

FOR PRIVATE CIRCULATION ONLY

# WHITHER CO-OPERATIVE FARMING?

*By*







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## FOREWORD

I congratulate Sri Charan Singh on this excellent book. One need not agree with all his conclusions to admit that it is a most timely publication.

Agriculture has always occupied a very important place in Indian economy. We had several important industries in the past and the products of our looms had earned a great distinction for themselves in the markets of the world. Today, we are launching upon a powerful drive for industrialisation. We wish, and quite rightly, to produce goods that will not only meet our own requirements but find a market for themselves outside the country and, incidentally, earn foreign exchange for us. But no matter what happens, we cannot afford to relegate agriculture to a secondary position. The success of our industrial schemes in the Second and subsequent Five Year Plans depends upon the avoidance of inflation and this, in its turn, depends upon the supply of consumer goods keeping pace with the amounts of money that will become available to the ever-increasing number of workers of all grades who will gain employment as the years go by. Among people with a low standard of life, expenditure on food occupies a position of primacy. The production of food must, therefore, go up considerably. Incidentally, this will save us the crores of rupees which, little as we can afford this, we have to spend upon the purchase of food abroad. It is the acceptance of this unescapable logic which has prompted the Planning Commission to place before the country the figure of 40% above the production of the previous quinquennium as the target for the current five-year period.

There may be some difference of opinion about emphasis and priority but, quite obviously, it is common ground that there should be the fullest exploitation of all those means—water, manure, good seeds—which conduce to improvement in Agriculture. On the one hand, soil erosion has to be combated, on the other new land has, where possible, to be brought under the plough. Systems of land tenure which hamper initiative have to be abolished and the latest techniques, based on scientific research and the experience of other lands, have to be brought to the knowledge of our farmer. All this sounds like a repetition of conventional truisms but it is the cumulative effect of these measures which, in the end, determines the distance between prosperity and penury.

There are many, however, who believe that this line of approach does not go far enough. They feel that our salvation lies in large-scale farming. What they say cannot be lightly brushed aside. There are obvious advantages in having large farms. The experience of countries like the United States bears this out. They feed themselves and are able to sell their grain outside with considerable profit. After the Revolution, Russia also went in for large-scale farming. There are obvious differences between the American and the Russian patterns. In the former case, the farms are owned by individual farmers; in the latter, they are collectives, which are units very much similar to factories, where the producer has the status merely of a workman, working for wages. In either case, a much smaller number of people would be employed than would be possible if the plots were cut up into economic holdings belonging to individuals. It would not be irrelevant to take into account the questions of principle involved in a consideration of the relative merits of these systems. Capitalism, Socialism, Communism and Democracy all these will claim our attention. And it would be unwise to ignore the heavy price in blood and tears, that will have to be paid if we decide to exchange small-scale peasant proprietorship for large farms, whether under individual or collectivised control. And then there is the problem of our increasing population, with its already high percentage of unemployed and under-employed people. Both the United States and Russia have larger areas and smaller populations than India. It would be a piece of criminal folly to create a new class of unemployed men by trying to change our present system in a hurry before we have made sure that everyone thrown out of employment as a result of the change will find gainful employment elsewhere.

The dangers inherent in attempting a change-over to either of these two patterns are realised by many people who are, never-the-less, convinced that our salvation lies in large-scale farms. It is in this context that the slogan of co-operative farming is raised. It is believed to combine the psychological virtues of peasant proprietorship with the practical advantages of big farming. There is no forcible dislodgment from their holdings of large numbers of middle-class cultivators and no incitement to the farmer to destroy his live-stock and under-cultivate his holding, which hampered for such a long time the steps taken to instal collective farming in Russia. If reports received from Russia now and then are to be believed, such sabotage has not entirely ceased even now and is a perpetual headache to the Communist Party in Russia and the Government of the USSR. China, we are told, has adopted the Co-

operative Farming pattern very rapidly and has made marvellous progress in agriculture as a result. We are invited to follow in her footsteps. We have received copious reports about the work accomplished in China and some of our most distinguished leaders have exhorted us to adopt this system as quickly as possible.

The question, therefore, is no longer one of merely academic interest. It has, within the last few months, acquired a great importance and urgency. Decisions of a vital nature affecting many intricate aspects of our corporate life have to be taken. Not only the economic but the social set-up of rural life will be profoundly changed and the laws concerning land-tenure and even inheritance cannot remain un-affected for long.

It is necessary, therefore, not to be carried away by catch-words and slogans but to study the question in all its aspects dispassionately. The whole future of the nation can be altered for the worse by an unwise decision. It is the duty of those who are in a position to take decisions affecting the lives and fortunes of crores of men, born and un-born, not to be rushed into adopting hasty measures. Delay, is, after all, only delay but undue haste may spell disaster,

Sri Charan Singh has provided all of us with sample material for thought. He is convinced that co-operative farming will end in an expensive failure and has collected facts and figures from authentic and varied sources, including some from Russia itself, to show that collective farming has belied the expectations raised by it. It must be remembered, as he points out, that co-operative farming is only a first step towards collectivization. He has not had time to analyse the social and other implications of the measure. Probably, he will do so in a subsequent edition.

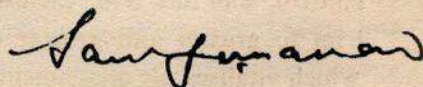
This is not to say that Sri Charan Singh is against co-operation in general, nor should it be supposed that he is of the opinion that there is no room for co-operation in Indian agriculture. Either assumption would be extremely unfair to him. He has shown that there are several things which can be done efficiently only by following co-operative methods. In fact, I believe that he would himself admit, if the question were squarely put to him, that it is quite conceivable that in certain conditions, other than those obtaining in India, today co-operative, or even collective farming might be the best method that can be adopted. In the midst of all his generalizations, he never allows himself to lose

sight of those circumstances in which the Indian agriculturist has to function. As he has stressed more than once, whatever scheme we adopt, we have to remember that we have to exploit our man-power to the full. A parallel from Industry would not be inopportune. Whenever the question of rationalisation, as the term is understood in the West, is raised by industrialists, the reply is given and quite correctly that we have to gear our techniques not to a purely production economy but to an employment-cum-production economy. This is no less true of Agriculture. There is the further point which Sri Charan Singh studies appear to lead to, that the law of diminishing returns comes into operation at a very early stage in Agriculture. According to him, when large scale farming does not pay.

I have the greatest pleasure in commending this book to every serious student of the subject. It may be that in his enthusiasm, he has laid what some might consider to be undue emphasis on certain facts and figures or read into them more than their legitimate meaning. This is understandable and excusable. But it will be clear that he has not been deliberately unfair and has not suppressed facts that might seem to controvert his main thesis. To a large extent, I find myself in agreement with him. It seems to me that the consolidation of holdings which we are carrying out in Uttar Pradesh is itself a great step and the results of this experiment should be watched carefully and with sympathy before we launch upon another. I find no incompatibility between the type of peasant proprietorship which we visualize and the socialist pattern of society which is our ultimate goal.

Banaras,

28th December, 1956.



(SAMPURNANAND)

# PREFACE

"The time has come," the Warlus said,  
"To talk of many things"...

—LEWIS CARROL.

Zamindari and the like systems have all but disappeared from this country, thanks to the farsightedness of our leaders. The peasant is rapidly coming into his own. While the results of this stupendous reform are still in the process of crystallising, the cry has gone forth that we should switch over from peasant farming to an economy of large co-operative farms established by farmers pooling their lands and placing them under a common management. Examples, particularly of Russia and China, are suggestively quoted on the basis of surprisingly superficial observations and merest hearsay. The Planning Commission has given consideration to the matter and made certain recommendations favouring the idea, albeit cautiously. The purpose of this brochure is to urge dispassionate and renewed thinking on the subject.

The replacement of farm tenancy by peasant proprietorship effects no change in the soil, nor in the production technique; yet it raises production. That has been the experience all the world over. Statistics can be quoted in support, but it is unnecessary to do so in view of the wide and unquestioning acceptance of the proposition. The reason is that it generates forces which stimulate the free development of the peasant's personality. The thought that land has become his and his children's in perpetuity lightens and cheers his labours and expands his horizon. The feeling that he is his own master, subject to no outside control, and has free, exclusive and untrammelled use of his land drives him to greater and greater effort. He receives a psychological fillip which vitalises his attachment and devotion to the land. In other words, although the abolition of landlordism does not affect the farm, it powerfully affects the farmer. Likewise, any system of large-scale farming in which his holdings are pooled must affect the farmer, but in the reverse direction. No longer will he be his own master; he will become one of the many; his interest will be subordinated to the group interest; he will have to submit to the control and direction of the group management. Even if the right to secede at will is preserved in theory, in practice it will nearly always be found that the seceder cannot be given back his land, for such restoration will be detrimental to group interests; he will have to be content with its money equivalent. The forces released by zamindari abolition will suffer a reaction, and one should in conse-

quence expect a fall in production. This is in fact what happens. Inside these pages will be found factual evidence, derived from authentic sources and pertaining to several countries whence reliable figures are available, that per-acre production falls as the size of farm increases. In the case of a co-operative farm it will be a case of too many cooks. In a word, if zamindari abolition is psychologically right, co-operative farming is psychologically wrong.

The co-operative principle has undoubtedly a very fruitful mission in the field of agriculture, but when stretched to the point of merger of holdings, it violates the essence of true co-operation. Independent business men 'co-operate' to remove individual disabilities, but when independence itself is compromised and the farmer is reduced to a farm hand, it is not a case of true co-operation. It is preparing the ground for authoritarian control. A self-elected few will exploit the simplicity, ignorance, credulity and lethargy of the overwhelming majority and dominate the co-operative farms. They will lean on officialdom for support and support it in return. In place of the intermediaries we have liquidated, shall we create a new class of intermediaries, with the same hard core, but more powerfully entrenched and masquerading as the spear-head of a new co-operative movement? These local satraps, old nuts in new nutshells, will slowly but surely undermine the base of our nascent democracy. Sovereignty resides in the people and for that reason our Constitution guarantees fundamental rights to the individual. To the extent that the individual is hampered in the proper appreciation and free exercise of the fundamental rights, to the extent that his personality is cramped, to the extent that his independence of thought and action is subjected to extraneous control, to the extent that his destiny ceases to be his sole concern, the seat of sovereignty will tend to shift from the all to the few, and we will have taken the road to regimentation and totalitarianism.

Large-scale farming, whether co-operative, collective or of any other pattern, inevitably attracts mechanisation. In fact, the popular but erroneous belief that mechanisation increases production is used as an argument for the introduction of co-operative farming. Whatever may be true of countries with different soils, different climatic and rainfall conditions, and differently placed in the map of the world, such researches as have been carried out in this country prove that mechanised tilling reduces, not enhances, the yield. Mechanised cultivation on large farms may pay in money; it cannot pay in greater tonnage. In our circumstances every ounce matters.

The other effects of the displacement of human and animal power by petrol and diesel on our economy may be easily foreseen. Unemployment will be accentuated. Import of machinery and motive power will strain our none too sufficient exchange resources. Little reflection is needed to show that in our circumstances industrialisation cannot keep pace with the unemployment that will immediately result from any large-scale pooling of lands. Co-operative farming as an instrument of national policy has thus a very important human aspect.

It is not generally realised that a diminution of cattle wealth which will irresistibly follow from the replacement of the bullock by the tractor will be a calamity. Farm-yard manure will become scarce and increasing use will have to be made of chemical fertilisers. Evidence collected in this brochure will prove that the use of inorganic fertilisers tends to reduce soil fertility, even though the immediate results may be striking. Organic manure, on the other hand, maintains fertility and makes the soil an inexhaustible source of food supply. It is not without good reason that our agricultural experts do not now advise unadulterated use of synthetic sulphates and phosphates. Let us not too hastily embark upon a venture for which posterity may condemn us.

In short, large-scale farming will reduce production, injure the democratic principles which we cherish, invite bureaucratic control, and lead to rapid mechanisation with all its consequences. Peasant farming, on the other hand, will enable us to steer a path which may not be spectacular, but which will ensure that we do not abruptly go off the rails.

This is not to say that we have no agricultural problems. Heaven help us, we have problems galore and they will require all our energy, skill and administrative acumen. A reference has been made to them in this brochure and lines of approach suggested, but a detailed discussion is beyond the purview of this attempt.

I am greatly indebted to Shri J. Nigam, I.C.S., Land Reforms Commissioner, Uttar Pradesh, for having found time, in spite of his preoccupations, to go through the draft of this brochure and for making useful suggestions. I am also grateful to Shri Zahurul Hasan, Revenue Secretary, for his assistance in reviewing the brochure. My sincere thanks are also due to Shri S. C. Chaturvedi, Statistician to the State Government, for helping me with many of the Statistics.

