carried over for next year, for even if there was a carry-over, the previous year's balance may have certainly been utilised during the current year. Then let us also suppose that the available food was sufficient for the population of 1,63,38,534 (1940 census), although it falls much below the nutritional requirements. The purpose of giving these figures here is to help evaluating the situation in the post-war period.

### *II. Grow more food campaign, 1942-47*

Since the out-break of the second World War, the shortage of food grains was acutely felt all over the country as the usual imports were not forthcoming. To minimise the hardship, however, the system of rationing was introduced for an equitable distribution to consumers. Alongside with this effort, the Grow More Food Campaign was started in 1942 to increase internal production by:—

(i) Increasing the yield of existing areas of food grains through the use of improved seed, manures and fertilizers, extensive irrigation facilities, and improved methods of cultivation;

(ii) Partial replacement of the non-food crops with food crops; and

(iii) utilization of culturable waste lands for food production.

#### *Concession to cultivators.*

To make the drive a success, certain concession were granted by the Government to the cultivators:—

(i) *Taccavi* loans were sanctioned free of interest for one year in the first year of the Campaign.

(ii) Improved varieties of seed were distributed at a concession of 25 per cent in price in 1942.

(iii) Cotton growers were given a remission of 50 per cent in land revenue in 1942 for such of their lands as were switched over from cotton to food and fodder crops. In the following year, a subsidy of Rs. 2 per acre was given for the area planted with food crops in place of cotton.

(iv) *Taluqdars* were authorised to give culturable waste lands for a period of one to three years at a concession of 50 per cent in the land revenue, provided the lands were used for food production. The same concessions were made applicable to *Siwai-Jamabandi* lands and the levy of penalty rates was waived.

(v) With a view to encourage the cultivation of lightly irrigated food crops under canals a remission of 50 per cent in land revenue and water rates was given in respect of wheat and 25 per cent in regard to *jowar*.

(vi) The supply of groundnut cake was made at reduced price by special arrangement with the Hyderabad State Oil-Millowners' Association.

(vii) Supplies of Ammonium Sulphate were made in 1944-45 at half of the landed port price.

*Taccavi Loans*

Most of the sales of seeds, manures and insecticides were made on *taccavi* system. The amounts provided by the Government for the purchase and distribution of seed and manures are as follows:—

| Year. | Amount in lacs of rupees. |
|---|---|
| 1942-43 | 30.20 |
| 1943-44 | 30.20 |
| 1944-45 | 32.50 |
| 1945-46 | 50.00 |
| 1946-47 | 79.33 |
| Total | 222.23 |

As against the sanctioned *tacaavi* amount of Rs. 222,23 lacs for the 5 years ending 1946-47, the total cost of the taccavi actually given to the ryots during the same period was only Rs. 115.53 lacs. Due to difficulties attending the transport and storage of seeds and manures, and due to the various Governmental restrictions placed on the purchase and movement of food grains during the War, the full financial provision made for *taccavi* in the annual budgets could not be utilized.

1. INCREASING THE YIELD OF EXISTING AREAS

*(a) By Seed Distribution*

The quantities of seeds of various crops distributed to cultivators on cash or *taccavi* and the areas covered by them are shown in statement No. 1.

Starting with a distribution of about 36 lac lbs. covering an area of 76,179 acres in 1942-43, considerable progress was made in the second year of the scheme when about 108 lbs. of seed was distributed for an area of 6.19 lacs of acres. This progress was maintained in the following years with but slight fluctuations.

The increased production resulting from the distribution of improved seed is as follows:—

| S. No. | Year | Quantity of seed distributed | Area covered | Estimated increase in production | Remarks |
|---|---|---|---|---|---|
| 1. | 1942-43 .. | 35,88,296 | 76,179 | 850 | |
| 2. | 1943-44 .. | 1,07,91,579 | 6,18,896 | 6,907 | |
| 3. | 1944-45 .. | 93,75,430 | 3,38,061 | 4,000 | |
| | | | | 1,700 | Potatoes |
| 4. | 1945-46 .. | 1,56,52,320 | 8,36,925* | 18,370 | |
| | | | | 2,770 | Potatoes |
| 5. | 1946-47 .. | 1,03,54,928 | 5,38,162 | 13,089 | |
| | | | | 1,070 | Potatoes |

*This relatively high figure is due to the change made in the period of reporting from the calendar year to the agricultural year.

(b) *By Distribution of Manures*

In the first two years of the scheme, groundnut cake alone was distributed. In the following years, chemical fertilizers, bonemeal, and compost prepared from town refuse were also made available to the cultivators. The work of composting town refuse was carried out in 35 Municipalities and Town Committees under the supervision of the Biochemist of the Agriculture Department.

The quantities of various manures distributed as well as the acres covered by them are given in statement No. 1. The increased production resulting from the use of manures is shown below:—

| S. No. | Year | Quantity of manure distributed | Area covered | Estimated increase in production of food grains |
|---|---|---|---|---|
| | | Tons. | Acres | Tons |
| 1. | 1942-43 .. .. | 4,268 | 21,417 | 2,868 |
| 2. | 1943-44 .. .. | 1,188 | 14,394 | 1,928 |
| 3. | 1944-45 .. .. | 21,248 | 82,480 | 12,000 |
| 4. | 1945-46 .. .. | 37,220 | 1,49,497 | 14,400 |
| 5. | 1946-47 .. .. | 43,154 | 1,86,537 | 24,983 |

It will be seen that a steady progress has been maintained in the distribution of manures.

