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General observations regarding the Grow More Food Campaign:

It may be surprising to learn that in some of the far-off villages, the farmers stated that *they had not even heard about the campaign, much less to expect any assistance under its auspices.* The activities of the Agricultural Department seem to centre round some well-situated villages only. Under the circumstances, the propaganda of the Department does not reach all the villages, much less all the farmers. Some of the villages, especially in the rainy season are practically cut off from the world. And such villages are hardly visited by the officials. Nor are the ryots literate enough to maintain contact with the outside world. Under the circumstances, a conservative out-look and a lack of local enthusiasm and initiative are commonly to be found in the villages. Therefore, it is imperative to strike a new psychological note in the minds of the farmers. Local social workers, apart from the Government, can play a unique role in this task of creating a new atmosphere and local enthusiasm. It may be noted in this connection that the recent policy of constituting village food-production committees, is a step in the right direction. Needless to add that the obstacles discussed above will have to be removed if more food is to be produced. A new living link must be created between the agriculturist and the personnel of the various government departments connected with rural areas. The out-worn red tape in the government machinery will have to be thrown away. It is not unusual to hear that what little government assistance is given at present, does not reach the cultivator in time. Many a time it is seen that farmers are shunted to and from one Department to another, whenever they step out for some aid or the other. All such handicaps must be removed if the tiller of the soil is to be instilled with enthusiasm regarding the Grow More Food Campaign. Moreover, as indicated earlier, all the further possibilities of the various schemes under the auspices of the Grow More Food Campaign must be thoroughly explored and vigorously implemented.

OBSTACLES TO THE GROW MORE FOOD CAMPAIGN
(DHULIA TALUKA)

by

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Although the Grow More Food Campaign started in 1944-45, it has not succeeded in easing our food problem. It was thought desirable, therefore, to inquire into the obstacles that were thwarting the Grow More Food Campaign.

An important factor hampering the Grow More Good Campaign is supposed to be the competition between food and non-food crops. In order to find out whether

this competition does really act as a hindrance, it was decided to select a district where such competition exists. West Khandesh district was chosen for the competition between food-crops on the one hand and ground-nut and cotton on the other. A district was considered to be too big a unit for detailed investigation. It was, therefore, decided to concentrate on Dhulia Taluka within the district.

It was decided to select ten villages within Dhulia taluka for detailed investigation. It was not possible to select these villages by absolute random sampling because the taluka is not a homogenous region. It was decided to select villages which would represent as truly as possible the variegated nature of the Taluka.

In each of the selected villages it was decided to take representative samples of cultivators for detailed examination. In all 109 cultivators were examined. Care was taken to see that cultivators of almost all the sizes of cultivated holdings were represented in our sample. Care was also taken to see that tenancy was given a proper share in the representation.

Land Utilization and Crop Pattern.

Before studying the Grow More Food Campaign and the obstacles to increased food production, we must consider land utilization and crop pattern in Dhulia. In five years from 1942-43 to 1947-48 the total cultivated area of the taluka increased by about $3\frac{1}{2}$ per cent. What is important from the point of view of production, however, is the net sown area and the gross cropped area. The net sown area shows a decrease of 1.2 per cent between 1942-43 and 1947-48. This is because although more land came under cultivation, the area remaining fallow increased much more. Thanks, however, to the very great increase in the area cropped more than once, the gross cropped area is able to show an increase of 3.6 per cent in the five years. This shows that, if food production is to increase, we must concentrate attention on the fallows which seem to be undermining whatever advantages may accrue from increased land under cultivation. Land lying fallow has been showing an almost continuous increase. In the five years the area increased by 62.9 per cent. If we consider the causes for land remaining fallow it will be realised that it should not be difficult to reduce the fallows. Most of the area is lying fallow due to causes such as waterlogging, weeds, neglect, laziness of cultivators and so on. There is no doubt that part of the fallow land is uncultivated due to weeds and stones. During our investigation we found that some part of the cultivated land is fallow due to the ravages of weeds and waterlogging. But the major portion of the fallows is no doubt attributable to neglect. The increase in fallows in 1946-47 and 1947-48 seems to be partly due to the damage of the floods of 1945-46.

Another item worth noting in the land utilization figures is culturable land out of uncultivated land. The extent of this land has remained steady for four years

and has, in fact, increased in 1947-48. It is, indeed, surprising that this area should increase when attempts are being made to bring more land under the plough. The conclusion cannot be avoided that what is shown as culturable is not really easily cultivable area. Government statistics have always been showing hills and other such places as culturable, although it is not quite so easy to bring such land under the plough. There has always been a confusion between culturable or cultivable waste and land that can be really cultivated but is lying uncultivated. The real cultivable waste seems to be included in some other column in the land utilization table. Land utilization in the selected villages almost reflects land utilization in the taluka.

Distribution of the gross cropped area among the various crops has an important bearing on food production. Cereals occupy an important place in the gross cropped area. It should be noted, however, that in the five years from 1942-43 to 1947-48 there has been a slight decline in the percentage share of cereals in Dhulia Taluka. The share of cereals has declined from 62 per cent to 60 per cent of the gross-cropped area. In our food deficit, the deficit in respect of cereals is alone important. Acreage under cereals nevertheless does not seem to improve in Dhulia taluka. Oil-seeds come next to cereals in point of importance. During the five years they have improved their share in the gross cropped area from 11.0 per cent to 21.5 per cent. The peak figure for oil-seeds was reached in 1944-45 when they accounted for nearly a quarter of the gross-cropped area. The main oil-seed is ground-nut which occupies about 97 per cent of the area under oil-seeds. The increase in the area under oil-seeds is almost entirely due to the increase in the area under ground-nut. This increase in ground-nut cultivation is almost phenomenal, the area having more than doubled in the short space of five years. Next to oil-seeds, come pulses in the order of importance. Formerly, however, pulses were fourth on the list and not third. But the heavy decline in the cotton area and great increase in area under pulses, have enabled pulses to occupy a higher place among the different crops. The increase in pulses is as phenomenal as the increase in ground-nuts, the area nearly doubling in five years. We should, however, note two points about the position of pulses in Dhulia taluka. Firstly, kulith or kulthi, which is used mainly as a cattle feed, accounts for over 60 per cent of the area under pulses. Secondly, part of the increase in the area under pulses is due to an increase in the area under kulith. The share of kulith in the total area under pulses increased from 60.7% in 1942-43 to 68.9% in 1947-48. Next to pulses in order of importance come fibre crops, mainly cotton. Cotton accounts for almost the entire area under fibre crops. In 1942-43 cotton was a very important crop in Dhulia, coming immediately after cereals from the point of view of extent of acreage. But during the last five years it has undergone almost a sea change. In 1942-43 it occupied 18.8 percent of the gross cropped area. Today it occupies hardly 5 per cent of the gross-cropped area. The introduction of a new jarilla variety is supposed to be the cause of this great fall in cotton area. This new variety yields less, and with the controlled prices of cotton, the cultivators do not find the crop profitable. Today cotton is