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## CHAPTER I

### INTRODUCTORY.

Living creates wants which can be satisfied only by use and consumption of goods, collectively called wealth. Wealth is ultimately derived from land. Raw materials must be produced before they can be processed and distributed, and food which, day by day, is necessary to life is mostly obtained from land. Exploitation of land, or agriculture in the narrower sense, is thus obviously the primary and basic industry. Manufacture and commerce, however, important they may be in the the economy of a country; must of necessity occupy a secondary place.

While land suffers from the limitation that it cannot be increased by any efforts that man may make, it has the supreme advantage of becoming better and better by proper use. All other forms of capital, houses, factories locomotives, battleships, etc. deteriorate or disintegrate and are ultimately destroyed, howsoever carefully they may be used, but land never. It is this inexhaustibility of land that gives those directly engaged in working it, a feeling of security which no other means of occupation can offer. Land never disillusion a man completely; the hope of plenty in the future always remains, and is not infrequently realized.

Obviously enough, the prosperity of a country depends in the ultimate analysis on how efficiently it exploits and, at the same time, conserve this free gift of Nature. Even the form of society or civilization that a country hopes to develop will be influenced by the manner in which it exploits the land, and by its land-tenure. "Measures of land reform", observes the planning Commission, "have a place of special significance, both because they provide the social, economic and institutional frame-work for agricultural development and because of the influence they exert on the life of the majority of the population. Indeed, their impact extends much beyond rural economy" (Second Five Year Plan, page 177). This is specially true of those countries like China, Turkey, Rumania, Yugo-slavia, India and the USSR where large percentages of population ranging between 73 and 57 earn their living by directly working on the soil.

India inherited from the British a feudal or landlord-tenant system called zamindari, in which ownership of land was concentrated

in the hands of a few, while the vast majority who worked day and night on the land were mere tenants. The growth and development of democratic institutions are closely related to the national income of the country and the distribution thereof. In an under-developed country like India, income directly derived from land is the chief source of wealth and ownership of land has since long been accepted as the prevailing standard of status. Land reform, therefore, was the one economic organisational change which must be brought about before an over-all programme of social reconstruction can be contemplated, before a more productive economy can be built up, before, in fact, we can dream of making democracy a success.

Landlords performed no economic functions: the lands which were tilled by the tenants would not produce less if the landlords disappeared. They rendered no service in return for the rent they received and were, in the truest sense of the term, parasites or 'drones doing no good in the public hive.'

That man alone is truly happy who is not subservient to another in the economic sphere. Under the zamindari system, however, the tenant was not free: somebody else was the owner of the patch of land on which he toiled along with members of his family. In most parts of the country there was no property he could cherish; he was liable to ejection, in many cases at the sweet will of the zamindar. Nor could he claim social equality with the latter, for, status in the village was determined by rights in land.

Agricultural data from all over the world show that farm tenancy reduces output. The abolition of landlordism was not, therefore, just a matter of social justice to peasants: if agricultural production was to be increased, if the peasants' energetic participation in the country's economy was to be secured, he was to be given that hold on the land which met his deepest desire. He was to be made the owner of the land he tilled,

The landlord-tenant system created classes and, therefore, led to class war. While the tenant pined for safeguards against capricious eviction, real security of tenure was odious to the zamindar. The State tried to strike a balance. Yet the conflict inherent in the system was never resolved. It led to economic and political unrest. The big zamindars mostly stood for political reaction; they were the props of British rule and dreaded a democratic set-up.

For these and other reasons leaders of the country decided years ago that, if the decks were to be cleared for social and economic reform and for political stability, the feudal, landlord-tenant system had to go.

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## CHAPTER II

### TYPES OF AGRARIAN ORGANISATION

The landlord-tenant system has departed from almost all the States and consolidation of holdings is going apace in some. But neither the change in ownership and legal relations, nor consolidation of holdings with all its benefits, can have much effect on either the size of the farm or the type of farming. So the question of the future agrarian organisation, not only as an economic and technical but also as a social problem, has yet to be stated and answered: is land consolidation the last step or is it merely an intermediate stage—a prelude to something else? There is confusion in the public mind on this crucial issue.

There are three alternatives before us, viz :—

- (1) Land can continue to be operated in small units, not by bonded tenantry as hitherto, but by an independent peasantry with or without the assistance of some hired labour;
- (2) We can have large private farms worked with hired labour; or
- (3) We can have large joint farms constituted by peasant farmers pooling their holdings voluntarily or under compulsion, and which are worked with joint or collective labour.

Small-scale peasant farming and large-scale private farming need no explaining. Nor is joint farming today an altogether novel device. It has been used for a number of years in several countries, notably in Soviet Russia, Mexico and Israel. The Soviet type has just been ushered in China. It will be useful to make a rapid review of the working of the system in these countries.

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## CHAPTER III

### FEATURES OF MODERN JOINT FARMING \*

In Soviet Russia, as a consequence of the Bolshevik Revolution carried out under the slogan of 'Peace and Bread', all land was distributed among the peasants. The result was a splitting-up of all the land into some 25,000,000 small farms, each of them capable of producing barely more than was needed by the peasant's own family. Little, if anything, was left to supply the cities. To run his farm, the small peasant needed credits, and obtained them from the wealthier farmer, the "kulak". Both the deficiency of marketable output and the dominance of the middleclass "kulak" presented to the new Soviet state grave problems which had to be solved in terms of their Marxist ideology.

Following the industrial pattern, the Communists argued that farming had to become mechanized. If the peasants could be induced to pool their land and use the machinery in common, not only would the dominance of the Kulaks be broken but marketable surplus would also be better mobilised. In addition, large-scale joint farming by mechanical means would reduce the number of hands needed in agriculture, and thus free them for use in industry, the expansion of which was, in turn, the *sine quo non* of the mechanisation of agriculture.

A Kolkhoz is formed when several peasants living in the same neighbourhood decide — or are induced to make the decision — to socialize their "basic means of production", i. e. labour, soil, draught beasts, farm structures, and implements, while keeping their individual homes, a small garden, a few livestock, poultry and the like, for themselves. Membership is open to all toilers who have reached the age of sixteen, and who are willing to comply with the established rules and regulations. Application for membership to an already established Kolkhoz is taken up, first by the Management Committee of the Kolkhoz and is, legally, subject to the approval of the General Assembly. If accepted, the member pays an admission fee which varies in accordance with his previous status. Excluded from membership are 'Kulaks' and people deprived of their Civil rights. Exceptions are made in the case of families who count among their members a soldier, sailor, or village teacher who is ready to recommend the applicant. Interesting

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\*Account of joint farming in Russia, Mexico and Palestine is based on Henrik F. Infield's article published in the "Year-book of Agricultural Co-operation", 1951.

enough, and a sidelight on the effect of collectivization when ordered from above, is the provision barring peasants "who, before joining the collective farm, slaughter or sell their cattle, get rid of their stock, or wantonly sell their seed corn."

The collective Ejido can be considered as a sub-type of the Kolkhoz. Ejidos are the new land settlements which were first formed in Mexico under the agrarian reforms of 1915. They are the off-spring of discontent among labourers in a country of large-scale capitalist farming. There must be at least twenty eligible males to form a group which petitions the Government for land. They must own no more than 2,500 pesos, or be of low income status. If the group can lay claim to land that once belonged to them, the land is "restored" to them; if their only claim is landlessness, land expropriated from wealthy land-owners (hacendados) is "donated" to them. Both processes are quite protracted and cumbersome, and open to many profiteering practices on the part of the administrative personnel. The allotted land is given to the group in common possession. The members are free to decide whether they want to divide it up and work it individually, or whether they prefer to run it collectively. No admission fee is charged, but each member of the group applying for land must contribute his share to the expenses incurred in the process of land assignment.

While the Kolkhoz and the Ejido owe their establishment to administrative measures, the Kvutza grew, out of the spontaneous decisions of those who first shaped its essential socio-economic structure. A particularly acute situation arose in connection with the requirements of Zionist resettlement. The development of Jewish agriculture in Palestine faced two main obstacles: (1) the extremely poor quality of available soil; and (2) the almost complete lack of agricultural experience on the part of the prospective settlers. Progress along the lines of traditional individual settlement proved to be so slow as to make prospects for success in the near future very doubtful. The only alternative which offered itself under these circumstances was that of group-settlement. There was in-fact hardly a choice in the matter. The question appeared to be rather one of either group settlement, or no settlement at all. The type of settlement which emerged has since become widely known under the name Kvutza or Kibbutz.

There was a small group of people devoted to the task of building a Jewish home in Palestine, who, after freeing themselves from the uncongenial supervision of a professional agronomist, step by step,

experimentally testing their way ahead, developed out of their own free decision what is to-day called Kvutza or Kibbutz. Once this small group of pioneers had set the pattern, and others in relatively large numbers had begun to emulate it, the formation of a Kvutza became formalized. To-day there are two possible ways in which one can join such a settlement; or one may join a group which prepares for settlement. To be eligible, in both cases, one must be a Zionist, over eighteen years of age, in good health, and of good character. In the first case, one serves as a candidate for a period of six months to a year, during which time he enjoys virtually all rights of membership with the exception of a vote. At the end of this period the case of the candidate is brought before the General Assembly, which decides about his or her admission. No admission or any other fee is paid, but the new member is expected to put all his possessions into the pool. In the second case, the applicant takes part in a training which begins often prior to emigration to Palestine, in one of the Pioneer Training Farms. This training is so devised as to develop the aspirant's capacity for working and living together with others aiming at the same goal. Groups thus prepared form a "nucleus" (grain) which stays together after immigration to Israel. They continue for a shorter or longer period, their preparation, while handling all affairs communally, until the time when they are assigned land for settlement. The period from the start of preparation to final settlement used formerly to last sometimes as long as five years. The establishment of the State of Israel made larger areas available for agricultural settlement, and the waiting period has been shortened considerably.

The Kolkhoz, the Ejido, and the Kvutza are alike in their theoretical adherence to the principles of co-operation. The internal administration of all three is based on the Rochdale Principles. It is only that, true to their nature as communities, all three had to modify some of these principles to make them fit their specific requirements. One of these principles is that of open membership. Community implies more than limited economic activity; it means living as well as working together. Moreover, community is also naturally restricted by the extent of the geographic area on which it is located. Because of these and other reasons membership in a community cannot be open in the same sense as it is, for instance, in a consumers' store. For this reason the admission of members has to be subject to requirements stricter than those imposed in co-operatives of more limited aims. None of the communities in question allows, however, any restrictions because of race or religion.

Another principle which had to be modified when applied to the concrete community situation is that of distribution of dividends according to the amount of purchase. Since the most important aspect of participation in these joint enterprises is that of shared labour, distribution of net profits according to the amount of purchase would make little sense. The practice followed in all three instances is rather, to take the amount of labour contributed as the main basis for the equitable distribution of profit.

As to the remaining principles, the practice in all three instances, is identical with that in any other genuinely co-operative association. No member has more than one vote; only nominal interest, if any, is paid on investment; all members have equal rights, there being no distinction on account of sex; there are regular meetings at which the members participate in decisions; and finally, rules of proper auditing are observed.

In all three, it is the General Assembly of all members which is designed as the highest authority in all the internal affairs of the group. The practice of delegating the conduct and supervision of the community's business to elected committees is common. Admission, punishment, and expulsion of members vests, by law, in the hands of the General Assembly.

Although theoretically autonomous, the kolkhoz and the Ejido are much more dependent on Government-controlled agencies than the Kvutza. The Kolkhoz is part of a planned economy. It depends, therefore, on decisions made by the State authorities, particularly the Gosplan (the National Planning Commission). What is more important, it is under the direct control of the so-called Machine and Tractor Station, which started as a machine-lending centre, and has since become the "heart and centre of the local agricultural administration." To-day the M. T. S. provides the Kolkhoz not only with all large-scale machinery, its staff but also trains the members in the required skills, and advises them on rotation of crops, the proper use of fertilizers, soil-conservation, and other related problems. Above all the MTS enforces the delivery of that part of the farm produce which the state claims as its share. All the M. T. S.'s are to-day run by the state. Their number rose from 158 in 1930 to some 7,000 prior to the outbreak of the last war: in 1954 the number stood at 8,400.