In addition to the manures, Sulphur powder was distributed for application to *jowar* seed before sowing as a prevention against the Smut disease, which normally reduces the yield of the *jowar* crop by about 10 per cent.

The extra production of grain resulting from this measure is indicated below:—

| S. No. | Year | Quantity of Sulphur powder distributed | Area covered | Estimated extra production of grains |
|---|---|---|---|---|
| | | Lbs. | Acres. | Tons. |
| 1. | 1945-46 .. .. | 2,240 | 36,000 | 1,600 |
| 2. | 1946-47 .. .. | 8,016 | 5,13,100 | 5,726 |

(c) *By Irrigation Facilities*

(i) The cultivation of paddy under the Dindi Project was taken up for the first time in 1944-45. Nearly 2,000 acres were planted in the *tabi* season. Similarly, about 55,000 acres were irrigated and sown with paddy in the same year under 810 tanks that had been repaired in the previous year. In Kotgir area, under the Nizamsagar project, the cultivation of wheat as a lightly irrigated crop was extended and 750 acres were sown. Similarly, 500 acres were sown under lightly irrigated *rabi jowar*. The additional production of food grains on account of these measures was 20,600 tons of paddy, 180 tons of wheat and 170 tons of *jowar*.

(ii) In 1945-46, the cultivation of rice under the Dindi Project was extended to 6,400 acres. The cultivation of wheat and *jowar* under light irrigation under the Nizamsagar Project was, however, only 600 acres due to lack of funds and staff as the Light Irrigation Scheme was wound up.

2. EXTENSION OF AREA UNDER FOOD CROPS

Statement No. 2 gives estimates of area and outturn of the principal food and cash crops of the State for the period from 1943-44 to 1947-48. Corresponding pre-War figures for the year 1939 are also given for comparison. The following are the principal indications in respect of area under different crops:—

(a) *Rice:* The area under this crop has increased in comparison with the pre-War acreage, and the fluctuations in successive years are not of a violent nature. The increase in area is due to the construction of new irrigation reservoirs like Dindi, Chandrasagar etc., and the repair of numerous old tanks as part of Government's Grow More Food Campaign. Rice is an irrigated crop and, therefore, its area in successive years is not affected by the nature of monsoon rains to the same extent as other crops which are entirely rainfed. Furthermore, except for sugarcane there is no more remunerative cash crop which could take its place in paddy fields. It is for these reasons that there are no violent fluctuations in the area of rice in successive years. The Agricultural Department's efforts to increase the yield of this crop by distributing improved seeds and manure had only a limited effect because the largest area for which improved seeds and manures

were distributed was only 1.86 lac acres as against a total area of 12 to 14 lacs of acres under the crop.

(b) *Jowar, Bajra, Wheat and Maize:* The area under these crops decreased continuously. The Agriculture Department distributed seed of wheat and *jowar* for 3 to 7 lacs of acres in different areas, but this acreage represented only a fraction (about 8 to 10 per cent) of the total area under these two crops. The reduction of area cannot be ascribed to the failure of the 'Grow More Food Campaign.' The reasons for the decline must be sought elsewhere. Extensive enquiries from cultivators both large and small go to show that some of the principal reasons for this continuous drop in area were the following:—

(i) The fixation of relatively low ceiling prices for important food grains,

(ii) compulsory contribution of levy grains at prices much below the ceilings,

(iii) restrictions on the free movements and sales of some of the food grains and

(iv) unfavourable rains in some years.

Untimely rains and hail-storms together with the attacks of insect pests and plant diseases (e.g. *rust* of wheat in 1946-47) caused an appreciable loss in yield also. The low prices fixed for both levy and free sales, and the restrictions imposed on the movement and sale of the principal food crops were the greatest discouraging factors. As against the low prices of food grains, the prices of cultivators' own necessities like implements, cattle, cloth, sugar, kerosene etc., had increased tremendously. Similarly, the prices of pulses, groundnut and some of the other cash crops experienced a marked rise. The net result of the Price Control Policy in respect of food grains was that it almost nullified the Government's efforts to grow more food. Even the restrictions imposed under the Cash Crop Restriction Regulation failed to check the decline. The cultivators had absolutely no financial incentive to increase the area of food crops. It is often pointed out both in the States and the Indian Provinces that the Grow More Food Campaign in England was highly successful where as that in India was a virtual failure. This criticism, however, forgets one thing, namely, that the price policies of Indian States and Provinces were totally opposed to the policy followed by the British Government. In England, farmers were granted decent subsidies for every bushel of wheat they produced in the country. The result of this financial encouragement was that whereas before the War England used to produce food for only 33 per cent of its population, during the War it increased its production to meet the food needs of 69 to 70 per cent of its people.

(c) *Pulses and Gram:* The area under these two crops increased continuously. This seems to be due to:—

(i) great demand for pulses for export,

(ii) the remunerative level of prices,

(iii) absence of restrictions on area under them and

(iv) favourable sowing rains for them in some years.

(d) *Groundnut:* The area under groundnut increased from 16.2 lac in 1939 to 31.1 lac acres in 1943-44 and fell thereafter to about 26 lac acres in 1944-45 and to about 20.3 lacs in 1947-48. The reasons given for the increase of area under pulses and gram apply equally to the area under groundnut. The large decrease in 1947-48 season seems to be due to the heavy penalty imposed in 1947 on the growing of this crop on areas in excess of the limit prescribed for cash crops under the Cash Crop Restriction Regulation.

(e) *Castor:* The area under this crop remained more or less stationary. Castor is grown on very poor soils, which are generally not fit for the cultivation of remunerative food crops.