grown by many cultivators merely for purposes of rotation, rather than for getting money. Much of the area under cotton seems to have been diverted to ground-nut and pulses. Fruits and vegetables, condiments and spices and sugar-cane occupy a very minor place in the crop pattern of the taluka. Nevertheless, area under condiments, spices and under sugar-cane increased during the five years, because of the good prices for chillies and onions and for 'gur'. Area under fruits and vegetables, on the other hand, declined slightly.

The crop pattern of the selected villages differs slightly from the taluka crop pattern. The area under cereals has increased in the selected villages although there is a decline for the taluka. In case of fruits and vegetables, likewise, the selected villages show an increase in acreage while the taluka figures show a decline. Except for these differences the other trends are almost the same in the taluka and the villages.

The Grow More Food Campaign in Dhulia Taluka.

The Government intend to increase production of food grains in five ways:— (i) By bringing new land under cultivation for growing food crops; (ii) by restricting the cultivation of non-food crops and crops other than scheduled food crops; (iii) by providing irrigation facilities, so that more land can raise two or more crops; (iv) by increasing the yield of food crops by providing (a) manure and (b) improved seeds and (v) by providing financial assistance to the cultivators for improvement of land or for purchasing bullocks and so on. A proper study of the Grow More Food Campaign can be made by studying how the Government is trying to implement these schemes.

Firstly, the Government are aiming at to bring under the plough part of the culturable waste in the district. They are also, trying to extend cultivation to some part of the forest and grass land area. The unassessed area given out temporarily for cultivation increased from 7.5 thousand acres in 1942-43 to 16.4 thousand acres in 1947-48, with the adoption of the Grow More Food Campaign. There are, however, certain defects in this scheme for bringing new land under the plough. In giving these new lands for cultivation Government give preference to persons of backward classes like Bhils, Mahars etc. These persons do not happen to possess either the implements, cattle and capital to carry out agricultural operations, or the traditional knowledge and skill to cultivate the lands properly. Besides, as the lands are given out by the Government on a purely temporary lease, no one has any interest in improving them. Much of the new land seems to be left fallow for grazing cattle or for selling fodder. It is not, therefore, surprising to find the total cultivated area increasing and net sown area declining.

There are some points about the Growth of Food Crops Act which have to be noted. Firstly, the Act ignores the opportunity costs of the different crops. An acre of land can raise today, either 1 map (48 paylees) of bajri or 5 pallas of ground-nut (1 palla=3 Bengal maunds). The cost of producing 48 paylees of

bajri, therefore, is that of 15 Bengal maunds of ground-nuts. That is, in terms of the current prices, for producing 48 paylees of bajri which fetch him an income of about Rs. 84, (at Rs. 1-12-0 per paylee) the cultivator has to forgo nearly Rs. 300 (at Rs. 60 per palla) by way of income from ground-nuts. The opportunity cost of producing bajri is, therefore, terrific. The same is true in case of jowar. Under the circumstances, if given a free hand, the cultivator would so adjust his crop pattern that he grows just sufficient cereals and pulses for his own needs, putting all the other land under ground-nuts so far as it is practical from the point of view of crop rotation. The Growth of Food Crops Act, however, prevents such crop adjustments to suit opportunity costs. There is, therefore, a natural desire on the part of cultivators to evade the law.

In our sample it was found that 44 percent of the selected cultivators evade the law. In the irrigated villages the extent of evasion is even greater. In the irrigated villages examined, there were 26 breaches out of a total of 45 cases examined, that is about 58 per cent. Similarly in one dairying village in the south-west portion of the taluka, the proportion was found to be 50 per cent mainly because some of the land owned by the cultivators was too poor to be profitably cultivated and because the main business of the people was dairying. The proportion of breaches to total number of cultivators examined is high in the bigger size groups. It is highest in the two groups 25 to 50 acres and 50 to 100 acres. Evasion of the Act, thus, seems to vary directly with the size of holding. The explanation for this correlation seems to be that when the holding is small the greater proportion of the area has to be under food grains and pulses in order to supply the needs of the cultivator. As the holding increases in size, however, there is surplus land which can be turned over to the growth of non-food cash crops.

During the first season after the passing of the Act, some prosecutions were launched to prevent breach of the law. But after these initial prosecutions and punishment nothing has been done to enforce the Act. This year, however, orders have been issued for bringing offenders to book. The Act, thus, promises to become an important instrument for increasing food production.

Irrigation Facilities.

The third scheme for increasing food production is to provide irrigation facilities to the cultivators so that they can grow two or more crops. From 1947-48 Government have started giving liberal amounts, partly as subsidy and partly as tagai, for digging new wells or for repairing old ones. Besides, the Government have planned some minor irrigation schemes in the district, such as 'bandharas' across rivers and a lift-irrigation project on the Tapti. However, these schemes have not yet materialized, and attention is at present being focused on the digging of wells. It is, therefore, necessary to examine the well irrigation scheme in West Khandesh district in great detail. In two years 1947-48 and 1948-49 Government spent Rs. 23,44,000 by way of subsidy and tagai loans for bringing an additional area of 1008 acres under irrigation.