A similar, though less stringent, supervision is exercised by the state in the case of the collective Ejido. Here there are two main supervising

agencies : (1) The National Agrarian Commission which, through State Commissions, directs the establishment of the settlements; and (2) The National Bank of Ejido Credit which, in addition to furnishing the funds necessary for the running of the settlements, exerts supervisory functions similar to those of the M. T. S. The Ejido Bank has been described as a combination of banker, agricultural expert, family doctor, school teacher, lawyer, athletic director, and personal adviser of the Ejido.

It is true that the Kvutza, too, has received both land and credits from the Jewish National Fund and the Foundation Fund respectively. From the moment of its formation, however, it has always been essentially on its own. In all its relations to the administrative agencies the role of the Kvutza has been that of a "contract-partner" rather than that of a "controlled dependent"

More marked than any other is the difference in the extent to which co-operation determines the internal activities of the three farm types. Only large-scale agricultural production is carried on jointly in the Kolkhoz and the Ejido. In both, work is done by the members themselves; outside labour may be hired only in times of emergency. In the Kolkhoz the members form "work-brigades" composed of five to fifty members, depending on the specific assignment which is made by the Executive Board. Each brigade is directed by a foreman. In the Ejido, work is organized less strictly, but each member must obey the orders of the elected work-chief. An indicative provision of the Model-Rules, which regulate work relations, is the one that forbids the members to accept any outside work as long as the Ejido itself is in need of their labour.

Co-operation thus limited requires a rather complicated and cumbersome method of accounting. There are two sources of income for the members of the Kolkhoz and the Ejido. One is derived from the individual sector of production which still exists but is gradually dwindling away: an acre or less of land, a cow, some pigs, and so on, in the Kolkhoz; and some small animals, like poultry and pigs, in the Ejido. The main source of income, however, is large-scale, jointly run agriculture. In both the Kolkhoz and the Ejido the members' share in the harvests is based on the number of labour-days contributed during the year. In the Kolkhoz this share is calculated after deduction for taxes, reserves, construction and repairs, on the basis of a measure called "Work-day" (trudoden). This measure is both quantitative and qualita-

tive; an unskilled labourer will require more hours than a skilled one to fill his "trudoden". In the Ejido there are three kinds of compensation for work: (1) wages, which differ according to skill; (2) piece-rates, paid during the cotton-picking season; and (3) equal shares in the common profit. Work on community projects, school-buildings, meeting halls, roads, is done without any compensation.

The more restrictive aspect of the work-relations in Kolkhoz and Ejido is reflected in the measures needed to enforce discipline. Punishment is provided in the Kolkhoz for violations like failure to carry out assignments or to fulfil social obligations; for absence from work without adequate excuse; and for negligence in handling equipment and livestock. The punishment may range from reprimand or warning to temporary suspension and fine, or even to expulsion. In the Ejido the utmost penalty is imposed for: (1) continued lack of willingness to work under the direction of the elected authorities; (2) creating disorders; (3) agitation against the collective system; (4) robbery and other criminal offences.

Compared with all this, the system of the Kvutza is simplicity itself. The Kvutza has no use for work-cards, advance wages, shares in profit; nor does it need any measures of punishment. In the Kvutza, production, consumption, as well as all social activities are co-operative, and every body is trusted to work according to his best abilities, and to claim from the commonly available goods a share in accord with his own needs. If a member works on the outside, his earnings go into the group's common purse. No penalty has to be stipulated for absence from work or, for that matter, for any other offence. This does not mean that violations do not occur. They are dealt with in a spirit of "family" persuasion and admonition. Expulsions are extremely rare.

The organization of Kvutza or Kibbutz is probably the most complete form of communism, in the non-political sense of the word, that the world has known outside monastic communities. Land is not owned, but leased, usually from the Jewish National Fund. Members, who may be men or women, bring in little or no capital of their own; initial resources are provided by loans from various Zionist funds, and the 'own capital' of the kibbutz is accumulated gradually out of annual surpluses. In its dealings with the outside world, the kibbutz is on a money economy, and its accounts are kept in that form. Internally, no money passes. Members eat in the common dining-room and receive from the common store clothing which is washed and mended at a common

laundry. From the common store they draw also personal needs and comforts such as soap and cigarettes. As the settlement becomes established, cottages or small blocks of flats are built, in which each worker or married couple is allotted a room. The furniture of these rooms, books, pictures, wireless sets or musical instruments, are their only personal possessions. These may be allocated from the property of the kibbutz, given by friends or purchased from the allowance, usually about £ 20, which each member receives for an annual holiday. There are no wages and no individual allocation of surplus at the end of the year. If there is a surplus it is used to improve communal services or amenities. A member who leaves has no right to any share in the common property of the kibbutz.

Except in a few kvutzot, children do not live with their parents, but are placed from early infancy in nurseries, whence they pass to kindergartens and schools always living with their own age-group until they are old enough to become working members of the settlement. All settlements provide elementary schools (education upto fourteen is compulsory in Israel). Some also have secondary schools, or a secondary school is run by a group of neighbouring kibbutzim. The decision to release a young worker for university education, and to pay his or her expenses, is taken by the kibbutz as a whole, and is influenced by the kibbutz' need for a specialist in any particular field of study. The kibbutz takes full responsibility for the medical needs of its members and also for the care of the aged\*.

The kibbutz, although probably the most discussed, is by no means the only form of co-operative agriculture in Israel. It was apparent at an early stage that there were prospective settlers who were prepared to accept the ownership of land by a national fund, the avoidance of hired labour and a high degree of mutual aid, but not "the extension of collective discipline in the kibbutz to cover all aspects of social and economic life. They sought greater scope for personal initiative and individual variety. They felt, too, that the fundamental importance of the family as the organic unit of society, had been neglected by the kibbutzim."†

\*The degree to which an ageing population will alter the economy of the kibbutzim has hardly yet been considered.

†Itzhak Korn, 'Co-operative Farming in Israel'

In settlements of this type known as Moshav, the land which is leased collectively on a forty-nine year lease, is divided into small holdings, which may be from four to forty acres, according to the type of agriculture carried on. Not infrequently the earliest settlers received two plots, in the anticipation that the second plot would be prepared for handing over to a member of the next generation. Some settlers continued to be part-time workers on private farms while they built up their holdings. Though a general cropping plan is adopted by the settlement, members are free to carry on the work of their own holdings as they think fit. Mixed farming is general, including dairy cattle, poultry, vegetables, green fodder, sometimes grown in a communal field, fruit and grain, usually with the emphasis on the production of members' own food. Settlers have their own houses, and family life follows the usual pattern. In addition to farmers the settlement includes workers providing village services—drivers, mechanics, cobblers, shopmen, besides teachers and doctors, amounting to, perhaps, a quarter of the community.

Co-operative organisation is, however, comprehensive and compulsory. In some moshavim, a single co-operative looks after all the common interests of the village, social, administrative and economic. In others there are two organisations, one virtually a local authority, concerned with land leasing, roads, schools, health services and buildings; the other, a co-operative in the ordinary sense, engaged in the marketing of produce, the supply of domestic and agricultural requirements and with agricultural services such as stock-breeding, mechanical cultivation and water supply. In some cases the consumers' co-operative is a separate society. Credit is usually made available, sometimes as specific loans, sometimes by the simple process of allowing debts to accumulate till crops are sold.

A variant of the moshav is the moshav shitufi, which may be described as half-way between the moshav and the kibbutz, in that all farming (with the exception of small flower and fruit gardens) is carried on collectively while the members continue to live their family lives in private. Unlike the members of kibbutzim, they are paid, but in proportion to the needs of their families, not (as in Russia) to work done, and at least in some moshavim shitufim payment is, to a considerable extent, not in national currency, but in chits which can be cashed only in the co-operative store of the community.

The last few years have seen a rapid increase in the number of

moshavim, which by 1950 were nearly equal to the kibbutzim in number and population.

As regards joint farming in China: the Central Committee of the Communist Party of China distinguishes four types of organisation for agricultural production: (1) the temporary (seasonal) mutual-aid team—a simple form of collective labour; under this arrangement the farmers are left in possession of their own fields; (2) the permanent mutual-aid team—a certain division of labour and assignment of specific work on the basis of collective labour and a small amount of communally-owned property; (3) the 'elementary' agricultural producer co-operative—in which members pool their land as shares and there is unified management and a greater amount of communally-owned property; (4) the 'advanced' agricultural producer co-operative based entirely on collective ownership of the means of production.

The mutual-aid teams are relatively informal organisations. "In the elementary co-operative, 'the principal means of production such as land, draught animals and farm tools owned privately by members are put under a single, centralised management and gradually turned into their common property', and 'the co-operative pays each member an appropriate sum as dividend out of its annual income, commensurate with the amount and quality of land the member pools in the co-operative.' The 'advanced' type of co-operative is 'a socialist collective economic organisation' to which 'peasants joining the co-operative must turn over their privately-owned land and other important means of production, such as draught animals, large farm tools, etc. to the collective ownership of the co-operative'".

"In China, a distinction is made between the feudal elements in agriculture and the capitalist elements. The non-cultivating land owner is considered to be a feudal element and his lands have been confiscated without any compensation. The land-owner who cultivates himself is considered to be a capitalist element. While the Chinese authorities are pursuing a vigorous policy of substituting peasant proprietorship, which in their view is essentially capitalist agriculture, by co-operative farms, which is socialist agriculture, they have not confiscated the lands of any land-owner who cultivates them himself unless he has been accused of crime against the State and regime" (Page 61 of the Report of the Indian Delegation).

\*(Page 110 of the Report of the Indian Delegation to China).

Those who are not eligible for admission into a co-operative include, "according to model regulations, former landlords, rich peasants and counter-revolutionaries whose status has not been changed and who have not yet qualified for membership under the warrant of the local people's council, and persons deprived of political rights. Poor peasants and middle peasants are specially encouraged to join co-operatives and active steps are taken also to draw in demobilised soldiers, dependants of revolutionary martyrs, soldiers and government workers and also new settlers"\*

It is clear, however, that the Chinese agrarian policy is set towards an ultimate collectivization of agriculture on the Russian model; the first three types are merely intermediate stages. "Their ultimate objective is to pass on from peasant farming first to co-operative farming and then to collective farming at the earliest opportune moment" (Report of the Indian Delegation, page 61). They have not tarried at the intermediate stages even for five years. No sooner do the agricultural producer co-operatives come into existence than they are converted into the 'advanced' or collective type. In July 1955, Chairman Mao Tse Tung had made an important pronouncement when, following a tour of agricultural districts in Central China, he laid down the plans and the party line on agrarian policy and gave the "go ahead" signal. In only a hundred days, in the autumn of 1955, according to an article under the name of "Chau Hansing" circulated by the Chinese Embassy in New Delhi, 590,000 new agricultural producer co-operatives were organized in China. This brought their total number to almost 1½ million. It represented the highest tide, thus far, of a constantly accelerating movement that started in 1951. Then the country had only three hundred co-operative farms. At the end of 1953, the figure had risen to 14,000. By the summer of 1955, just before the autumn upsurge, there were 650,000 with nearly 17 million peasant house-holds as members.

It is said that by January 1956, 60 per cent and by March, 90 per cent of the peasant families had joined some sort of co-operative, of whom 56 per cent were members of the so-called advanced co-operatives or collective farms. By the end of May, according to the Report of our Delegation, co-operatives included 91·2 per cent of the 110 million peasant households, of which 61·9 per cent become members of the advanced type. "Such has been the speed with which co-operation has gone forward that, in most parts of China, the main task of establishing agricultural co-operatives of the advanced type is expected

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\*(Page 112 of the Report)

to be completed by the close of the winter of 1956" (Page 110 of the Report).

"Social changes," according to the "Economist".\* "have been most revolutionary in the countryside, and one is left wondering how Mao Tse-tung has succeeded in advancing bloodlessly where Stalin's path was strewn with corpses. Were tax relief and other incentives for the co-operatives and heavy taxation for private farmers enough to push 500 million Chinese peasants into the system? Out of the 110 million families now within the system, less than one-third are still in looser units, where a rent is still paid to them; the remainder are grouped in collective farms which approach the Soviet model.

"True, a good deal remains to be done to bridge the gap. There are a million collective farms in China against some 90,000 kolhozy in the Soviet Union and the difference cannot be explained merely by the size of the rural population and the character of Chinese farming. Quite a lot of consolidation and amalgamation still lies ahead. The Chinese, however, are in no hurry in this respect; a decade will elapse before they even get the tools necessary for mechanisation. In the next five years the planned 35 per cent increase in agricultural production will have to come from a more rational use of existing resources, from local irrigation schemes and fuller utilization of natural fertilisers. Only afterwards are vast plans of irrigation and land reclamation to pave the way for the tractor."