(f) *Linseed and Sesamum:* The area under these two oilseeds has increased without a break, showing an increase of about 50 per cent over the pre-War acreage. Here again, the rise in prices seems to be the primary reason for increase in area.

(g) *Cotton:* Except for the year 1943-44, the area under cotton has been stationary at about 20 lacs of acres, which is only four-sevenths of the pre-War acreage. The reduction in cotton area has been brought about intentionally by a systematic effort as part of the Government of India's cotton policy. As a result of the entry of Japan into War, the short staple cotton became a drag on the market. In view of this, under the lead of the Government of India, the Provinces and States made a very special effort to curtail the area under this particular type of cotton. However, it is unfortunate that due to reasons stated above, the area so released was planted largely with pulses, groundnut, linseed and sesamum and not with food crops. The cultivator is very shrewd and knows which side of his bread is buttered.

(h) *Sugarcane:* The area under this crop increased uninterruptedly. As compared with 31,483 acres in the year 1939, the area under sugarcane in 1947-48 was 1,27,594 acres. This marked expansion in the cultivation of this crop is ascribed, firstly, to the rise in the prices of both white sugar and jaggery and, secondly, to the constantly rising standard of living of the population. Not only the profits from the growing of sugarcane have enhanced, but also the consumption of sugar has increased tremendously.

From the above analysis of fluctuations in the annual area of food and cash crops in the past five years, it is evident that the 'Grow More Food Campaign' and the 'Price Control and Procurement' policies have worked at cross purposes. Subsidising the production of food grains in the manner of the British Government would have given, and will still give, better results from the Government's Grow More Food Campaign than have been obtained hitherto. The grant of subsidies is advisable from another point of view also. Even at the present moment, a very high price is paid for imported grain which is made available to the public at the internal ruling prices. The result is that the Government loses annually one to two crores of rupees. This, in effect, is a subsidy to the foreign growers of food. There is no reason why this subsidy should not benefit the Hyderabad cultivators instead of the foreign farmers.

### 3. CULTIVATION OF WASTE LANDS

Two thousand one hundred and seventy-eight acres of cultivable waste in the commanded area under Fatehnahar were cultivated. Up-to-date figures for other localities are not available, but it is understood that a fairly large area was taken up by the cultivators for growing of food crops under the *laoni* concesions given by the Government.

### 4. SUPPLIES OF VEGETABLES AND POTATOES

The scheme for the production of potatoes for the Indian Army stationed in Hyderabad functioned from 1944-45 to 1946-47. The areas planted with potatoes and production were as follows:—

| Year | Seed supplied (Lbs.) | Area covered (Acres) | Production (Tons) |
|---|---|---|---|
| 1944-45 .. .. .. | 8,95,920 | 500 | 1,700 |
| 1945-46 .. .. .. | 4,79,360 | 320 | 1,070 |
| 1946-47 .. .. .. | 13,50,000 | 900 | 2,770 |

Out of the total production, after meeting the requirements of the Army, fairly large quantities became available to the civil market in Hyderabad.

A similar scheme for the production of vegetables for the Indian Army was also operated. Every year more than 1,300 tons of vegetables were supplied to the Army. Fairly large quantities of vegetables produced under the scheme found their way to the civil markets also and, as a result, ample supplies of diverse kinds of vegetables remained available to the civil population and import of vegetables from outside was greatly reduced. Unfortunately, with the termination of the War, both the Potato and Vegetable Cultivation Schemes were closed down at the end of 1947.

*Results*

As a consequence of the use of improved seeds, manures and extended irrigation facilities, the over-all extra production of food grains, as a direct result of the 'Grow More Food Campaign' during the five years ending 1946-47, was as follows:—

| Year. | Estimated extra food grains produced. (Tons) |
|---|---|
| 1942-43 .. .. .. | 3,718 |
| 1943-44 .. .. .. | 8,835 |
| 1944-45 .. .. .. | 35,600 |
| 1945-46 .. .. .. | 54,300 |
| 1946-47 .. .. .. | 43,798 |

On the basis of a consumption of 1 lb. of grain per head per day, this extra production of food grains was sufficient to feed the following numbers of adults in successive years:—

| Year. | Number of persons which the extra production could feed. |
|---|---|
| 1942-43 .. .. .. | 22,708 |
| 1943-44 .. .. .. | 54,220 |
| 1944-45 .. .. .. | 2,19,620 |
| 1945-46 .. .. .. | 4,44,500 |
| 1946-47 .. .. .. | 3,65,356 |

*III. Present Position*

The local annual production is about 4,60,000 tons of rice, 19,600 tons of wheat, 8,65,000 tons of *jowar,* 73,000 tons of *bajra* and 99,000 tons of miscellaneous food grains. The total comes to 15,06,660 tons, which compares adversely with the production of 22,32,300 tons during the pre-War period. This is the situation in spite of the fact that the Grow More Food Campaign has been able to help increase the production of food grains by about 43,800 tons. Taking into consideration the imports of 90,000 tons and the exports, which though greatly reduced, are still 35,000 tons, the net available food grains are about 15,61,600 tons.

Now let us turn our attention towards the population. It has been increasing at a rapid rate of 2.07 per cent per year. That is, every year some 3,38,208 additional mouths have to be fed. At this rate, the present population works out to 1,90,44,198. Now, taking into consideration the pre-War rate of consumption, which was far below the accepted nutritional standard, the quantity of food grains required will be 27,27,800 tons. This means that a huge deficit of 11,66,200 tons exists which has to be made good either by increasing the local production or by imports. The latter is not quite feasible as the Indian Union is itself experiencing great difficulty in meeting

its requirements. The alternative of increasing the local production, therefore, remains to be tapped.