Except Ahmedabad District, West Khandesh is getting the largest amount of the money, and yet the actual results are very disappointing. Some of the other districts, notably Khaira, Broach, Surat, East Khandesh, Ahmednagar, Solapur, Satara and Bijapur have been able to bring more land under irrigation with even less than half the money. Unfortunately, the whole scheme has become something of a scandal in West Khandesh District. The scheme seems to have been clogged by three major factors (*i*) nepotism and corruption; (*ii*) lack of sense of responsibility on the part of the people; and (*iii*) lack of official supervision.

Although in theory the procedure for getting money seems to be quite sound in practice, however, the whole machinery has been perverted by corruption, nepotism and gross negligence. Money is sometimes sanctioned without adequate inquiry or check, while the requirements of the really needy cultivators are over-looked. Further, no check is kept on the use of the money by the cultivators, and on the use of the well when it is completed. Responsibility for this work seems to have been divided between the Revenue Department and the Agricultural Department, with the Secretary of the Rural Development Board, also, doing some supervision work. Divided responsibility, however, invariably leads to shirking of work, especially when a person is already saddled with lot of work. Again, corruption can reduce the effectiveness of supervision to a great extent. Besides the government machinery, the people share, in no small degree, the responsibility for defeating the Government scheme. Many of the cultivators take the money and use it for some other purpose, mostly unproductive purpose. It is not possible to ascertain the extent of such misuse, but the official opinion is that about 25 per cent of the cultivators either divert the borrowed money to other purposes, or do not use the newly constructed wells for growing food crops. One particular use to which money is diverted is marriage. The well-digging season coincides with the marriage season. Some cultivators from Dhulia taluka used the tagavi for celebrating marriages and later on returned the money out of the harvest receipts, thus evading the usurious interest rates of the money-lenders. Besides marriage, money is diverted to a number of domestic uses. The argument put forward by the cultivators is that the control of money lending has led to such a stringency in the agricultural money market that they are forced to have recourse to such underhand dealings.

Apart from the perversion of the well-irrigation scheme, there is one fundamental defect in the scheme itself. As in the case of the scheme for bringing more land under cultivation, no attention is being paid to the existing resources. There are a number of wells lying unused in the district; but instead of making attempts to bring all of these into use, new wells are being dug at great cost. In the ten villages investigated 263 wells are in use, 93 are out of use. In these villages the total number of new wells dug is 59 and the number of old wells repaired upto March 1949 is 6. It will be seen that large number of wells are lying unused in these villages. This shows that an undue emphasis is being laid on the digging of new wells. Repairing of old wells is always

an easier and cheaper proposition than digging of new wells. Without adequate technological facilities it is very difficult to discover sub-soil water currents, and part of the money given by Government is likely to be frittered away in fruitless search of sub-soil water. Repairing of old wells does not involve these preliminary costs, and it is, therefore, much cheaper than construction of new wells. Among the causes for wells remaining unused it was observed that want of repairs and scarcity or depth of water account for most of the unused wells. With a small outlay many of these wells can be brought into use. Besides repairs, a few of the wells are not being worked because of the high cost of working them or because of lack of bullocks or because the owner has more than one well. In an all-out drive for food production such reasons can hardly be allowed to put some of our resources out of use. Further some of the new wells on which money is being spent so lavishly may go out of use for these same reasons if care is not taken before the new wells are dug. Besides some idle irrigation facilities, we have some underused well facilities. A quantitative study of the unused capacity of wells is rendered difficult by the fact that not all cultivators are able to say what the total capacity of their wells is. During our investigation 23 cultivators were able to give correct estimates of the total and used capacities of their wells. It was found that, of these 23 cultivators, as many as 13 were using wells below their full capacity. The reasons for not using the wells to their full capacity are, generally, lack of bullock power and the limited size of the holding. Cooperative use of wells under these circumstances, is likely to be very helpful for increasing food production, by making the unused irrigation facilities available to other cultivators who are in need of them. What is required, to begin with, is a proper survey of the existing facilities with a view to finding out whether they are being properly and fully utilised.

Whatever may be the drawbacks of the well-irrigation scheme, it may be admitted that in two or three years' time the area under irrigation will have considerably increased, although at a rather heavy cost. It takes time to dig new wells and bring them into use, and the campaign for constructing new wells has started only last year. Already the fruits of the scheme are slightly visible, as can be seen from the increase in the new wells constructed in 1948-49 as compared with the figures for 1947-48. So the best thing to do is to be optimistic about the result, while at the same time trying to see if we can avoid the waste and corruption that is hindering the progress of the scheme.

Manures.

The fourth scheme for increasing food production is to improve the yield of food crops by providing (1) manure and (2) improved seeds. Let us first consider the scheme for providing manure to the cultivators. There are four parts of this scheme. Firstly, the Government are attempting to alleviate the shortage of manure by providing at concession rates groundnut cake, ammonium sulphate and manure-mixture for growing food crops. Secondly, a compost manure scheme has been started and cultivators are encouraged to prepare and use compost manure. Thirdly,

some of the municipalities are turning refuse into compost manure and are selling it to cultivators. Lastly, Dhulia Municipality has started irrigating some land near the town with sewage water. A proper study of the scheme for providing manure to cultivators can be made by studying each of these four schemes.

As regards manure provided by the Government at concessional rates, the smallness of the help becomes obvious. In 1947-48 groundnut cake and manure, mixture manured only 0.8 per cent of the gross-cropped area of the district. For 1948-49 the percentage is likely to be even lower. The inadequacy of the help can be brought out in another way.