China does not possess the resources to produce agricultural machinery in bulk; capital investment is going mainly into heavy industry, and there is little to spare for the import of agricultural machinery or the setting up of large numbers of State farms and machine-tractor stations. In 1953 only 104 (or 2 per cent) of the 4,926 agricultural producer co-operatives in North-East China were practising mechanized farming. Again, as in Russia, the administration is faced with the problem of decrease in draught animals. In some districts half the buffaloes and oxen are said to have disappeared. Owing to the poor price paid by the co-operatives, peasants have been selling their beasts, particularly those too young to be worked, to the butchers. The State is almost overwhelmed with the numbers of hides offered to it for sale.

\* Quoted in the "Pioneer" dated October 27, 1956.

As usual the country cadres are blamed for mismanagement and ignorant "Commandism." But the "Peoples' Daily" puts its finger on one basic spot—"the peasant thinks only of getting as much as possible out of the co-operative and whether its interest increases or decreases is not his business."

Another evil, exposed by a long joint directive of the State Council and Central Executive Committee issued on April 3, is the reckless waste of money by managers of co-operatives. 'They merge villages together by building unnecessary houses, squander money on recreational facilities, sports grounds, roads and nurseries with toys for children and make no attempt to economize to meet productive expanses.' ('Cattle Shortage in China'. 'Hindustan Times', dated 15-5-1956).

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## CHAPTER IV

### CO-OPERATIVE AND COLLECTIVE FARMING.

The so-called co-operative farm—a farm on the lines of Israelite Moshav or the Chinese agricultural producer co-operative—about which we hear so much and which so many eminent people in our country seem to regard as the panacea for all the ills from which our rural body-politic suffers, is advocated as a type of farming which, while not affecting any of our fundamental social institutions or interfering with the framework of private property, will have all the advantages which the USSR is said to have reaped from the **kolkhoz**. The co-operative farm is regarded as representing a golden mean between the capitalist organisation with its stress on individual rights and the complete collectivist system under which all individual rights of property are suppressed and merged in collective or state ownership.

Co-operative farms should be organised, says the Committee on Problems of Reorganisation appointed by the Planning Commission's Panel on Land Reforms, as a first step, on the surplus land obtained on the imposition of a ceiling, Government waste land, considered suitable for cultivation, land reclaimed through public effort and land periodically let out by Government wherever such lands are available in sizable areas. As a rule, these lands should be settled with co-operatives and individual rights should not be created in them. They will constitute the nucleus for co-operative farming. The displaced tenants, the landless agricultural workers who may be selected for settlement on these lands and the cultivators below the floor limit who agree to put their lands into the pool will be admitted as members of the co-operative farm. The farms below the floor limit, which stay out of a co-operative farm at the commencement, should be located contiguously to the pooled area as part of the operations of consolidation of holdings to enable them to join the co-operative farm at a later date.

The aim is to enlarge the co-operative sector till the entire farm land in the village is comprised in co-operative farming societies.

As regards the method of pooling of land, the following different forms were considered by the Committee:

- (1) the ownership of land may be retained by individuals but the land may be managed as one unit, the owners being compensated through some form of ownership dividend;

- (2) the land may be leased to the co-operative society for a period, the owners being paid agreed rents or rents prescribed by law; or
- (3) ownership may be transferred to the co-operative society, but shares representing the value of land may be given to individuals.

As the surplus and other governmental lands will be settled with co-operative groups and not with individuals, no difficulty regarding pooling of land would arise in their case. With regard to land pooled by individuals, no particular method is recommended and no rigid conditions prescribed.

The following different methods of co-operative management were discussed:—

- (i) The entire area may be distributed into family units, each unit being allotted to a member family or a small group of families (depending upon the extent of land available with the co-operative) for purposes of cultivation, the member family of the group paying rent to the society. Each family or a group of families will, thus, have a separate plot to cultivate. They will, however, co-operate in the non-farm operations such as provision of credit facilities, supplies, marketing; etc., and in such farm operations as may be feasible:

or

- (ii) The whole farm may be managed as one unit for carrying out principal operations such as ploughing, sowing and harvesting. For subsidiary operations like irrigation, weeding, hoeing, etc., the farm may be divided into small units, each being allotted to individual families from year to year, the families getting a share of the produce as remuneration for work on subsidiary operations:

or

- (iii) The whole farm may be managed as one unit for all agricultural operations which will, thus, be centrally controlled by the society, the members being paid wages either on daily wage basis or on piece-work basis.

The adoption of any particular mode of management, says the Committee, will depend on the technique of farming that may be applied and the degree of co-operation which has developed among the members. Each co-operative farm will adopt the mode of management which suits it best according to its own circumstances. It is suggested, therefore, that at this stage all the various methods may be tried, till suitable techniques of co-operative management are fully established by experience.

The description of the working of joint large-scale farming in various countries and the ideas of the Planning Commission on the subject throws into relief the three basic differences between a co-operative farm or an agrarian producer co-operative of the Chinese model and a collective farm of the *Kolhoz* type. These are :—

- (i) Co-operative farming is an entirely voluntary organization, no one having a right to be admitted to membership as a matter of course. Whereas in collective farming all workers of both sexes in the village or locality have a right to membership and it is doubtful whether any person holding land has a right to stay away;
- (ii) Under co-operative farming ownership of land continues to vest in the members who contribute it, whereas under collective farming it passes to the society as a whole. It is not material to the definition of co-operative farming whether or not the individual owners have the right to withdraw their holdings physically from the co-operative farm, though, according to most writers, they should have such a right. Where such right is denied to a retiring member it is essential that he should receive due compensation for the property finally surrendered by him. In a collective farm, however, its members can decidedly have no such right and, as the ownership of land had already passed to the farm or to the society, no question of compensation either arises;
- (iii) A co-operative farm pays wages to workers, whether members or not, at prevailing rates and distributes net profit according to the value of the land and also of the livestock and dead stock, if contributed. Or, it may adopt another procedure, viz., the net proceeds of the farm

arrived at after deducting all the expenses of cultivation including payments to members for the use of their land in proportion to its value, wages paid to outsiders, cost of management and contributions to the reserve fund and other funds, if any are established, may be shared by members in proportion to the wages earned by each. The members of a collective farm, on the other hand, are entitled to a share in the net income only according to the number of labour days put in by them. That is, in a collective farm the participants have only one kind of income from the farm—that due to work: in a co-operative farm those who have contributed the land are entitled to a dividend or an income on account of their land, etc., apart from anything they may earn as workers on the farm.

Apart from these differences in the organizational set-up, there is no difference in the actual working of the two types. There is much greater significance in their similarities. Land is pooled in both, and whatever production technique can be applied to one may be equally applied to the other. The effect on peasants-cum-labourers constituting the farm is similar in both cases, and from the point of view of agricultural production there is nothing to choose between them. Whatever criticism applies to one applies equally to the other. The basic urge for either is the unaccountable belief that tilling by mechanical power, for which large farms are required, leads to greater yield. As will be seen later this belief is belied by facts. China affords the closest parallel to our agricultural conditions, and if the recent developments in China are any guide, a cooperative farm irresistibly tends to become a full-fledged collective, for the latter is more amenable to authoritarian control. China's professed objective is to convert her producer co-operatives into "advanced co-operatives", which is the fourth and final form of their projected agrarian organization.

One cannot have much quarrel with the Planning Commission's Committee on Problems of Re-organization: it leaves the suitable method of co-operative management to be evolved by experience. The Prime Minister restated the same approach in his address to the Uttar Pradesh Political Conference in Jaunpur on October 29, 1956. Said he:

".....the Government did not intend to proceed in the matter arbitrarily. It was for the kisans themselves to take into

account the pros and cons of co-operation and, if they considered it to be useful for them and the country, they should adopt it. But to him, there appeared to be no alternative. At this stage all that he wanted was that they should discuss the matter among themselves thoroughly and try co-operatives as an experimental measure."

The first method advocated by the Planning Commission's Committee under which each family has a separate holding to cultivate is but a variant of what is known as a Better Farming Society. Co-operation is not stretched to the point of merger of holdings, but is limited to non-farm activities where it can find its most fruitful field in the domain of agriculture. This method will be acceptable to all; but the Planning Commission insists that "co-operative farming necessarily implies pooling of lands and joint management". The only concession it makes is that "at this stage of development" it is not prepared to recommend any particular "manner in which lands may be pooled and operated" (page 201). It is this insistence which compels a dispassionate examination of the available evidence for and against large-scale farming. The purpose of this brochure is to show that large-scale farming cannot solve our problems; in particular it will not lead to greater production.

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## CHAPTER V

### OUR PROBLEMS

It would be axiomatic to state that our economy, industrial or agrarian, shall be governed by the conditions of our country and should be so regulated that it may help to solve the main problems that face us, or help to realise the ideals that we have in view. We cannot just copy or lift the agrarian economy obtaining in any particular country irrespective of the society that the latter hopes to build for itself, or irrespective of its conditions, geographical, climatic, and others which may or may not be applicable in our case. Now, the main problems that call for solution in our country, as in many others, can be formulated as follows:—

- (a) Increase of total wealth or production;
- (b) Elimination of unemployment and under-employment;
- (c) Equitable distribution of wealth; and
- (d) Making democracy a success.

All our laws, schemes, and projects have to be evaluated in the light of these problems. Those which serve to contribute to their solution are beneficial to the country. Those which do not have to be rejected.

To obtain an increase in total wealth is a primary requirement. At the same time in our circumstances, we have to plan for a self-contained economy and set up only so many mills and factories as will produce what will be absorbed by the internal markets. But even if we set about industrialising with a view to expand our internal markets and capture external ones, the hands, that will be required to operate these large scale industries will be comparatively so few that none will have to be drawn off from actual work in the fields; contrary to what the supporters of industrialism would love to think, pressure on the land will not be relieved. There is already so much unemployment to-day, rural and urban, and our population is increasing at such a rapid pace.

That none will be drawn off from work in the fields is, however, not a calamity. For, were we to plan, or rather were it possible to plan, for an economy where, say, half of the peasantry were taken away from the land and set to work in the factories, the food-supply will diminish. In that case the total food production of all the acres would be only about 68 per cent of what was being produced, before (when the farm holdings were 5.5 acres per man). "If the ratio of population to food were such that 68 per cent would satisfactorily feed both

the peasants still on the land and also those moved into the factories, the change would be advantageous, assuming that the factory product could all be sold year after year. But if that 68 per cent of former total food production were not enough to go around among both the factory workers and peasants still on the land, then the change would mean starvation for almost every one concerned" (Which Way Lies Hope ?' p. 53).

We have therefore to base our economy not wholly on industrialism, but largely on agriculture integrated with decentralised, small home industry. We must create conditions in our country which will produce the highest possible continuous, enduring production of food. Less and less food, as world population mounts and world soil erosion continues, will the densely-populated countries be able to get from other countries by way of purchase or gift.

The following three tables culled from different sources, showing the average production of various agricultural commodities in some of the countries of the world for a period of five years, 1932-36, three years, 1949-51, and six years, 1948-53, respectively, prove that India's production is almost the lowest all along the line—

TABLE I.

QUINQUENNIAL AVERAGE (1932-36) IN QUINTALS PER HECTARE. \*

Crop.	China.	Japan.	France.	Italy.	USSR.	USA.	Total average of all countries.	India,	
								Absolute quantity.	Percentage of Col. 8.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Rice ...	25.6	36.0	..	..	..	..	30.8	13.7	44.4
Wheat ...	11.1	13.8	15.9	14.3	7.8	8.3	11.9	7.0	58.8
Barley ...	12.1	20.4	14.6	10.6	8.9	10.5	12.8	9.4	73.4
Maize ..	13.7	13.8	14.4	19.6	10.1	13.2	14.1	8.7	61.7
Cotton ..	2.4	...	..	..	2.4	2.1	2.3	0.9	39.1
Linseed ..	...	...	4.6	5.9	2.8	3.5	4.2	2.7	64.3
Ground-nut.	18.2	21.5	..	...	...	7.9	15.8	10.0	63.3

\* "Our Economic Problem" (p. 140) by Wadia and Merchant.

TABLE II.