### *IV. Some Possibilities*

The problem may be tackled in some of the following ways:—

#### (a) *The use of Improved Varieties of Seeds*

The improved varieties of food crops evolved by the Department of Agriculture give about 10 per cent more yield than the indigenous varieties.

At present the area under the improved varieties is only about 1.3 per cent of the total area under food crops. If all the area were to be sown with improved varieties, it would mean an increase of about 10 per cent of the present production. For an achievement of this object, the Department of Agriculture requires an immediate reorganisation as it is inadequately staffed. The matter is under the consideration of the Government and it is hoped an early decision would be taken.

#### (b) *The Use of Manures and Fertilisers*

Manures and fertilisers offer one of the quickest means of increasing the crop yields.

At present we have to depend for fertilisers entirely on imports. Even when the contemplated plants in the Indian Union begin to function it would be a long time before sufficient fertiliser is produced to make itself felt in filling the great gap between production and requirements.

As such, we have to make the best use of local resources. Hyderabad annually produces about 8 lac tons of oil-seeds from which we get about 5 lac tons of oil-cakes. Although their use for manuring paddy, sugarcane and other irrigated crops is being increasingly appreciated, yet a great deal of the oil-cakes is exported. If this were prevented and the oil-cakes applied to the fields, we may expect an increase of 10 per cent in the production of food grains.

The State of Hyderabad has an urban population of 21,94,294 in 138 towns and cities and a rural population of 1,41,44,240 in 22,360 villages as per 1940 census. Calculating at a basic rate of 10 per cent in tons of urban population and 2.5 per cent in tons of rural population, 5,70,000 tons of compost may be expected to be produced. It will be sufficient to manure 1,14,000 acres of land at the rate of 5 tons per acre. Similarly, by converting the farm wastes from a livestock population of 49,04,633 into compost, another 50,00,000 tons of compost may be expected which would be sufficient to manure 10,00,000 acres of land. The expected extra food grains at 4 per cent of the bulk of the manures would be 22,800 tons from habitation wastes and 2,00,000 tons from farm wastes.

A composting scheme is functioning in the Department of Agriculture under a Biochemist. As at present constituted, it just touches the fringe of the problem. The above progress would become feasible only when adequate trained personnel, transport facilities and equipment are available, and all the wastes are composted.

(c) *The Control of Plant Pests and Diseases*

The damage caused by a great variety of pests and diseases has been estimated by the Famine Enquiry Commission (1945) as 10 per cent of the total produce. The control of pests and diseases, therefore, offers one of the best opportunities to improve the yield of crops. The Department of Agriculture has a scheme sanctioned for Plant Protection. It is expected to start in the near future.

(d) *The Protection of Food Grains in Storage*

Insect pests in Hyderabad State cause a huge loss of food grains in storage. The annual loss is estimated over 3,00,000 tons of food grains worth about Rs. 3,36,00,000. We now know that the pests of stored grains can be very effectively controlled by fumigating the grain itself or the empty godowns and by mixing small quantities of chemical dusts with the grain.

(e) *Utilisation of Cultivable Waste Land*

The State has 34,27,000 acres of culturable waste lands. Out of this, about 3 lacs of acres are immediately available for development. There is a tractor scheme functioning under the Department of Agriculture with 17 tractors. Eight more tractors are expected shortly. With this equipment, it is estimated to add annually about 25,000 acres of virgin land to the area already developed. Thus the quantity of food grains may be expected to increase annually at the rate of 3,500 tons in arithmetic progression. This will be but little progress considering the needs of the country. A bold plan to bring all the culturable wastes under the plough will have to be worked out.

(f) *Increase of Irrigation Facilities*

The irrigated area at present is only about 4 per cent of the net area sown. Some projects are contemplated. We are not in a position to know when the work will be completed.

## *V. Conclusion*

All the possibilities enumerated above would take considerable time to be satisfactorily tackled. Even if we suppose that they could be immediately exploited, we may expect an increase of 11,36,440 tons of food grains only. In that most optimistic situation also, the total production falls short of the actual requirements by about 30,000 tons. This is the condition when the calculations are made on a per capita pre-war consumption which is far below the standard of nutrition requirement. It looks, therefore, that the population even now is too big for the land and other resources to support. It is high time that a halt is called to the birth rate.

## STATEMENT NO. I

Showing quantities of seed and manures supplied annually by the Department of Agriculture, under the Grow More Food Campaign in the Period 1942-43 to 1946-47.