In the villages investigated only 28.4 per cent of the selected cultivators were found to be using groundnut cake while only about 6 percent used manure mixture. Compared to the holdings of the cultivators using groundnut cake, the quantity of cake used is absolutely inadequate. The cultivators are forced to apply the manure to small areas of their holdings, so that not only is the number of cultivators using cake manure limited, but also the area manured by those using the manure is very much limited. There is another point to be noted about this distribution of groundnut cake and manure mixture. The food production drive is not likely to be assisted by this distribution if the manure is utilised for growing non-food crops. In distributing the manure, therefore, Government must insist that the cultivators use it mainly for food-crops. In practice, however, part of the manure is invariably diverted to non-food or other crop like sugar-cane. It is well-nigh impossible to keep a check on the use of manure. From the point of view of the food production drive there is, thus, a gap in the scheme.

Distribution of cake and other manure touches only the fringe of the manure problem. The compost manure scheme goes deeper. Compost manure can be easily prepared by each cultivator out of refuse, and the cost of the manure is almost negligible. The main thing that is required is to convince the people of the advantages of compost manure and to encourage them to take up its use. In order to encourage cultivators to dig compost manure pits, Government are giving a subsidy of Rs. 3 and Rs. 6 according to the size of the pit. In 1947-48 a total of 3235 pits were dug in the whole district, out of which 2142 pits were filled with refuse. In 1948-49, upto the end of March, 10,300 pits had been dug and filled. It is clear that the movement is gathering momentum. Each pit yields about five cart-loads of manure, which means that these two years' labour would be producing about 60,000 cart-loads of valuable manure. The scheme, thus, appears to be a very sound one. Our investigation, however, revealed that people are not enthusiastic about the scheme. They dig pits only to get the subsidy promised by the Government. Government have failed to enthuse the people and without enthusiasm on the part of the people, monetary inducement can do very little. There is no official check to see that the pits dug are properly filled with refuse and the manure used. As a result many of the pits are dug and left unused. There, also, seems to be some confusion between compost pits and ordinary pits which cultivators in this district

have been using for storing cow-dung manure. The whole situation is reflected in the information collected during our investigation. Out of 109 cultivators examined only 8 were found to be using compost manure. This brings out the utter lack of enthusiasm for this cheap and useful manure. Nevertheless, with proper efforts the compost manure scheme can very well become a turning point not only in food production but in our entire agriculture. It can bring to our famished land the long needed restorative and nourishment and that too, at a cost within the reach of the smallest cultivator.

The other two manure schemes have been more successful mainly because their execution has been in the hands of official or semi-official bodies like Municipalities.

Improved Seeds.

Government are trying to 'increase the yield of food crops not only by providing manure but also by distributing improved varieties' of seeds which yield more or resist diseases. Improved seeds are being distributed in each taluka through Agricultural Depots and through the Taluka Development Association. Multiplication farms for improved seeds have also been started in the district. In spite of this scheme our investigation showed that not many cultivators buy seeds from either the Depots or the Taluka Development Association. Most of them depend upon home supply or if that fails they purchase locally from other cultivators who may have a surplus.

Financial Assistance.

The fifth scheme to increase food production is to give financial assistance to the cultivator for improving lands or for buying bullocks, and to give him the aid of the tractor squad to bring weed-infested lands into proper cultivation. So far as the financial aid is concerned, the diversion of funds noted in the case of well-irrigation scheme is found here on an even greater scale because it is easier to deceive the authorities. The bullock tagai has, in fact, achieved a notoriety in Dhulia taluka.

Evaluation of the Grow More Food Campaign.

The Grow More Food Campaign seems to impress more by the huge sums spent on it than by its achievements. In fact, the Government in their haste to increase food production have forgotten to have proper means of measuring the success of their schemes. Government is not carrying out crop cutting experiments to find out whether the yield of food crops is increasing or not. They have also no idea about the total production of food grains and how it is being influenced by their schemes.

There is no doubt that acreage of both cereals and pulses has increased in the last five years. But the increase in production is not proportionate to the increase in acreage. Taking 1941-42 as the base year we find that the percentage increase in

acreage is 16.4 by the year ending 1947-48. However, the percentage increase of outturn during that period is only 10.2. In case of pulses, production has increased more than acreage for some time. But after about 1945-46, production lags behind acreage.

The figures, however, do not bring out the success or failure of the Grow More Food Campaign. The divergence between area and production is entirely due to the season or condition factor which is given by the 'annawari', and which is independent of the Government efforts to increase food production except in so far as pest control might improve outturn. The average normal yield was fixed a long time back and the same figure is used irrespective of whether the actual yield has fallen or risen. The above figures, therefore, are entirely useless for our purpose. Only the acreage figures mean anything if we want to find out the success of the campaign. There is no doubt that area under cereals and pulses has increased considerably in West Khandesh district during the last five years. But how much of this increase can be attributed to the campaign is, again, doubtful. Cultivators in West Khandesh complain that the new jarilla variety of cotton introduced by the Government is not yielding as much as the old variety; they are, therefore, giving up cotton cultivation in favour of food-crops and ground-nut. Whether cotton cultivation is decreasing due to the introduction of a new variety or due to the price factor, this much is certain that the increase in the area under food grains is the result, not so much of the Grow More Food Campaign but of some other factors which have brought about a great fall in cotton acreage.

In the absence of any definite statistical data to prove the success or failure of the Grow More Food Campaign, we have to depend upon responsible opinion in the district. The consensus of opinion about the achievements of the campaign is that it has been a failure, considering the huge expenditure incurred on it. The officials, on the other hand, point out that we must not judge the success of the campaign from the first stage upto about 1946-47, which was mainly one of propaganda without any positive steps to help food production, and the second stage of active assistance to the farmers has only just begun, so that some time must be allowed to elapse before we can get any tangible results. Whatever may be the value of this distinction, there is no doubt that people do not regard that the campaign has achieved unqualified success.

Obstacles to Grow More Food Campaign.