Average yield per acre (1949-51) in pounds for Principal crops ("estimates of Area and Production of Principal crops in India, 1952-53", vol. 5)

Name of country.			Cotton (ginned.)		Wheat.		Groundnut.		Tobacco.		Sugar-cane.	
India	..	...	80	(1.0)	586	(1.0)	680	(1.0)	662	(1.0)	29,467	(1.0)
USA	..	...	274	(3.4)	949	(1.6)	842	(1.2)	1210	(1.8)	39,618	(1.3)
USSR	...	...	285	(3.5)	830	(1.4)	..	..	999	(1.5)	..	..
China (22 Provinces)	...	...	143	(1.8)	874	(1.5)	1,606	(2.4)	999	(1.5)	..	..
Brazil	...	...	134	(1.7)	..	..	892	(1.3)	681	(1.0)	34,725	(1.2)
Egypt	...	...	428	(5.4)	..	..	1,445	(2.1)	..	..	63,993	(2.2)
Mexico	...	...	312	(3.9)	..	..	..	..	886	(1.3)	..	..
Pakistan	...	...	184	(2.3)	..	..	..	..	886	(1.3)	17,496	(0.6)
Argentina	...	...	235	(2.9)	..	..	..	..	..	..	26,092	(0.9)
Turkey	...	...	247	(3.1)	..	..	..	..	645	(1.0)	..	..
Canada	...	...	..	..	1,050	(1.8)	..	..	1,252	(1.9)	..	..
France	..	...	..	..	1,594	(2.7)	..	..	1,526	(2.3)	..	..
Italy	...	..	..	..	1,371	(2.3)	1,624	(2.4)	1,201	(1.8)	..	..
U. K.	..	...	..	..	2,436	(4.2)	..	..	..	..	..	..
Indonesia	..	...	..	..	..	..	1,071	(1.6)	..	..	..	..
Burma	..	...	..	..	..	..	498	(0.7)	..	..	..	..
Greece	..	...	..	..	..	..	1,557	(2.3)	509	(0.8)	..	..
Japan	..	...	..	..	..	..	999	(1.5)	1,511	(2.3)	..	..
Cuba	...	...	..	..	..	..	..	..	577	(0.9)	31,825	(1.1)
Australia	..	...	..	..	..	..	..	..	..	..	51,618	(1.8)
Hawai	..	...	..	..	..	..	..	..	..	..	1,50,360	(5.1)
Jawa and Madras	..	...	..	..	..	..	..	..	..	..	76,620	(2.6)

( 24 )

NOTE—Figures in brackets indicate the relationship of average yields in foreign countries to those of India in terms of unit.

TABLE III

AVERAGE YIELD PER HECTARE (1948-53) OF IMPORTANT CROPS IN DIFFERENT COUNTRIES.

Source : F. A. O. Year Books 1953 and 1954.

		Yield in 100 kgs. per Hectare															
Sl. No.	Countries	Cotton Seed		Wheat		Groundnut		Tobacco		Barley		Maize		Rice (Paddy)		Potato	
		Actual	Relative (India = 1)	Actual	Relative (India = 1)	Actual	Relative (India = 1)	Actual	Relative (India = 1)	Actual	Relative (India = 1)	Actual	Relative (India = 1)	Actual	Relative (India = 1)	Actual	Relative (India = 1)
1	India	1.8	(1.0)	6.8	(1.0)	7.5	(1.0)	7.3	(1.0)	7.9	(1.0)	6.7	(1.0)	11.5	(1.0)	70.5	(1.0)
2	Australia	3.0*	(1.7)	11.4	(1.7)	10.3	(1.4)	9.2a	(1.3)	9.9	(1.3)	17.6	(2.6)	47.8	(4.2)	93.7	(1.3)
3	New Zealand	...	...	27.5	(4.0)	..	...	14.0	(1.9)	22.7	(2.9)	37.2a	(5.5)	...	...	145.4%	(2.1)
4	Union of S. Africa	...	...	5.3+	(0.8)	..	...	...	...	7.9c	(1.0)	8.5a	(1.3)	...	...	44.0d	(0.6)
5	Egypt	9.9	(5.5)	18.7	(2.8)	16.9%	(2.3)	..	...	19.6%	(2.5)	21.1	(3.1)	36.9	(3.2)	152.5	(2.2)
6	China (22 Provinces)	3.5*	(1.9)	10.1a	(1.5)	..	...	10.9a	(1.5)	11.1c	(1.4)	13.5a	(2.0)	25.0e	(2.2)	55.0e	(0.8)
7	Japan	2.3c	(1.3)	18.8	(2.8)	13.6	(1.8)	16.8%	(2.3)	21.0	(2.7)	14.2	(2.1)	39.1	(3.4)	119.2	(1.7)
8	Turkey	4.6*	(2.6)	10.4h	(1.5)	18.3	(2.4)	7.2	(1.0)	11.8	(1.5)	12.2	(1.8)	35.6	(3.1)	78.3	(1.1)
9	Canada	...	...	13.3	(2.0)	..	...	14.6	(2.0)	14.8	(1.9)	32.6	(4.9)	...	...	125.8	(1.8)
10	U. S. A.	5.6	(3.1)	11.3	(1.7)	9.7+	(1.3)	14.2	(1.9)	14.4	(1.8)	24.4	(3.6)	26.2	(2.3)	162.5	(2.3)
11	Mexico	5.8	(3.2)	9.1	(1.3)	12.0	(1.6)	10.0	(1.4)	7.2	(0.9)	7.6	(1.1)	17.6	(1.5)	46.0	(0.7)
12	Argentina	4.8	(2.7)	11.3	(1.7)	9.7	(1.3)	10.3	(1.4)	12.1	(1.5)	15.4	(2.3)	31.0	(2.7)	65.8	(0.9)
13	U. K.	...	...	27.7	(4.1)	...	...	..	...	25.7	(3.3)	...	...	...	...	193.3	(2.7)
14	Federal Republic of Western Germany.	...	...	26.3	(4.1)	...	...	24.6h	(3.3)	24.2	(3.1)	23.0i	(3.4)	...	...	212.0	(0.3)
15	France	...	...	18.9	(2.8)	...	...	17.6	(2.4)	16.5	(2.1)	14.9	(2.2)	35.8%	(3.1)	127.8	(1.8)
16	Belgium	...	...	32.3h	(4.8)	...	...	22.9a	(3.1)	30.1	(3.8)	39.0	(5.8)	...	...	232.2	(3.3)
17	Netherlands	...	...	37.0	(5.4)	...	...	...	...	32.4	(4.1)	32.4	(4.8)	...	...	255.8	(3.6)
18	Denmark	...	...	37.0	(5.4)	...	...	8.6g	(1.2)	34.5	(4.4)	...	...	...	...	190.3	(2.7)
19	Italy	3.0	(1.7)	15.9	(2.3)	17.9	(2.4)	13.5	(1.8)	10.6	(1.3)	19.5	(2.9)	49.1	(4.3)	71.2	(1.0)
20	Yugoslavia	2.0	(1.1)	12.2j	(1.8)	8.5%	(1.1)	7.3	(1.0)	10.5	(1.3)	13.8	(2.1)	25.4%	(2.2)	67.8	(1.0)
21	Greece	6.3	(3.5)	10.6	(1.6)	19.1	(2.5)	5.9%	(0.8)	10.5	(1.3)	9.4	(1.4)	32.3%	(2.8)	110.3	(1.6)
22	Norway	...	...	20.6	(3.0)	...	...	...	...	23.4	(3.0)	...	...	...	...	200.5	(2.8)
23	Sweden	...	...	21.7	(3.2)	...	...	...	...	22.3	(2.8)	...	...	...	...	136.3	(1.9)
24	Switzerland	...	...	26.4h	(3.9)	...	...	19.4	(2.7)	24.7	(3.1)	31.0d	(4.6)	...	...	182.2	(2.6)

\* Unofficial figures.

@ Average of 1949-53.

&amp; Average of 1948-49 and 1951-53.

% Average of 1948-50 and 1952-53.

£ Average of 1948-51 and 1953.

+ On Farms and estates.

† Picked and Threshed.

a. Average of 1948-52.

b. Average of 1951-53.

c. Average of 1948-51

d. Average of 1948-50.

e. Average of 1948-49.

f. Average of 1949-50 and 1952-53.

g. For 1948 only.

h. Average of 1948-50.

i. Average of 1948-52.

j. Includes spelt,

What is still more alarming is the fact that, while, as time passes, in other countries the yield of rice and wheat per acre is either increasing or almost constant, in India it registers a definite decline—

**TABLE IV**

**Average Approximate Yields of Rice in Lbs. Per Acre**

	1909-13	1926-31	1931-36	1936-39
India (including Burma)	982*	851	829	805
Burma ... ..	...	887	845	868
U. S. A. ... ..	1000	1333	1413	1482
Italy .. ..	1952	2797	2963	3000
Spain ... ..	2969	3749	3709	...
Egypt ... ..	2119	1845	1799	2097
Japan ... ..	1827	2124	2053	2307

**TABLE V**

**Average Approximate Yields of Wheat in Lbs. Per Acre**

	1909-13	1924-33
U. S. A. ...	852	846
Canada ..	1188	972
Australia ...	708	714
Argentina ...	596	780
Europe ..	1110	1146
Russia ..	612	636
India ...	724	636

\*Figure relates to 1914-19

As far as wheat is concerned, its yield per acre has decreased greatly since the days of Akbar. According to 'Ain-i-Akbari' it averaged 1555 lbs. per acre: according to the quinquennial report of 1926-31, it averages 900 lbs. (1,000 lbs. for irrigated land).

While the average under rice and wheat increased, total production of the two commodities till a decade ago went down.

TABLE VI

Average for years		RICE		WHEAT	
		Millions Acre	Millions Tons	Millions Acre	Millions Tons
1911-16	...	67.3	26.08	24.2	7.98
1931-43	...	69.76	23.16	26.26	7.44

May be the trend has been reversed during recent years, but in the-absence of figures no definite statement can be made.

The table on p. 28 gives the comparative data of agricultural production for various states of India *inter se*, and shows how one state stands vis-a-vis another with respect to the production of a particular commodity:—

**TABLE VII**  
**YIELD IN MAUND/ACRE DURING 1948-53 OF PART 'A' STATES OF INDIA@**

Sl. No.	Part 'A' States of India			YIELD PER ACRE DURING 1948-'53@							OF	
			Crops:	Wheat (Mds)	Rice (Mds)	Barley (Mds)	Maize (Mds)	Cotton† (Mds)	Tobacco (Mds)	Ground- nut (Mds)	Potato (Mds)	Sugar- cane (Mds)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
1	Assam	..	...	10.127	10.562	...	7.078	1.944	8.902	...	58.500	30.216
2	Bihar	..	...	5.798	6.887	5.009	5.989	1.067	8.357	...	73.064	18.838
3	Bombay	..	...	4.192	8.847	5.989	6.996	0.967	6.996	7.295	99.442	77.229
4	Madhyapradesh	..	...	5.662	7.241	4.818	6.316	0.796	7.622	6.370	69.089	32.884
5	Madras£	..	...	4.410	11.215	N. A.	11.052	1.201	10.834	10.970	72.955	75.541
6	Orissa	..	...	1.996	6.071	N. A.	4.492	0.414	8.194	8.629	27.467	48.346
7	Punjab	..	...	10.696	8.983	8.194	11.025	2.296	9.882	8.330	101.538	31.196
8	U. P.	..	...	8.629	6.343	9.119	8.167	1.486	8.575	11.896	79.515	30.380
9	West Bengal	..	...	8.60	10.807	8.893	8.384	1.987*	7.840	..	103.879	45.052
10	AndhraX	..	...	3.7	13.067	N. A.	11.678	0.667	8.602	10.862	..	78.182

Foot Notes:— £ Figures for 1948-51 include Andhra and part of Mysore also.

X Two years average.

\* Yield of Raw Sugar.

& Production figures of nuts in shells.

0 Exact figures not available since very little area under Crop. The sources give area and production figures in 1,000 acres a 1000 tons.

† Production figures given in sources are in 1000 bales of 392 lbs. each. The figures for all States for the year 1953-54 are subject to revision.

(Maund Per Acre=0.92239 X 100 Kgms/hectare)

@ As in FAO the year 1948 represents 1948-49, and so on.

N. A. Not Available.

SOURCE—(i) Area and Production of Principal crops in India 1948-51 Ministry of Food and Agriculture G./I.

(ii) Statistical Abstracts, India 1951-52 & 1952-53 issued by Central Statistical Organisation G./I.

(iii) Monthly issues of 'Agricultural Situation in India' Ministry of Food & Agriculture G./I.

We have not yet given to agriculture the importance that it should occupy in our economy. Even if as was expected we have increased our gross agricultural output during the first Five-Year Plan we are certainly not yet out of the woods. Had we been, we would not have, just on the eve of the second Five-Year Plan, been forced to enter into an agreement to purchase 170 crores worth farm produce from America that we recently did. It is a strange spectacle, indeed, that of a predominantly agricultural country like India going from country to country begging for food, so soon after it had patted itself on the back on the success of her First Plan!