| S. No. | Crop | 1942-43 | | 1943-44 | | 1944-45 | | 1945-46 | | 1946-47 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Seed in lbs. | Area in acres. | Seed in lbs. | Area in acres. | Seed in lbs. | Area in acres. | Seed in lbs. | Area in acres. | Seed in lbs. | Area in acres. |
| 1. | Rice .. .. | 18,90,699 | 23,151 | 41,50,021 | 49,361 | 40,68,000 | 50,580 | 32,70,960 | 40,887 | 47,68,992 | 59,627 |
| 2. | *Jowar* .. .. | 2,25,556 | 19,713 | 29,28,642 | 4,46,490 | 22,08,000 | 2,20,800 | 60,21,360 | 6,02,136 | 37,24,704 | 3,72,460 |
| 3. | *Bajra* .. .. | .... | .... | ..... | .... | 4,28,400 | 20,418 | 4,83,600 | 60,450 | 4,38,216 | 54,777 |
| 4. | Wheat .. .. | 13,46,973 | 30,640 | 26,36,974 | 70,804 | 17,20,320 | 44,055 | 43,32,480 | 1,08,312 | 7,50,408 | 18,760 |
| 5. | Setaria .. .. | .... | .... | .... | .... | 39,340 | 1,007 | 1,93,920 | 24,240 | 1,93,248 | 32,208 |
| 6. | Gram .. .. | 1,24,668 | 2,675 | 10,75,942 | 52,241 | 15,360 | 381 | .... | .... | .... | .... |
| 7. | Potatoes .. .. | .... | .... | .... | .... | 8,95,920 | 550 | 13,50,000 | 900 | 4,79,360 | 320 |
| | Total .. | 35,88,296 | 76,179 | 1,07,91,579 | 6,18,896 | 93,75,340 | 3,38,061 | 1,56,52,320 | 8,36,925 | 1,03,54,228 | 5,38,162 |

## MANURES DISTRIBUTED

| No. | | tons. | acres. | tons. | acres. | tons. | acres. | tons. | acres. | tons. | acres. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Groundnut cake | 4,268 | 21,417 | 1,188 | 14,394 | 16,524 | 77,100 | 27,664 | 1,24,487 | 34,828 | 1,62,530 |
| 2. | Castor cake .. | .... | .... | .... | .... | .... | .... | 15 | 67 | 403 | 1,882 |
| 3. | Bonemeal .. | .... | .... | .... | .... | 19 | 380 | 163 | 3,667 | 326 | 7,332 |
| 4. | Am. Sulphate } | | | | | | | | | | |
| 5. | Am. Phosphate } | .... | .... | .... | .... | 205 | 4,100 | 1,080 | 18,510 | 901 | 12,561 |
| | Compost (town waste) | .... | .... | .... | .... | 4,500 | 900 | 8,298 | 2,766 | 6,696 | 2,232 |
| | Total | 4,268 | 21,417 | 1,188 | 14,394 | 21,248 | 82,480 | 37,220 | 1,49,497 | 43,154 | 1,86,537 |

## STATEMENT NO. 2

*Showing the estimated area and out-turn of principal Food and Cash crops in Hyderabad State in the period from 1942-43 to 1947-48.*

| S. No. | Crop | Pre-war, 1939 | | 1942-43 | | 1943-44 | | 1944-45 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Acreage. | Yield in tons. | Acreage. | Yield in tons. | Acreage. | Yield in tons. | Acreage. | Yield in tons. |
| 1 | Rice .. | 10,94,519 | 4,11,021 | 11,79,618 | 4,92,029 | 14,02,775 | 4,35,140 | 12,98,869 | 4,47,921 |
| 2 | *Jowar* .. | 91,15,306 | 13,92,440 | 98,47,076 | 17,58,156 | 92,81,216 | 12,38,259 | 91,33,597 | 12,25,313 |
| 3 | *Bajra* .. | 19,24,988 | .... | 18,02,306 | 2,23,261 | 18,27,946 | 1,66,081 | 18,35,197 | 1,89,983 |
| 4 | Wheat | 12,50,246 | 1,71,518 | 9,69,626 | 1,38,575 | 6,96,067 | 77,095 | 6,54,436 | 71,528 |
| 5 | Maize | 6,46,917 | .... | 4,12,467 | 52,635 | 4,28,501 | 52,122 | 4,32,876 | 52,970 |
| 6 | Pulses .. | 32,03,686 | .... | 29,58,517 | .... | 35,07,692 | .... | 35,38,606 | 3,55,980 |
| 7 | Gram .. | 12,51,636 | .... | 6,16,732 | 85,724 | 5,07,190 | 59,989 | 7,50,659 | 88,625 |
| 8 | Groundnut | 16,22,206 | 5,11,177 | 18,80,266 | 7,03,981 | 31,05,803 | 10,75,127 | 26,04,212 | 7,54,072 |
| 9 | Castor | 7,99,988 | 67,558 | 7,74,406 | 87,403 | 8,31,615 | 65,447 | 7,46,497 | 53,077 |
| 10 | Linseed | 4,87,780 | 43,096 | 4,67,518 | 44,146 | 4,02,949 | 30,096 | 4,08,144 | 36,074 |
| 11 | Sesamum | 4,60,658 | 29,878 | 5,66,656 | 48,709 | 6,55,338 | 42,936 | 6,22,581 | 40,375 |
| 12 | Cotton | 34,97,912 | 5,08,044 | 31,17,013 | 5,07,906 | 41,04,973 | 5,64,886 | 19,57,130 | 2,47,869 |
| 13 | Sugarcane | 31,483 | 69,330 | 41,834 | 88,246 | 62,979 | 1,01,296 | 62,248 | 1,09,166 |
| 14 | Other Cereals | .... | .... | .... | .... | 9,74,535 | .... | 9,79,494 | 1,03,850 |