The obstacle to the increased production of food grains are mainly four:—(1) inadequate resources of cultivators, (2) differential price advantage for some of the crops other than food grains leading to a keen competition between food crops and these other crops, (3) the upward movement of the cost structure and its effects on efficiency of cultivation, and (4) the psychological factor leading to less efficient cultivation. We shall discuss each of these obstacles in detail.

A study was made of the different resources of the cultivator with a view to finding out whether inadequacy of resources was hampering the growth of food crops. We give below the position in respect of some of the important means of production of the cultivators. We have to take into account three factors in a study of implements of cultivation. These three factors are (i) ownership of the implements (ii) the use of the implements and (iii) area cultivated per owned and used implement. As plough is the most important implement of the cultivator we need not take into account the other implements such as the seed drill, hoe etc, in the present discussion.

In respect of ploughs it was observed that only 7 cultivators out of 109 examined do not possess ploughs. The majority of these cultivators are found in the first two size groups of holdings: 0 to 5 and 5 to 10 acres. It is always possible to hire ploughs if one does not possess the required number. What is important, therefore, is the number of ploughs used rather than the number of ploughs possessed. It was seen that the use of plough was greater than possession of ploughs. There was only one cultivator who did not use a plough; and he, too, gave his field for ploughing to some other cultivator in return for remuneration. The number of cultivators using one plough was 35 and the number of those possessing one plough was 59. On the other hand, the number of cultivators using two or more ploughs was 73 and the number of those owning two or more ploughs was 43.

More important than the number of ploughs, whether owned or used, is the cultivated area per plough. This is the real measure of the adequacy of the existing supply of ploughs. Generally speaking, one plough is required per 15, or at the most 20 acres. On this basis, it is observed that out of 102 persons possessing ploughs, as many as 16 fall on the wrong side of the line determining adequacy. Even if we consider the use of ploughs, out of the 103 cultivators using ploughs six had more area per plough used than the maximum area required for efficient cultivation. The deficiency is noticeable only in the larger size groups. In the lower size groups there may actually be surplus capacity arising out of the need for having a certain amount of fixed capital irrespective of the size of holding.

Another essential part of a cultivator's equipment is the bullock-cart suitable for loading purposes. Out of 109 cultivators examined as many as 34, or 31.2 per cent, do not possess carts. There must be a considerable waste of energy on the part of these cultivators in the movement of manure and seeds to the fields and of the produce to the farm-house or the market.

Cattle.

The next most important component of the cultivator's resources is cattle, especially bullocks, who provide the draught power. Inadequacy of draught power can lead to inefficiency of cultivation and may even result in part of the land remaining uncultivated. A pair of bullocks could formerly till about twenty

acres of dry-crop land and ten acres of garden land. There has been a certain reduction in this area recently because of deterioration in the quality of the cattle. According to this criterion we find that there is some inadequacy of draught power in two out of ten villages, Navari and Dondvad. In the other villages the number of bullocks and he-buffaloes appear to be quite sufficient for cultivating the gross-cropped area of the villages. In the garden or irrigated villages, Kusumbe, Gondur and Mukti, the area per pair of oxen is very low. In 109 cultivators examined 21 cultivators out of 101 owning draught cattle have a smaller number than required for efficient cultivation. Of these, five cultivators are too much on the wrong side. Most of these cultivators are from the larger size groups. It is possible to get bullocks on hire, although not so easily as ploughs. The charges, also, are higher than in case of ploughs. The charges vary from Rs. 4 to Rs. 6 per day per pair; besides, the person hiring the bullocks has to feed them for the period for which they are hired. But even if it is possible to make up the deficiency in the possession of bullocks by hiring them, there is a certain fall in efficiency of cultivation if the cultivator does not own the required draught power. This is because bullocks have to be hired from other cultivators who, however, can hire out their bullocks only after their own work is over. This may result in delay in agricultural operations for cultivators who have to take bullocks on hire. Non-possession of draught power is, thus, likely to lead to inefficiency of cultivation even though it may be possible to correct the inadequacy by hiring bullocks.

Manure.

The manure resources of cultivators form an important consideration in the relation between cultivator's resources and efficiency of cultivation. Cow-dung is still the most widely used manure, although more and more cultivators are now taking to ground-nut cake and manure mixture as subsidiary manures. Compost manure has not yet become popular, but considering its manurial value and cheapness it may well become an important part of the cultivators' resources. The position in regard to ground-nut cake, manure mixture and compost manure has already been discussed under the section "Grow More Food Campaign." Here, we shall merely discuss the position of cow-dung. No definite information for the village as a whole is available. But it is possible to work out, roughly, the farm-yard manure position since we know the number of cattle in the village. A bullock and a cow yield, approximately, 5 cart-loads of cow-dung per year. A buffaloe yields about 7 cart-loads while the young-ones can be taken to yield about 2 cart-loads per year per head. But not all this dung is available for manuring the fields. Part of it may be lost in the jungles and elsewhere when the cattle go out grazing. Part of it is used for preparing floors and plastering walls. And part of it, about three months' supply in some cases is made into cake and burnt as fuel. In general we can say that about 25 per cent of the total supply is not available for manuring the land. An acre of dry-crop land requires about 20 cart-loads of cow-dung if it is to be properly manured. A field is manured once in three years as a general practice in Dhulia taluka. This means

that about $\frac{1}{3}$ of the land is manured in any one year. Garden land, however, is manured twice if it grows two crops. Even if we assume that the manure is used for only $\frac{1}{3}$ of the gross-cropped area every year, we find that except for one village out of ten in all the villages examined the amount of manure per acre of manured gross-cropped area is much below 10 cart-loads; that is, much below even half the required amount. In Anakvadi the position is slightly better because it is a dairy village and, therefore, has more cattle.