According to the census report of 1951, India was normally surplus in food-grains in or about 1880 including both rice and wheat, and the surplus was of the order of 12 lakhs of tons per annum. Figures for subsequent years which are available, averaged over five-year periods, are as follows:—

**TABLE VIII**

(In Lakhs of Tons)

Five-year period	Exports	Imports	Net Exports
1890-91 to 1894-95 —	14.5	2.1	12.4
1895-96 to 1899-1900 —	11.0	4.8	6.2
1900-01 to 1904-05 —	16.6	6.2	10.4
1905-06 to 1909-10 —	14.8	9.6	5.2
1915-16 to 1919-20 —	15.9	11.9	4.0

1915-20 was the last five-year period when undivided India was a net exporter of food-grains. Thereafter, there was a net import during every five-year period as shown by the table below:—

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TABLE IX

(In Lakhs of Tons)

Five-year period	Imports	Exports	Net Imports
1920-21 to 1924-25 —	11.4	9.8	1.6
1925-26 to 1929-30 —	15.9	8.3	7.6
1930-31 to 1934-35 —	18.4	5.7	12.7
1935-36 to 1939-40 —	20.7	6.9	13.8

The subsequent changes during and since World War II may be briefly told. During 1940-41 and 1941-42 net imports diminished to 9.6 lakhs and 4.3 lakhs. During 1942-43 imports were cut off and India supplied Ceylon and a few other places; net exports reappeared for about one year though the quantity was small—only 2.9 lakhs. The Bengal Famine occurred during 1943-44 when India received, under inter-national allocations, a net supply of 3.0 lakhs. The next two years were managed with only 7.3 and 9.3 lakhs of tons. The shortage was made good mainly by eating into the carry-over; the stocks normally carried by farmers, traders and consumers were reduced, thus adding greatly to the difficulties of distribution, and creating the risks of break-down which was the nightmare of 1946. The first full post-war year [1946-47] saw India importing 25.8 lakhs and the next year (1947-48) 26.6 lakhs. At that stage, the agitation against state trading commenced. These imports seemed to be both enormous and unnecessary; hence the demand for stoppage of imports and lifting of controls. This did not, however, work. During 1948-49, the first full year after partition, India imported 30.5 lakhs. Then it was reduced to 28.6 and 27.2 lakhs. This was followed by two successive years of very large imports. The report of the Planning Commission mentions 32.7 lakhs as the average level of imports per annum during 1947-52.

It is plain then that we have ceased to grow enough to feed our population for about three decades now. The quantity of land that is available for production in our country today is for practical purposes fixed. There is little possibility of extension of agriculture by reclamation and colonisation. Our population is large and increasing. We have therefore to raise the maximum possible output from the land

already under cultivation. In other words, the basic problem of agriculture in India today is to raise the yield per acre. Of the three factors of production, namely land, labour, and capital, land is the limiting factor and should, therefore, be exploited to the maximum even though such exploitation may involve a wastage of the other two factors, namely, labour and capital. Our man-power is colossal and labour is cheap. Capital, in our circumstances, largely means draught cattle. Our agrarian organization has, therefore, of necessity, to be such as would lend itself to the maximum exploitation of land even though it may not be consistent with the maximum exploitation of labour and capital.

Marxism, like capitalism, has every where asked: How could we obtain from the existing surface a maximum return with a minimum of labour? The question for us is different. It is: How could one on the existing surface secure a living to a maximum number of people through the use of their labour in the villages? Land being the limiting factor in our conditions, our aim must be obviously not the highest possible production per man or agricultural worker, but highest possible production per acre. That is what will give us the largest total for India as a whole and thus eradicate poverty or want of wealth in the absolute. It is only in countries like the USA, the USSR and Australia where land is not a limiting factor and labour is comparatively scarce that it may be in the national interest to obtain the maximum output per worker rather than maximum yield per acre. But we cannot afford to advocate or have an economy which may be wasteful of land. Land being relatively more scarce in India as a whole and, therefore, more valuable than the other two factors, we have to apply to it more or increasing units of labour or capital or of both in order that the fullest use be made of the former, or which is the same thing, bigger yields realised therefrom per acre.

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## CHAPTER VI

### PRODUCTION OF WEALTH

A good few think that a compact area of 100 acres will yield a somewhat higher produce than 10 plots of 10 acres each. That is, concentration of land will give greater yield per acre than if it is divided or dispersed into small units. People living in the cities, who have before them the example of big economic units working successfully in the field of manufacturing industry, argue by analogy that big mechanised undertakings would produce more in the field of agriculture also. They consider that increased production of food cannot be achieved unless the peasants abandon their small-scale farming<sup>2</sup> and join or merge themselves into societies where large-scale farming is possible and tractors, combine-harvesters and similar machinery can profitably be used. They would like to put agriculture, too, on a 'factory' basis.

The economists in our country and the intelligentsia<sup>3</sup> in general have taken their views mostly from Marx, the core of whose economic analysis, as of his theory, was a fundamental belief in the superiority, and hence in the necessity, of large-scale production. To him large-scale production was the first condition for general well-being. That condition was clearly being realised in the field of industry; Marx took it for granted that the same process was bound to take place also in agriculture.

According to Marx the peasant was doomed because he was a peasant, and the evil to which the peasant was succumbing was just his dwarf holding, the partition of the soil. Neither the peasant nor his system was compatible with progress, and the development of the society was overcoming them both. The Communist Manifesto went straight to the goal—the scientific cultivation of the soil upon a common plan by means of armies of labourers.

The small peasant produces mainly for himself; the capitalist farmer mainly for the market. But the industrial workers depended on purchased food-stuffs and these, the Communists said, they could not get from the peasants: hence the old peasant economy was incompatible with the new industrialised state. The peasant was to be transformed into a labourer and the nationalised soil tilled by co-operatives of production under the control of society as a whole.

No part of Marx's economic theory was more uncritically accepted

than this. It was forgotten that when Marx was formulating his theory he was living in England where there were no peasants and no agrarian question to challenge his outlook. His description of the agricultural situation was based on the life of the English labourer and of the pitiable Irish peasantry about the middle of the last century. It was, further, a period when everything seemed to point to the concentration of land in the hands of a few large owners. An important aspect of this phenomenon, viz., that the increase in large estates had often been achieved by political and social pressure (through enclosures and partly as the price for the emancipation of the peasants), and did not represent simply the victory of the better system in free competition, escaped his notice completely. The original views of Marx on agrarian development have, however, continued to grip the Communist mind ever since, inspite of the statement of Engels that Marx had himself begun to doubt their validity in cases where, as in Eastern Europe, farming was not capitalistic.

In sheer economic theory it is easy to see that, howsoever a big farm may be organised whether co-operatively, collectively or on a capitalistic basis, its largeness is a factor which definitely tends to reduce the per-acre yield. To quote W.J. Spillman: "The greatest profit from the business as a whole involves the greatest profit per unit of the limiting factor. Thus if land be the limiting factor, the aim should be to make the largest profit per acre. If labour limits the business, the aim should be the largest possible profit per unit of labour. Similarly, if the limiting factor be materials, the aim should be the greatest profit per unit of material".\*

Taking the case of an average peasant farm, the farmer and his family are under-employed on their patch of land. They do not have to pay for the time and the labour that they devote to it. So that even for a small extra yield they will apply all the labour they are capable of. In peasant farming land is the limiting factor, and the greatest profits therefore lie in the maximum yield per acre. On the contrary, the owner or the manager of a big farm has necessarily to engage labour on payment, and unless the extra yield is commensurate with the extra labour that may be applied, the extra labour will not be worth-while and the maximum profit in the case of a large farmer will correspond to the fullest exploitation of labour that he may be in a position to engage. In his case labour is the limiting factor, not land;

\*"The law of Diminishing Returns", p. 43

for land is there to which extra labour may be employed but extra labour is too costly for the additional output. The maximum profits will not therefore correspond to the maximum yield from land as in the case of a small farmer.

In other words, the profit motive of a small farmer is fully consistent with our national requirement which, as has been explained, is the greatest yield per acre, not the greatest profit in terms of money. On the other hand, the profit motive of the holder of a big farm, of whatever pattern, is in conflict with that supreme requirement, for the simple reason that his greatest profit lies in maximum exploitation of resources other than land. If water, manure, improved seed and other facilities are available in equal measure to both, the larger farmer will never find it worth while to compete with the small one in per-acre yield.

Since the great depression of thirties, doubts about the efficiency of large units have grown even in the field of industry. A most thorough investigation was made by the so-called Temporary National Economic Committee in the USA, just before the War, in 1941. Its elaborate studies showed that in none of the mass industries were the biggest units the most efficient in productivity. In a practical way the depression of the thirties had also served to show that even in industry smaller units could more readily adapt themselves to changing conditions and markets. Anyway the Marxists are altogether wrong in their assumptions about agricultural production.

The explanation why a factory owner is able to produce more per unit of capital invested than a small worker or artisan while a big farmer is not, lies in the fundamental distinction between the two kinds of industry which has been admirably brought out by Van Der Post. "The manufacturing process", says he, "is a mechanical process producing articles to pattern in succession from the same machine. The agricultural process, on the other hand, is a biological process, and its products are the result not of a man-driven mechanism, but of their own inherent qualities of growth. In case of the industrial commodity, therefore, standing room for a machine and its operator will suffice in order that it be multiplied indefinitely. In the case of the agricultural commodity, on the other hand, standing room is required for each article that has to be produced" ("Economics of Agriculture", 1937, p. 162).

A large farm must occupy a large space. But the larger the size of the farm, the more scattered its operations. This not only makes large farming more expensive than large manufacturing, but makes it more difficult to supervise. Labour concentrated under one roof, as is the case with manufacturing, is easier to supervise than labour spread over a large area.

Other factors that favour a larger scale of operations in manufacturing than in agriculture, and stem from the fundamental difference between the nature of the two, are that the former lends itself to specialization by tasks and by products, that machine production can be standardized, while agriculture cannot, and, it, therefore, needs less supervision than agriculture and that it is susceptible to delegation and differentiation of managerial functions much better.

Further, agricultural production being organic in nature or a biological process, the kind of thinking used to calculate machine production cannot be applied in farming.

"The truth is that in manufacturing," says Ehrenfried Pfeiffer in the preface to his book "Soil Fertility, Renewal and Preservation" (page 6), "we are dealing with something primarily inorganic. Its general calculability as well as the calculability of its individual factors, are all easily controlled. Agriculture, on the other hand, works with living factors, with the growth, health and diseases of plants and animals. It has to do with the enlivening of the soil. All of its factors are variables. In their individual characteristics they are independent of one another, yet they unite to form a higher unity, a whole, that is to say, an organism.

"Raw materials are received by the factory and are transformed into finished goods. Between these two poles in manufacturing—the pole of the raw materials on one side and of the finished commodity on the other—there stands the machine. The machine is not a variable factor except for deterioration. Agriculture, on the other hand, has for its one pole fertilizer and seed as raw material; it furnishes vegetables, grain, fruit, etc., as the finished product. But between the beginning and the end of agricultural production stands the life process (biological process). Economic thinking could form a correct idea of what takes place in agriculture only if this life process could be taken into its calculations."

Just as cattle and human beings are, in respect of manifestations of their life, not an arithmetical problem, so also soil. Just as the performance of a horse, its pace, its jump and its endurance do not depend on feeding alone and the gallons of milk that may flow out of a cow are not directly proportionate to the pounds of proteins and salts that may be fed to it, so is the productive capacity of a cultivated field also not directly proportionate to the amount of fertilizer applied. A Cultivated field is a biological organism, like the horse or the cow, and as such subject to the laws governing the organic.

The invention of the steam-engine in the eighteenth century led to an unparalleled economic revolution involving a complete upheaval in methods and rates of industrial production and in civilization in general. Where hitherto man had scarcely known or used any but hand tools, he had henceforth at his disposal a machine driven by an external source of power, which could be harnessed to an indefinite number of other machines.

The great inventions heralded the birth of the capitalists economy, demanding large numbers of workers, heavy capital investments and world-wide markets. The handicraft workshop in which the master-craftsman worked alongside a few journeymen or apprentices gave way to the factory and the big firm, in which concentration and the scale of production steadily increased and the machines were constantly improved.