| S. No. | Crop. | 1945-46 | | 1946-47 | | 1947-48 | | Remarks. |
|---|---|---|---|---|---|---|---|---|
| | | Acreage. | Yield in. tons. | Acreage. | Yield in tons. | Acreage. | Yield in. tons. | |
| 1 | Rice .. | 14,18,807 | 4,79,562 | 12,52,427 | 4,88,707 | 13,05,266 | 4,60,108 | |
| 2 | *Jowar* .. | 73,69,746 | 8,47,566 | 68,18,493 | 8,98,194 | 62,44,645 | 8,65,005 | |
| 3 | *Bajra* .. | 12,62,702 | 1,04,970 | 10,13,056 | 75,607 | 10,96,405 | 73,113 | |
| 4 | Wheat .. | 4,84,611 | 51,937 | 3,98,546 | 5,401* | 2,02,145 | 19,636 | *Severe rust all over State |
| 5 | Maize | 3,34,101 | 33,718 | 3,53,709 | 22,750 | 3,40,161 | 15,942 | |
| 6 | Pulses .. | 39,53,714 | 3,97,073 | 42,12,161 | 3,73,015 | 47,68,946 | 4,56,135 | Consists of Pulses minor millets |
| 7 | Gram .. | 8,84,164 | 1,04,582 | 8,95,498 | 85,486 | 9,36,445 | 1,16,786 | |
| 8 | Groundnut | 24,35,614 | 7,48,216 | 24,37,316 | 6,16,613 | 20,30,438 | 5,54,322 | |
| 9 | Castor | 8,06,857 | 56,650 | 8,01,141 | 40,761 | 7,86,298 | 57,667 | |
| 10 | Linseed | 5,14,605 | 41,794 | 5,74,722 | 34,768 | 5,74,465 | 49,517 | |
| 11 | Sesamum | 6,81,105 | 47,810 | 7,31,142 | 46,507 | 7,83,717 | 56,148 | |
| 12 | Cotton .. | 21,56,177 | 2,51,219 | 22,42,461 | 2,67,383 | 19,05,968 | 2,57,327 | Yields are in bales. |
| 13 | Sugarcane | 76,516 | 1,50,741 | 95,461 | 1,56,825 | 1,27,494 | 2,66,735 | Yields refer to 'Gur' |
| 14 | Other Cereals | 9,05,552 | 79,632 | 8,42,129 | 69,344 | 10,23,698 | 83,214 | |

# GROWING MORE FOOD IN BIHAR

*by*

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## I

Bihar, not many years ago a surplus and exporting Province, has now entered a state of chronic shortage and scarcity of food grains. The Food Grains Policy Committee declared Bihar as a self-sufficient Province in its food resources and has accordingly recommended that no import assistance be given to the Province. But the fact of the matter is that Bihar's average deficit is of the order of $3\frac{1}{2}$ lakh tons. This deficit went upto almost 12 lakh tons in the year 1946-47. This figure seems to be an exaggeration. But there is no doubt that the deficit has increased recently and is also not likely to be less in the current year. In other words, prospects for the present are not bright.

This recurring shortage is no natural calamity nor a result of one or two years' crop failures: nor is it merely a War-time catastrophe. The fact is that the agrarian economy of the Province has been heading towards a major crisis ever since the British superimposed a system of triple exploitation on Land Economy. The Congress Ministry too has bungled and hence the land economy of the Province is badly battered and shattered. As a result, the economy of the Province revealed the following grim facts. The total cultivated area under the major food crops has gone on declining, whereas the population has registered a steady increase. The following figures relating to Bihar and Orissa will speak for themselves:

| Year | Population in Millions | Area of land under Cultivation in Million acres. | Production of Major Food grains, in Lakhs of tons |
|---|---|---|---|
| 1911-12 | 36.9 | 22.8 | 109 |
| 1921-22 | 36.4 | 21.2 | 89 |
| 1931-32 | 40.4 | 20.2 | 78 |
| 1941-42 | 45.1 | 19.6 | 60 |

*Total production of Major Food Grains in Bihar.*

| Year | yield (000 tons). |
|---|---|
| 1938-39 | 4790 |
| 1940-41 | 3830 |
| 1943-44 | 4410 |
| 1945-46 | 3280 |

Thus during the last forty years (1911-12 to 1941-42), when the population of Bihar and Orissa increased by 8.2 million, the total area under cultivation of food grains registered a decline of 3.2 millions of acres. The

total production of food grains has been continuously going down. It has fallen by 40 per cent since 1911 whilst population has increased by 25 per cent. The imports of food grains have increased from 1,81,000 tons in 1938-39 to 3,20,000 tons in 1940-41 excluding 74,000 tons of paddy a year from Nepal.

However, this is one side of the food economy. Now let us have a peep into the Food Enquiry Committee Report. This inquiry was conducted under the able supervision of Shree G. N. Sinha, now D. P. I. Government of Bihar. The report comes to the conclusion, on the basis of *20 chhataks* of unprepared cereals as the basic requirements of an adult, that the total requirements of the Province are of the magnitude of 35,90,80,636 maunds on the basis of total estimated population of 3,79,29,000 in 1946.

Coming to the production side there are three estimates. According to the Food Survey, the total production is of the magnitude of 226 million maunds. The Agricultural Statistics Department places the production estimate at 216 million maunds and according to the Director of Agriculture, the figure comes to 196 million maunds. If the Food Survey Enquiry Committee's figure is accepted then the annual deficit amounts to 134 million maunds, which is very much more than our imports of roughly 10 million maunds of foodgrains.

Thus it is admitted on all hands that our food economy is faced with a major crisis. The deficit food economy means starvation and misery not only for the masses but for other classes as well.