Inadequacy of manuring can be more properly understood if we consider the position of the selected cultivators. For this purpose 20 cart-loads per acre is considered as the adequate rate of manuring. Out of the 109 cultivators investigated, as many as 75 showed an inadequate rate of manuring. Of these 75 more than half were using only upto 10 cartloads per acre of manured area. Five cultivators were not manuring their land at all, mainly because they did not own the land they cultivated. Of the 29 cultivators using sufficient manure per acre, some are likely to move into the other class if we consider the fact that they have to manure their garden land twice. The above does not take account of this double manuring and, therefore, the number of cultivators having an inadequate rate of manuring is likely to be more than 75. The inadequacy of cow-dung manure is not restricted to cultivators of any particular size-group, but is found among cultivators of all size-groups. In the biggest size group, 50 to 100 acres, however, the inadequacy seems to be the greatest.

Not only is the rate of manuring inadequate in the case of the majority of the selected cultivators, but the extent of area manured is, also, hopelessly inadequate. The usual practice is to manure a field once in three years; or, in other words, to manure 33.3 per cent of the holding every year. Out of the 109 cultivators examined as many as 97 were not manuring their fields once in three years. 40 cultivators manured their fields once in 10 years or more while 38 manured them once in 5 to 10 years. The distribution of the cultivators according to the size of holding shows that the smaller cultivators are able to manure a greater percentage of their land than the bigger cultivators. In the first size group of 0 to 5 acres the majority of the cultivators manure more than 33.3 per cent of their holding. In the next three size groups *viz.* 5 to 10, 10 to 15 and 15 to 20 the majority of cultivators fall in manure groups 10 to 20 per cent and 21 to 33.2 per cent of their holdings. For the other size groups, however, most of the cultivators fall in the manure group upto 10 per cent. This means that larger the holding, the smaller the part of it that is manured.

The manure position worsens considerably if taken account of the fact that garden land is manured every year and sometimes even twice. Since the garden land is assured of water supply, the cultivators prefer to manure it annually. To that extent the dry-crop or jirayat land is deprived of manure. In our sample of cultivators as many as 31 cultivators out of 109 do not manure their jirayat land at all. As many as 67 other cultivators cannot manure their holdings of dry-crop land adequately; that is they cannot manure at least $\frac{1}{3}$ of their jirayat holding annually.

It is clear from the above discussion that a stage has been reached where determined efforts are required either to increase the supply of Farm Yard manure or to effectively substitute it by providing other equally potent and cheap manure. Cattle manure position has deteriorated considerably during the war. More cattle cannot be maintained, today, because of the scarcity of fodder supply. Cotton seed is difficult to obtain because of fall in cotton cultivation. Ground-nut cultivation is increasing at a great pace, and it threatens to substitute the superior jowar kadbhi by the inferior ground-nut fodder. The amount of grass land and waste land, is, also, decreasing due to the extension of cultivation under the Grow More Food Campaign. If the cattle are sent over long distances to the jungles, part of the manure is lost. Lastly, lack of fuel is cutting a hole in the manure supply. Under the circumstances, increase in cattle manure seems to be very difficult to achieve. On the other hand, no effective substitute for cattle manure has been found. The position of ground-nut cake, manure mixture and compost manure is none too happy. People are not getting cake manure in sufficient quantities while compost manure has yet to catch the imagination of the cultivators. The problem of manure has, thus, assumed very great importance in the context of our continued food shortage. It is proving one of the greatest obstacles to increased food production.

Labour.

The problem of labour, in respect of both the cost of labour and its supply at the opportune time is assuming importance in recent days. Till recently much of the work necessitating additional hands to the cultivator was done on the basis of cooperation. A cash or money basis of labour is, however, gradually developing. Many of the cultivators finish their own work and go for work on other fields for daily wages. Many of the landless persons in the village and many outsiders also offer themselves as labourers in return for wages. There is competitive bidding during the busy season as every one wants to get his work done. The result is a rise in wages. Persons who have money get their work done first, while those who have not sufficient finances have to wait for a long time to get labourers and consequently they sometimes suffer a loss in production. The question of shortage of labour, therefore, becomes important. Out of the 109 cultivators examined 33 found it difficult to get labour in time and, therefore, suffered some loss in output. The reason for the shortage of labour is not merely break-down of the system of cooperative labour. The increasing demand for labour at Dhulia, arising out of the war has drained away some of the surplus labour from the villages. The inevitable result has been a shortage of labour in villages during the busy agricultural season.

Finance.

Due to the break-up of the co-operative system and introduction of money or cash system in the finishing of agricultural operations, cultivators require certain amount of cash to pay off the hired labourers. Payments have, also, to be made for purchase of manure, ground-nut cake and manure mixture from Government and cattle manure from other agencies, and fodder. Finances are, therefore, required

to carry on the agricultural operations. Most of the cultivators do not have the necessary finances and they are, therefore, forced to borrow, the money being repaid after the harvest has been gathered. Before the regulation of money-lending by the Government, money-lenders used to lend money to these cultivators to tide over the seasonal difficulties. Cooperative Societies, also, used to lend, and still continue to do so. A third agency was the 'dalals' or 'brokers' at Dhulia who used to advance money to cultivators for weeding and harvesting in return for a stipulation that these cultivators sold their ground-nut and cotton through them. These 'dalals' were, thus naturally interested in seeing that the cultivators raised more of ground-nut and cotton crops. With the enforcement of the Act regulating money-lending, it has become very difficult to get accommodation from the money-lenders. At the same time the advances of cooperative societies wherever they exist, are not sufficient to cover the expenses of agricultural operations. The result is that many of the cultivators either go to the 'dalals' for getting temporary accommodation or allow their crops to suffer due to delay in carrying out the necessary operations. In both cases production of food grains suffers;—by an emphasis on crops like ground-nut and cotton in the first case and by loss of production in the other.