While, however, introduction of the steam-engine in place of the hand-driven wheel, owing to the mechanical nature of manufacturing, brought a hundredfold, even two hundred-fold increase in man's capacity to produce manufactured goods, the steam-engine, because it was a machine, did nothing, in fact, could do nothing of the kind in agriculture, which is a biological process. In mechanical processing the replacement of hand power by steam power established a new relationship between the size of an undertaking and its production. But it could not influence the life process of plants and the relationship between the size of an agricultural farm and its production necessarily remained unaffected. In actual practice, given the same resource facilities, soil content, and climate, a small farm produces, and will continue to produce, acre for acre, more than a large one until a machine is devised which can accelerate the nature's process of gestation and growth.

A plant may or may not have a soul but it is a living organism: the

term 'plant life' is now in common use with all scientists. As such it requires individual care and attention somewhat in the same manner as an animal or human being does. And there are limits to the physical and supervisory capacity of the owner or the manager of the farm. As a man or woman cannot satisfactorily look after two dozen children or two dozen cows, so a farmer, too, can not tend crops efficiently beyond a certain limit. Nor can such care and attention be forthcoming on a co-operative or collective farm either, where no land or field belongs or is entrusted to any body, exclusively.

Secondly, the labour that a family can provide free of cost on a small farm cannot be available on a large farm. Agriculture for a peasant is not only a means of living but a way of life also: his wife, children and old parents labour not merely for gain. The organic nature of agricultural production making it dependent rather on more intensive labour for increase in output, a large private farmer has to engage hired labour for every piece of a job: this favours the small cultivator because the paid labour, while it increases the farm expenses, is difficult to supervise. There is a tendency in men not under close supervision by owners or managers to slow up their work. Paid labourers can in no case bring to exercise the same attention, the same devotion which the members of a peasant family will, whether in tending the crops, or the animals, or in performing any other of the varied tasks of cultivation. The labourer work for wages, not for love. Large-scale undertakings dependent on paid labourers cannot, therefore, compete with peasant production in a free market.

If the large farm is a co-operative or collective undertaking, the workers or members will lack the incentive, which a peasant farmer owning his patch of land and being master of his produce has, for working hard. The knowledge that the total sum to be divided amongst more than a hundred or two hundred workers of the co-operative farm depends upon how hard they all work, has proved too weak and diffused an incentive to be effective. "The farmer will not", write Sydney and Beatrice Webb, "be easily weaned from his habit of seeking always to do less work than his fellow-members, on the argument that only in this way can he hope to get even with them, or they will, of course, be seeking to do less work than he does." That is, the pace in a co-operative or collective enterprise is determined by that of the slowest worker.

Thirdly, a peasant farmer is, by dint of the surplus labour resources of his family available to him, able to carry more cattle per

acre than the large farmer. His family labour is a fixed factor which has to be maintained in all events: so he tries to utilize it by keeping live-stock, which adds to his output. No such labour force or labour force commensurate to the size of the farm is available to a large farmer. Almost all the income is, therefore, confined to what the farmer is able to get from the crops.

Nor is the capacity of a large farm to rear and maintain cattle enhanced by being run on co-operative or collective lines. Cattle and poultry respond to living and loving touch almost just as human beings do: they are, therefore, best cared for (and, therefore, serve as a source of profit) only when they are the property of individuals and objects of pride to them. That is why far greater concessions in the matter of keeping private livestock have been given to collective farmers in those areas of the USSR which are devoted largely to breeding of cattle as opposed to areas devoted largely to production of grain. That is why, again, by the way, big dairies run as production centres in our country are seldom a paying proposition.

Lastly, inasmuch as a family farm can carry a larger number of cattle and poultry per acre than a big farm, the peasant farmer will have comparatively more farm-yard manure at his disposal. Cattle waste is organic in character, and, at least, in the long run more effective as manure than the inorganic chemical fertilizers which are obtainable in the markets, and to which, a large farm, whether private or co-operative, will, of necessity resort. And while the truth that farm-yard manure helps to maintain soil fertility best is admitted by all agrarian experts, some of them, at least, are definitely of opinion that artificial fertilizer depletes the soil,

## CHAPTER VII

### COMPARATIVE DATA OF YIELDS

It has been stated in the previous chapter that the biological aspect of the question and economic theory lead us to the conclusion that production on small farms is greater per unit of land than on large farms. There is overwhelming, factual evidence from various countries which confirms this conclusion. Below are given figures for the English, Danish and Swiss agriculture from the "Economics of Agriculture, 1937" by Van Der Post—

**TABLE X**

ENGLISH		DANISH		SWISS	
Size of Holding	Gross return per acre L s d	Size of Holding	Gross return per acre L s d	Size of Holding	Gross return per acre L s d
1.		Under 25 acres	20 1 0		
2. 1 to 50 acres	11 19 9	25 to 50 acres	15 4 0	7½ to 12½ acres	22 11 7
3. 50 to 100 acres	9 19 2	50 to 75 acres	15 3 0	12½ to 25 acres	19 0 3
4. 100 to 150 acres	7 19 1	75 to 100 acres	13 18 0	25 to 37½ acres	17 17 2
5. 150 to 250 acres	7 5 8	100 to 250 acres	12 8 0	37½ to 75 acres	16 2 3
6. Above 250 acres	7 4 4	Above 250 acres	12 4 0	Above 75 acres	13 17 7

"It is quite evident" remarks Frank App in "Farm Economics" (pp. 58-59), "that the larger the business, the larger will be the receipts. To what extent this would hold true as the size increases, will depend upon the type of farming, the locally, and somewhat upon the ability of the operator. In the surveys made in six states of the USA (sic) the results average as follows—

TABLE XI

Farm Size			Total Receipts per acre
Small ...	...	...	\$ 42.90
Medium	...	...	\$ 41.30
Large	...	...	\$ 38.80

That mixed farming (or even cattle rearing singly) is more profitable on smaller farms than on larger, is well illustrated by the statistics of five different countries given on p. 41.

TABLE XII

"The Economics of Small Holdings" (1927) Edger Thomas (pp. 110-111)

## Gross Out-put Per Acre

	Denmark						Norway						Sweden						Switzerland						Carmarthenshire (An English county)																		
	Under 25 acres		25-50 acres.		50-75 acres.		Under 25 acres		25-50 acres		50-75 acres		Under 25 acres		25-50 acres		50-75 acres.		Under 25 acres		25-50 acres		50-75 acres		Under 25 acres		25-50 acres		50-75 acres														
	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.													
Crops ..	1	11	7	1	4	4	1	13	5	3	7	1	3	2	11	2	14	7	1	2	5	1	4	4	1	18	8	2	3	4	1	19	1	2	1	11	0	0	10	1	90	0	1
Livestock and live- stock pro- ducts.	20	14	5	15	18	8	14	7	1	12	17	6	9	16	5	8	9	10	10	5	36	15	16	19	10	12	7	2	12	11	0	11	6	5	7	14	87	10	87	3	7		
Other sources.	1	7	0	0	15	30	12	7	1	18	10	1	1	6	0	19	7	0	17	80	10	10	17	2	6	3	3	5	10	7	4	2	5	11	19	10	1	0	50	15	10		
	23	13	0	17	18	3	16	13	1	18	3	5	14	0	10	12	4	0	12	5	48	9	69	15	8	20	13	9	20	0	8	17	10	9	19	14	78	12	107	19	6		

That there is an upper limit to the managerial capacity of a man beyond which the land farmed by him cannot yield a larger produce in the total and also that there is a lower limit to a farm below which, howsoever more labour and capital may be applied, it will not produce more per acre, is proved by statistics for Chinese agriculture.—

"Agricultural Statistics", says Richard B. Gregg in his "Which Way Lies Hope" (pp. 52-53). "show that under hand labour, as more and more people work the land, the production *per man* increases upto the density of 4 men per 100 acres or 25 acres per man, and thereafter decreases. But as the number of farm workers increases, the total production per 100 acres and average production per acre also steadily increases, though by smaller and smaller increments. The data for Chinese intensive agriculture, given in John Lossing Buck's "Land Utilization in China" (University of Chicago Press, 1939), show that this increase of total production and average production per acre continues upto the place where each farmer has 2.6 acres."

Although no data are available, yet the experience of small farmers in towns and their suburbs in our own country would also go to confirm the conclusion arrived at by John Lossing Buck.

It is not only gross production per acre that increases with the decreasing size of the farm: there is evidence to show that this is true also of net production. The author of "The Land and the Peasant in Rumania" says on page 254—

"The progress in the science of agriculture has shown that the laws of industrial production do not also hold good for the production of food-stuffs. In agriculture production follows a natural process which does not allow an indefinite division of labour: and this form of intensifying production has been proved to bring in returns which, for a number of reasons, diminish in the proportion in which the size of the agricultural undertaking increases, as illustrated by the so-called circles of Thunen. More recent inquiries have shown that this is true not only of the total output which was often conceded but also of net production. It might be useful to quote here one inquiry, because of its clear results and of the great competence of its author. The Director of the Swiss peasant Secretariat, Professor Ernest Laur, who is a member of the League of Nations Committee on Agricultural Questions, having worked over returns on capital for various categories of Swiss farms over a period of twenty years (1901-21), has obtained the following averages, in Swiss francs:

**TABLE XIII**

Size of farm in hectares	Value of total production per hectare	Value of sold produce per hectare
3-5	1,180	795
5-10	1,005	740
10-15	900	700
15-30	825	660
Above 30	710	595

The table indicates a gradual increase in the net profits per acre, as well as in gross production, from the least intensive to the most intensive groups.

A Report of the British Ministry of Agriculture referred to in the monthly journal, "The Agricultural Situation in India: April, 1952", issued by the Economics and Statistical Adviser to Government of India also points to the conclusion that the intensity of production per acre is highest on the small farms and declines as the size of farm increases—

**NET OUTPUT PER 100 ADJUSTED\* ACRES****TABLE XIV**

Farm Size Group (Acres)	1947-48 (£)	1948-49 (£)
0-50	2,565	3 188
51-100	1,830	2,319
101-150	1,575	2,025
151-300	1,576	2,033
301-500	1,577	1,980
Over 500	1,551	1,923

\*Adjusted acreage of a farm means the actual area in sole occupation reduced by expressing the acreage of any rough grazing in terms of equivalent acres of crop and grass, which vary from district to district according to local conditions.

According to an address delivered by Professor Sering in the Emperor's presence before the German Agricultural Council in 1913, quoted in a **memorandum** submitted to the British Agricultural Tribunal of Investigation in 1924, "The evidence is conclusive that the new peasant holdings in the eastern provinces not only doubled the number of inhabitants in the colonized area — and that within ten years; they increased the cattle in the area from two to three-fold; the pigs from three to four-fold; while the grain crops were, in some cases half as large again, in others doubled. This was, of **course** only by dint of harder work than mere hired labourers would care to perform, and by making use of their children and women and old people to do the extra harvest work for which the great land-owners had to rely on Polish season workers".

In Poland the change from extensive corn growing to mixed farming showed great capacity for expansion in that direction. The number of animals (apart from improvement in quality) increased as follows between 1921 and 1938-39 (in millions)

**TABLE XV**

		( 1921 )	( 1938-39 )
Cattle	...	7.89	10.6
Pigs	..	4.8	7.7
Sheep	..	2.5	3.2

In Czechoslovakia the division of the large estates resulted in an improvement in the number and quality of livestock, an increase in milk production and even a rise in corn yields, because more livestock meant more manure (vide David Mitraný's "Marx Against the peasant", London, 1952, Page 127).

The British Agricultural Tribunal has the following comment to make about the family farm, that is, the farm worked by the occupier and members of his family with or without some hired labour :

"We believe that the productivity of European agriculture, particularly, of that of Denmark, Germany and Belgium, where the output has been the greatest, has been largely due to the attention given to the organization of the family farming system; and in Denmark which still offers the most instructive field for comparison, the maintenance and extension of the system have been regarded as the most secure

foundation for obtaining the maximum out of the land, while, at the same time, developing a democratic and rural social community. (Report, p. 87).

Whatever evidence is available of Russian collective farming proves that concentration of land does not increase production per unit. Doreen Warriner, the author of "Economics of Peasant Farming and Eastern Europe After Hitler", comes to the conclusion that—

"Measured by any quantitative standard of yields per acre, output per head, or the terms of exchange between agricultural and industrial products, the position of the peasantry in Eastern Europe in general was better, before the outbreak of war, than the position of the collective farmer in Russia."