Let us look at the various plans and schemes which the Government of India and the Government of Bihar have launched to meet the food deficit. The much advertised and propagated "Grow More Food Campaign" has utterly failed to deliver the goods to the country. A peep into the report recently published clearly testifies to the sweeping remark advanced above. The report runs as follows:—

"No less than 31 crores has been spent by the Centre and the Provinces on the "Grow More Food Scheme" since its inception in 1943. Out of this total, the Centre's share in the form of grants and loans exceeds Rs. 19½ crores. The annual reports thus far published, while fixing big annual provincial targets, are silent regarding the annual increase in production achieved. The Official note bemoans that "no easy and dependable method is available to assess accurately the increase in food grains production resulting from the "Grow More Food Campaign." Instead it seeks to give the tonnage of manure distributed, the number of minor irrigation projects financed and the quantities of seeds distributed. By another Press-note issued on the 23rd, April 1947 it is pointed out to us that as a result of the Grow More Food Campaign the annual food production has increased by 3 million tons. The same Press-note stated that India's annual demand for

cereals was of the order of 64 million tons while her average production was about 56 million tons." If about 3 million tons of grains are added, there is a deficit of about 5 million tons. It is however not explained how India's deficit continues to grow despite her growing more food upto 3 million tons per year. According to the department's claim, India's Food grains production since the beginning of the Campaign should have gone up by 12 million tons in four years. Were this estimate true India should by now have a comfortable surplus of 7 or 8 million tons. Instead the figures of growing imports and rising prices tend to prove how little India grows under the "Grow More Food" plan. India's Food imports this year are expected to be of the order of 2.5 million tons—a record. "Import more Food" figures do not seem to tally with "Grow More Food" estimates."

The campaign of Grow More Food also has been the target of much criticism. In the words of the "Eastern Economist", the criticism is in reality misplaced. It never was a remedy for our food problem and its fruits could not be our deliverance from the constant spectre of famine and mal-nutrition. There is also the fact that it was never worked with the requisite energy and enthusiasm. The positive proof of this is furnished by the paucity of resources directed to the tackling of this major problem. The conclusion is inescapable. The Grow More Food Campaign on the lines on which it has been conducted cannot deliver the goods and any attempt to build large hopes of food self-sufficiently from Grow More Food Campaign is simply absurd and nonsensical.

However, not learning from the experiences of the past, the Government of India has launched a new five-year programme of "Grow More Food Campaign" in the year 1947-48. The sum granted amounts to Rs. 3 crores 36 lakhs. The same fate awaits this scheme as well.

These measures may be stop-gap remedies to tide over the food deficits. They cannot work as permanent measures and nothing better can be expected from schemes of such types.

However, let us turn our attention to the Province of Bihar and try to assess her achievements in the field of "Grow More Food Campaign". In Bihar the "Grow More Food Campaign" had been purely a paper plan. Big production targets were fixed, many plans and schemes were floated and propagated to catch the imagination of the people, but no definite results were achieved. Files and files were heaped and piled, sections and sub-sections in the Patna Secretariat were created, but no extra amount of food grains was added to the total production of the Province. Ministers and Parliamentary Secretaries launched whirl-wind tours and campaigns to increase the food production but no tangible results were achieved. The only achievement which may be assigned to their credit is the disillusionment of the masses. To the ordinary man in the street, the under-dog, the

impact of food prices, the rotten food stuffs supplied through the ration shops clearly speak of the muddle and bungling created by the Food Ministry of the Province in tackling the province's most urgent problem.

As mentioned above, there is no lack of schemes and plans, which if launched in right earnest, may change the entire face of the Province and people may begin to enjoy the best and rich fruits of increased production. But there is no such drive and the people as a consequence have to suffer.

Let us look at the various schemes of Bihar Government.

The Bihar Government as early as 1946 passed the Waste Land Reclamation Bill. There were also other reforms of far-reaching consequences in the field of agriculture which have been passed and introduced in order to ameliorate the conditions of the poor agriculturists. But the most significant of them all is the passing of the "Abolition of Zemindari Bill" in the Province.

The Bill has been finally passed by the Legislature but its operation has been delayed.

All these Schemes are fine paper plans. No tangible results have been achieved so far in any direction. The Bihar Government's targets for increased production to the tune of 3,70,000 tons by 1951-52 according to the plan of the Interim Central Government has been given a cold storage. According to that Plan, the Bihar Government decided to construct 50 thousand Percolation wells equipped with Persian wheels. Eight thousand minor irrigation projects were to be completed and nearly 168 state owned electrically operated tube wells to be bored for pumping and irrigational purposes. Drainage by small canals and reservoirs and reclamation of waste land in Tribeni Bagha area and Kosi Diaras were also decided upon. If all these schemes bear fruit, then something like 10,500,000 maunds of food grains can be added to the Province's food supply.

In the recent past, Government of Bihar have further accelerated the pace of paper planning in the matters of food production and finally decided to reclaim something like 7 lakh acres of waste land in the various regions of the Province. The waste lands will be given to the refugees to colonise the areas. Cultivation will be done on co-operative basis and mechanical equipment will be provided by the Government. This scheme, if successful, will reduce the annual food shortage of grains by $3\frac{1}{2}$ lakh tons which was the total deficit of the Province of Bihar in 1946.

There are various major and minor irrigation and electricity projects. These projects will bring fundamental changes in the economy of the Province. The Damodar Valley Project, the Kosi Project, the Gandak Project are the major projects. Eight dams on the Damodar river and its tributaries, when completed, will irrigate about one lakh acres of land in

South Bihar. They will generate electricity of highest power which will be utilised in the establishment of various industries in Bihar. The Kosi project will also irrigate and provide electricity to the vast areas of North Bihar. The Gandak project will be able to irrigate about 30 lakh acres of land in the District of Saran, Darbhanga, Muzzefferpore and Motihari. These major projects will cost a huge sum of money. The Gandak project alone will cost Rs. 11 crores for its execution and will be complete in about 6 years' time.