Out of 109 cultivators examined, 86 had to borrow money for financing agricultural operations. Of these 86 cultivators, 23 resorted entirely to 'dalals' for their needs while 15 had to supplement their borrowings from co-operative societies by advances from 'dalals'. This shows the importance of 'brokers' in supplying the financial needs of cultivators. As has been already pointed out these 'dalals' are interested in the cash crops of the cultivators, mainly ground-nut. They do not advance the money unless the cultivator has already put part of his land under ground nuts. The dealings with the brokers, thus, came in the way of increased food production. The amount given by the 'dalals' is, also, not sufficient and does not often reach the cultivator in proper time. But the shortage of finance is so great that he is almost forced to go to these brokers.

The second obstacle to the increase in food crops is the increased competition between food crops and other crops. The increase in competition is due to a differential price advantage for some of the crops like ground-nut and sugarcane. There are two types of competition in West Khandesh district. Firstly, there is the competition between bajri and jowar on the one hand and ground-nut on the other. This takes place in the kharif season. Secondly, there is competition between Bajri or jowar and wheat on the one hand and sugar-cane on the other. This competition takes place in both the kharif and the rabi season. It has been shown during the discussion of crop pattern that area under ground-nut has increased greatly. The position today is that of the total gross-cropped area of the taluka, 21 per cent is devoted to ground-nuts. Competition with sugarcane, however, is not so important because the acreage under sugarcane is very small, being limited by the availability of irrigation facilities. As the basis of the competition is the greater profitability of ground-nut and sugar-cane. It is not possible to get exact figures of net profit

from the various crops. But an idea can be had from broad figures supplied by some responsible persons in Dhulia taluka. It is estimated that there is a net profit of Rs. 64 in the cultivation of bajri, as compared with Rs. 220 in the cultivation of ground-nut. Even if we suppose that the cultivator sells his bajri in the black market, this gap between the net profits of the two crops continues. The black market price of bajri is Rs. 3 per paylee. This leaves a net profit of Rs. 124 per acre which is very much less than the net profit in ground-nuts. In case of cotton, which has ceased to be a major competing crop now, the net profit per acre comes to about Rs. 60. It can be seen from these figures that there is considerable advantage in the cultivation of ground-nuts. It is in the natural economic course, therefore, that factors of production should be diverted to the production of ground-nuts. Given freedom to plan crop pattern, the only limit to diversion of factor to ground-nut production is the requirements of the cultivators in respect of foodgrains to feed their families and their labourers. The reason for the high net profit in ground-nuts is the high price arising out of the great demand for nuts in the country and abroad. Ground-nut oil is turned into vegetable ghee by hydrogenation. Before the war vegetable ghee was not so popular. Ground-nuts then were not so profitable as today. Before the war the price of nuts was Rs. 5 to Rs. 6 per palla, and net profit per acre was about Rs. 16. Price of bajri before the war was, on the other hand, about 8 to 9 annas per paylee, and net profit was about Rs. 24. Groundnuts were not, therefore, very much popular before the war.

Competition between sugarcane and foodgrains is slightly different from competition between groundnut and food-grains. Sugarcane can occupy the land throughout the year. The same land can yield two crops of food-grains—bajri or jowar and wheat or gram. Exact profitability of the competing crops is difficult to determine. But it is estimated that whereas the net profit on sugarcane per acre is Rs. 170-4-0 it is about Rs. 184 for Bajri and wheat combined. When the prices for gur were better cultivators went in for sugarcane in preference to wheat.

During the year 1947-48, however, prices of 'gur' had collapsed and as a result many cultivators were abandoning sugarcane cultivation in favour of wheat or plantains. At the time of our investigation, therefore, the competition between sugarcane and wheat and bajri had disappeared. The only competition was between bairi or jowar and ground-nut. But this competition has been more important than the competition between wheat and sugarcane because of the extent of acreage involved.

Besides the incentive afforded by a high net profit, groundnut is preferred by many cultivators because of four reasons: (i) ground-nut is ready for harvesting earlier than food crops, so that it is very useful for providing the money that is required for the harvesting of food crops, (ii) ground-nut crop requires less work and so it is preferred to food crops, (iii) ground-nut can yield well even in poor soil, so that in the lighter soils it is preferred to food crops, (iv) due to the great increase in the cost of cultivation of all crops, cultivators are greatly in need of cash. They, therefore, turn to a cash crop like ground-nut to supply their needs.

The third obstacle to the increase in food production, or in the production of any other agricultural commodity for that matter, is the upward movement of the cost structure in agriculture. The question of the cost structure becomes very important in agriculture because of two things: There is, firstly, a big time lag between input and output. This makes it necessary to incur costs in anticipation of a particular output. Secondly, as a result of the dependence of agriculture on natural forces, the output is not always certain. Agriculture is, in many ways, a gamble, and if the cost structure is very high the cultivator may be unwilling to take the risk. Further, it will be seen later on how the upward movement of the cost structure can affect efficiency because the cultivator may try to defer some of the expenditure although it means lower efficiency. Cost structure in agriculture consists of mainly four items; (i) labour charges; (ii) draught power charges consisting of fodder cost and replacement cost of bullocks; (iii) seed and manure charges; and (iv) replacement cost of implements.

Labour: As far as labour is concerned we may note that the wages of the permanent servant or 'saldar' have risen from Rs. 90 plus one 'map' grain annually before the war to Rs. 225 to 250 plus $1\frac{1}{2}$ 'map' grain at the present date. The daily wages have risen from five annas to about Rs. 2. In rush time the wages go up to even Rs. 3. While wages have increased, working hours have decreased. When the wages rise steeply during rush time, the poorer cultivators are often required to wait their turn. The delay, not infrequently, causes a reduction in production.

Draught power: Draught power charges are causing great anxiety to the cultivators. Prices of fodder have gone up so much that it is very difficult to feed the cattle properly. Home fodder, in many cases, is not sufficient for the cattle. The increase of ground-nut cultivation has increased the supply of poor quality ground-nut fodder. Prices of Jowar 'kadbi' on the other hand, have risen from Rs. 6 for 100 lbs to Rs. 50 per 100 lbs. Grazing the cattle on waste lands or grass lands is also becoming difficult with the extension of cultivation to hitherto uncultivated lands. Further, some of the essential ingredients in cattle feed are now very difficult to obtain. 'Sarki' or cotton seed, ground-nut cake and kulith have to be fed to bullocks in large quantities. Rise in the prices of these things has made it difficult for the cultivator to maintain the energy and efficiency of his bullocks. There is a definite lowering of the efficiency of draught power and cultivation often suffers from this. There is another cause for the lowering of the efficiency of bullocks. The prices of bullocks have gone up from about Rs. 150 per pair to about Rs. 1000 per pair. Many of the cultivators cannot afford to pay these prices. They, therefore, purchase cheaper bullocks for Rs. 600 to Rs. 800 per pair. There is a consequent reduction in the efficiency of the draught power. If a good bullock can, say, irrigate land for two months, the cheaper bullock can hardly do it for a month.

Seed and manure charges: This item is not so important because most of the seed used is home produced. Many of the cultivators who purchase seeds

do not pay cash but promise to return $1\frac{1}{2}$ times or twice the amount purchased. This system prevailed even before the war so that we cannot say that the cost of seed has increased greatly. So far as the purchase of manure is concerned, we must note that two kinds of manure are used: one is the cattle manure, or cow-dung, which is the most popular of the two kinds, the other is ground-nut cake, ammonium sulphate and manure mixture. This second kind of manure is supplied by Government at concession rates and so the question of cost is not important in its case. It is cattle manure that is important. Out of the 109 cultivators examined as many as 35 were purchasing cow-dung manure. Before the war, a cart-load of cattle manure could be purchased for eight annas to a rupee. The average price per cart now is Rs. 5. The steep rise in the prices of cattle manure is forcing many cultivators to go without adequate manuring. We have already seen to what extent manuring is inadequate in Dhulia taluka. Before the war many of the cultivators used to purchase cow-dung to make up the deficiency. But now due to the high prices of cattle manure they have to lower the rate of manuring.

Replacement cost of implements:—The cost of repairing and of replacing some of the implements like the plough, the cart, the 'mot' etc., has gone up tremendously in West Khandesh district. Formerly a plough could be had for about Rs. 8 to Rs. 10. Now it costs about fifty rupees. Prices of other implements have also, gone up. Shortage of iron forces many cultivators to get their 'mots' from the black market at exorbitant prices. The result of the high cost of implements and of their repairs is that the cultivator may often postpone some of the repairs and replacements and may, thereby, lower the efficiency of cultivation.

The fourth obstacle in the way of increased food production and agricultural production in general is the peculiar psychological phenomenon of the lack of inner urge to work hard and improve one's standard of living. The cultivators and labourers, today, are not prepared to undergo any hard work to improve their lands, to improve their cattle and to produce such subsidiary foods as vegetables, eggs, poultry, milk, etc. Much of the land can be made to yield better if slight improvements are made. Lot of land which, to-day, is lying fallow because of nallas and similar causes may be easily brought under cultivation again if the cultivators exert themselves slightly. The natural result of this slackness on the part of cultivators has been that efficiency of cultivation, today, is lower than it was formerly. This slackness has not been the result of war alone. It has been coming on gradually for decades almost unnoticed. The need for emphasising the psychological obstacle to increased agricultural production arises from the fact that many persons are apt to regard the food problem as only a temporary problem to be tackled by temporary expedients. They forget that the problem has its roots in the past and that it can be tackled only as a part of the wider problem of the reconstruction of our agriculture.

Conclusion.

From the foregoing analysis, the following points emerge:—

(1) There are no definite means for measuring the success or failure of the Grow More Food Campaign. But the consensus of opinion is that its achievements are not commensurate with the expenditure involved.

(2) There has been an increase in the area under food-grains during the past five years. But how much of this increase is due to the Grow More Food Campaign and how much due to the fall in the cotton cultivation arising out of certain factors independent of the Campaign, cannot be ascertained.

(3) The Campaign has not been very successful because of three main defects in the schemes:— (a) failure to enthuse the people; (b) lack of supervision and check on the assistance given, which has led to leakages in the schemes; (c) disregard of some of the basic principles of planning.

(4) Besides the defects in the schemes themselves there are four factors in the agriculture of Dhulia which are hindering the increased production of food grains: (a) lack of certain resources on the part of cultivators, the most important of which is cattle manure; (b) keen competition between food-grains and ground-nut resulting from higher net profitability of ground-nut; (c) upward movement of the cost structure in agriculture leading to inefficiency of cultivation; (d) lack of willingness to work on the part of cultivators, resulting in inefficient cultivation.

(5) The food problem is really a part of the general problem of rural reconstruction.

(6) The food problem is, also, a part of our general economic problem. It must be considered not only by itself but also in the light of the need for cotton to feed our textile industry and in the light of the fact that ground-nuts and other non-food grains may prove valuable as dollar earners.

F.A.O. MISSIONS TO GREECE, SIAM AND POLAND AND CHINA-U.S.A.,
PHILIPPINES-U.S.A. AND SYRIA-U.S.A. JOINT MISSIONS.

[We publish below a summary of three Reports of F.A.O. Agricultural Missions to Greece, Poland and Siam and three Reports of Agricultural Missions to China, Syria and Philippines undertaken jointly with the U.S.A. experts. These reports are very useful and their recommendations can be adopted in India with great profit. Our main purpose in publishing the summaries is that it may induce our State Governments to appoint similar missions for their respective states and use their findings and recommendations as basis for formulating their policies in the right directions. We feel that policies and measures can be successfully implemented if they are based on solid foundation of facts as interpreted by experts in the subject.]

An F.A.O. Mission consists of a group of experts usually drawn from several countries which goes to a country or region to study at first hand a given problem or group of problems related to food, agriculture, forestry or fisheries. On the basis