There are other minor projects known as Tilaiya and Konor Dams, Panchat, and Maithan Dam, Sakari Canal and Baya Nalla channel. A masonary Dam on River Panchane near village Giriak in Patna District is also proposed to be constructed. The now defunct "Chorusa" channel is to be revived which will irrigate about 40 thousand acres. The revival of "Baya Nalla" is expected to benefit an area of 96 thousand acres at the cost of nearly half a crore of rupees. The Sakari Project will irrigate about 50 thousand acres in the district of Monghyr. A new Anicut on Sone replacing the old will benefit the districts of Gaya, Arrah and Patna. Its cost will be about 4 crores.

Execution of all these Plans and Schemes will require a huge amount of money. How to finance them? This is very easy provided the Food Ministry of the Province creates confidence among the masses that these schemes will not be paper plans but will be given concrete shape and will be of benefit to the people. If such assurances are given to the people, money will be coming in freely. If Government floats Agricultural Development Loans, it will have no difficulty to raise the amount to finance the schemes. For the present, those agriculturists who will be financing the projects by purchasing the development loans should get the improved seeds through the Credit Agricole on credit to be repaid after the harvesting season. Every unit of 25 villages should have a Credit Agricole with Sales Depot attached to it to give all sorts of facilities to the cultivators.

Every province has done remarkable progress in the field of mechanical cultivation with exception of the Province of Bihar. An area of 1,20,795 acres of land have been brought under cultivation by the use of tractors by almost all the eight provinces of the Indian Union. Bihar is not in the picture. In C. P. also some 8,000 acres of land have been reclaimed. But in our Province no progress has been made in bringing land under mechanical cultivation.

What is the need of the hour?

The solution of the problem lies in developing minor irrigation projects in the immediate present. A band of selfless social workers must also be conscripted to help the various schemes of Finance, Credit Agricole and Sales Depot. The supply of tractors on hire as is being done in some Pro-

vinces should be experimented upon. Thus the supply of tractors on hire, seeds on credit, manures at reduced prices and other facilities without any let or hindrance will create a confidence in the mind of the masses and will have the way for the success of the long range plans of the Government.

This is not all. Small and cottage industries should also be developed in the rural economy so that the strain of surplus labour of 90 lakhs on the agrarian economy of the Province may be eased. Such a development of industrial and agricultlural economy side by side will mean increased per capita income for the people of the Province as also general progress, improved means of living and general rise in the standard of the masses.

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## THE RECLAMATION OF HYPERENDEMIC MALARIA TRACTS IN INDIA AS A SOLUTION TO ITS RICE PROBLEMS *

*by*

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Two-thirds of the population of India depend on rice as their staple diet, while the remaining supplement it with other foodgrains to a varying degree. India was self-sufficient for its requirements of rice, but with the gradual increase in its population during the last few decades, it was importing about 3-5% of its requirements chiefly from Burma which amounted to about $1\frac{1}{2}$-3 million tons annually. With the outbreak of World War II, these imports from Burma stopped, while there was an increase in off-take during the years of war; the country was, therefore, faced with a food-shortage. Thus in 1948, Rs. 130 crores worth of food grains were imported from various countries, the bulk of which was made up of rice. This shortage is likely to continue for the next few years.

The rice growing area in India is about 58 million acres producing about 18 million tons of rice. It is grown chiefly in the provinces of Bihar, West Bengal, Orissa, C.P., and Madras. This may be compared with the total area of 178 million acres under cultivation of foodgrains in the whole country, of which 130 million acres are under rainfed crops, and the remaining 48 million acres are under some kind of irrigation. The total estimated acreage likely to come under some kind of irrigation with the multi-purpose projects now envisaged is only 27 million acres and this takes 10-15 years for their completion. It is estimated that the yield from this increased acreage may be just sufficient to meet the requirements of the probable increase in population during this period. A short term programme for increase in rice production is, therefore, immediately called for.

* The views incorporated in this note represent the views of the Malaria Institute of India.

The rice growing areas in India are coincident with endemic malarial tracts, and the only fertile tracts in large blocks not so far brought under cultivation are the hyperendemic malarious tracts which are mainly three, the terai land in the Sub-Himalayan region, a narrow tract along the Western Ghats, and, lastly, a large tract along the Eastern Ghats spreading into the Provinces of Madras and Orissa and the latter including the newly merged Eastern States. Not much rice is grown in the first two areas while the third covering an area of about 100,000 sq. miles or 60 million acres is a rich potential rice growing area with 50-100″ rainfall. It is sparsely populated with about 50 persons, mostly of primitive hill tribes, to the square mile. It may be possible to grow rice in these tracts as a rainfed crop without irrigation.

The average yield of rice per acre in India is 864 lbs. and it cannot be enhanced except by the use of chemical manures. To make up the deficit of 2-3 million tons in the next few years, one should therefore increase the acreage under cultivation to 12 million acres after allowing 30% for wastage in storage and transport. These tracts can be soon brought under cultivation by mechanised farming which reduces labour by 90%. At the rate of 10 acres of land per head, 12 lacs of people will be required to render the land agriculturally fit and malaria free. The recurring cost of malaria control operations for this population is estimated to be little over 24 lacs, i.e. @ Rs. 2|- per head per annum. The cost of cultivation to produce the extra 2-3 million tons of rice annually can be worked out by competent authorities.

It may be emphasised that in the planning and development of any of these tracts, malaria control schemes must be organised well in advance of agricultural and engineering operations. Detailed schemes can be worked out in collaboration with agricultural experts and economists as and when required.