The 2,60,000 collective farms of the USSR in 1952 have been reduced by amalgamation into 91,000 in 1955, and the average size has risen to 5230 hectares. We do not think there are any advocates of large-scale farming who can seriously contend that agricultural production in the USSR has now increased with the increase in the size of that agricultural undertaking. Constant shifts in internal reorganisation, a drive to bring millions of hectares of hitherto uncultivated land under cultivation, import of wheat from Canada (perhaps, wheat from the U.S.A. was taboo) recently in order to feed people in the Eastern European satellite countries and M. Nikita Khrushchev's criticism of a number of ministers, ministries and state and collective farms at the closing of the Siberian farmers' conference in July last, which clearly bespoke of frustration point to the contrary, viz., to the fact that large farms do not mean large production.

Below is given a table showing the average production of some of the agricultural commodities for USA, UK, several western European countries and Japan.

TABLE XVI

AVERAGE YIELD PER HECTARE (IN 100 KGMS.) DURING 1948-53\*

Sl. No.	Countries	Wheat		Tobacco		Barley		Maize		Rice (Paddy)		Potato	
		Actual	Relative (USA=1)	Actual	Relative (USA=1)	Actual	Relative (USA=1)	Actual	Relative (USA=1)	Actual	Relative (USA=1)	Actual	Relative (USA=1)
1	U. S. A. ...	11.3	(1.0)	14.2	(1.0)	14.4	(1.0)	24.4	(1.0)	26.2	(1.0)	162.5	(1.0)
2	U. K. ..	27.7	(2.5)	...	...	25.7	(1.8)	...	...	...	...	193.3	(1.2)
3	Denmark ...	37.0	(3.3)	8.6	(0.6)	34.5	(2.4)	...	...	...	...	190.3	(1.2)
4	France ...	18.9	(1.7)	17.6	(1.2)	16.5	(1.1)	14.9	(0.6)	35.8	(1.3)	127.8†	(0.8)
5	Federal of Republic of Germany.	26.3	(2.3)	24.6	(1.7)	24.2	(1.7)	23.0	(0.9)	...	...	212.0	(1.3)
6	Belgium ...	32.3	(2.9)	22.9	(1.6)	30.1	(2.1)	39.0	(1.6)	...	...	232.2	(1.4)
7	Netherlands ...	37.0	(3.3)	..	...	32.4	(2.3)	32.4	(1.3)	..	...	255.8	(1.6)
8	Norway ..	20.6	(1.8)	...	...	23.4	(1.6)	..	...	..	...	200.5	(1.2)
9	Sweden ...	21.7	(1.9)	...	...	22.3	(1.5)	..	...	..	...	136.3	(0.8)
10	Switzerland ..	26.4	(2.3)	19.4	(1.4)	24.7	(1.7)	31.0	(1.3)	..	...	182.2	(1.1)
11	Japan ..	18.8	(1.7)	16.8	(1.2)	21.0	(1.4)	14.2	(0.6)	39.1	(1.5)	119.2	(0.7)

The arable part of an average USA holding according to the 1950 World Census of Agriculture comes to 64 acres out of 215, that is 29.5 per cent of the total area. The average arable holding in western European countries is far smaller, even less than one-third and one-sixth of the average arable holding in the USA. It is 10 acres out of 27 in Federal Republic of Germany. The entire average holding in England, Denmark, France and Switzerland has only an area of 82, 39, 29 and 15 acres respectively as compared with 215 acres in the USA. The average Japanese holding is far too small—one-thirtieth of the American holding, i. e., two acres as compared with 64 arable acres. However, the USA is seen to produce less than almost all the countries in the table, even less than Japan where the average holdings are comparatively so small. Similarly, the production of the U. K. compares unfavourably with that of Denmark. It may be admitted that there are differences in topography, soil fertility, climatic conditions and the resource facilities that may be available to the farmers in the various countries, but the wide disparity in agricultural production in these countries, all of which are situated in the temperate zone and fall within the category of 'developed countries', cannot all be explained by these differences. The figures can at least be taken to point towards the conclusion that mere largeness of size of an agricultural undertaking does not lead to increase in production per acre.

Yet another table is given below, from which we can easily deduce that large area of culturable land per man engaged in agriculture (or large size of the agricultural undertaking) does not mean large production per acre. The preceding table enabled us to make a comparison of agricultural yields of some countries with those of the U. S. A: the following will enable us to make a similar comparison with the USSR. It will be found that, leaving out of account India and Philippines altogether, for they are acknowledgedly under-developed countries, the USSR, pride of the protagonists of large scale mechanised farming, is bracketed with Turkey and Yugoslavia and occupies the lowest place, both as regards production per acre and production per man—

# TABLE XVII

Classification of 26 countries with respect to the relationship between the intensiveness of cultivation and agricultural output per person engaged in cultivation.

Value of agricultural production per person engaged (Rs. per year)	No. of persons engaged in agriculture per sq. kilometre of cultivable land.					
	0-5	5-10	10-15	15-20	20-25	25-30
Below 1,000	...	Philippines	..	..	...	India
1,000-1,500	..	..	Turkey Yugoslavia U. S. S. R.	..	..	..
1,500-2,000	..	...	Poland	Rumania	...	Italy
2,000-2,500	Brazil	Greece	Cyprus Bulgaria	Portugal	..	...
2,500-3,000	...	France Austria	Spain	..	Hungary	..
3,000-3,500	Sweden	Ireland	Syria	...	...	...
3,500-4,000	...	...	Germany Czechoslovakia	Belgium	...	..
4,000-4,500	..	..	..	...	..	..
4,500-5,000	...	Britain	...	Netherlands	..	..
over 5,000	...	...	Denmark	...	...	...

If we take mean figures both for agricultural production and for persons engaged in agricultural and treat the production of USSR as

\*From an article entitled, "Population, Growth And Living Standards" by Colin Clark, published in the "International Labour Review," August, 1953.

100, we arrive at the following table which will, perhaps, be more intelligible to a layman—

**TABLE XVIII**

Countries which have about the same area of cultivable land per person engaged in agriculture as USSR		Countries which have a smaller area of cultivable land per person engaged in agriculture than USSR		
Country	Index of production per acre (and therefore, per person).	Country	Index of production	
			Per acre	Per person
USSR	100	USSR	100	100
Poland	140	Rumania	196	140
Cyprus & Bulgaria	180	Italy	252	140
Spain	220	Portugal	308	180
Syria	260	Hungary	396	220
Germany & Czechoslovakia	300	Belgium	420	300
Denmark	420	Netherlands	532	380

Again, it may be conceded that there is a difference in soil fertility and climatic conditions of the various countries mentioned in the above table. But, again, this difference, particularly in the countries lying within the same climatic zones, cannot possibly explain the difference in production, which is so large, and especially when the claims

of the Soviet Union regarding progress in agricultural research and availability of resource facilities on its state and collective farms are so wide and insistent. Assuming, however, that the difference in conditions covers up all the difference in production, it will still be fair to conclude that the size of its agricultural undertaking, which is 100 times or more than that in any other country shown in the table, has not helped the USSR increase its agricultural output: it is not going to help India or China either.

Recently some studies of variation in output on farms of different sizes have been undertaken in six regions in our own country. The data collected both by the cost accounting and survey methods from five of these centres, available with the Land Reforms Division of the Planning Commission, "do not bear out the contention that large holdings are more productive and small holdings less productive. The data rather indicate a different trend: output per acre on small & medium holdings (more so in the latter case) is generally higher than on large holdings."

The report of our Delegation to China contains at pages 92 to 104 several tables showing acreages and production in China during the period 1949-1955. Two of these at pages 100-101 show the per-acre yield of major agricultural crops, and one may argue that the gradual increase from year to year mentioned therein is indicative of the correspondence between larger farming units brought about by the introduction of cooperative farming and higher output. In China the co-operative movement took shape in 1951 and its high tide occurred in 1955. Between 1952 and 1954 the increases, if any, are insignificant, and it is unthinkable that the large operational unit of 1955 should have produced such immediate effects as are reflected in the significant increase between 1954 and 1955. Whatever increases have taken place must, therefore, be ascribed to the financial and technical assistance so largely extended by the Chinese Government to its farmers. Quite apart from these considerations, judged even from the standards of a statistically backward country like India, the Chinese figures are utterly unreliable. In respect both of area and yield, they are based merely on visual estimation, and are therefore entirely subjective, in contradistinction to the figures in the tables quoted earlier in this chapter, which have been compiled on the basis of objective methods. In China there is no counterpart to our patwari; there are no scientific measurements; there are no cadastral maps; there are no crop-cutting experiments.

The sample surveys carried out in 1922-25 by Prof. John Lossing Buck are perhaps the latest example in China of scientific agricultural statistics. Reference to them has already been made. Our estimate of Chinese statistics is abundantly enforced by the following observations made by our Delegation in its report:

"By and large, it appears to us that Chinese data after 1952 are not strictly comparable with earlier data. As such, a part of the improvement that is revealed by figures of area and yield of agricultural crops in China after 1952 over those of earlier years may be considered to be statistical." (page 86.)

"In China, although some village maps were prepared during the land reforms, these were very rough sketch maps only and were not used for statistical purposes." (page 86.)

"Since in China, the objective method of crop-cutting sample surveys is not followed for estimating the yield of agricultural crops, especially of food crops, and since during the last few years there has been a vigorous campaign at all levels for increasing the yield and a spirit of competition is being fostered between different villages and different farmers, it may not be un-reasonable to presume that the tendency towards psychological bias which we have observed in India should also manifest itself in China to some extent. When the peasants and members of the co-operative farms, local agricultural officials as also local party members are told that yield of crops must be increased from year to year and that their work will be judged by their record in this regard and when there is a natural enthusiasm in the whole country-side for increasing yields and also out-doing others, it will be only human if instead of under-stating the yield they tend to over-state it." (pages 86-87)

"But the important point to find out is how far the yield per acre is improving year by year as a result of various measures undertaken in India and in China. Here, unfortunately, the statistics are not strictly comparable because while in India the figures of yield of foodgrains are at present largely based on crop-cutting sample surveys subject to no psychological bias, in China they are deter-

mined by subjective valuation which must be quite appreciably influenced by the psychological climate prevailing there." (pages 87-88).

In the light of the definite factual evidence given in this chapter, we have to consider or reconsider in all seriousness whether the plans and attempts at agricultural reorganization with a view to increasing the size of the farming units are not misconceived,

It is sometimes difficult to follow the logic of the advocates of agricultural producer cooperatives when some of them are at the same time found pleading for a ceiling being put on the existing large, private holdings on the ground that, size of the farm having no bearing on production per acre, their breaking up and distribution in small units, will not lead to decrease in total production. The latter view is certainly correct. But an upholder of this view cannot consistently advocate establishment of producer cooperatives, which will be large units, with a view to increasing production. The two views are mutually contradictory.

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## CHAPTER VIII

### MAINTENANCE OF SOIL FERTILITY

A long-term experiment to determine (1) the relative utility of the three major nutrients, nitrogen, phosphorous and potash, in the manuring of sugarcane and (2) the effects on soil fertility due to continuous application of artificial fertilizers, without being supplemented by any organic or green manuring, was started in Uttar Pradesh at Shah-jahanpur Sugarcane Research Station in 1935-36. The trial is being conducted in two adjacent fields in alternate years, so that a crop of sugarcane would be available every year, the rotation followed being cane-fallow-cane.

The treatments applied to the cane crop included all the 27 combinations of (i) 3 levels of nitrogen, namely, 0, 100 and 200 lb. N per acre; (ii) 3 levels of phosphate, namely 0, 75 and 150 lbs.  $P_2O_5$  per acre and (iii) 3 levels of Potash, namely, 0, 75 and 150 lb.  $K_2O$  per acre. Nitrogen was applied in the form of ammonium sulphate,  $P_2O_5$  as superphosphate and  $K_2O$  as sulphate of potash. The lay-out adopted for the experiment is of the split-plot design with main plots to the **three** levels of nitrogen and the sub-plots to the 9 combinations of phosphate and potash levels, with 4 replications, thus making a total of 108 plots in each field. The gross plot size was about 1/25 acre each and the total area occupied by the trial each year has been about 5 acres. The scheme of randomization adopted in the first year of the trial in each field has been maintained unaltered, so that the yields in successive years represent the treatment effect of the year plus the cumulative effects of the previous applications of the fertilizers.

The trial has now completed a period of 21 years with 11 crops of sugarcane in one field and 10 crops in the other. After the first 2 or 3 crops the average yields in both the fields began to show a more or less continuous fall showing thereby a marked deterioration in soil fertility. The rotation was accordingly changed in 1952-53 by introducing *sandi* green manuring before cane. Two crops of sugarcane have now been taken from each field after the introduction of green manuring —

## N. P. K. EXPERIMENT SHAHJAHANPUR

**TABLE XIX** —Mean Yield of Main Effects N. P. K. In mds. per acre

Year	Nitrogen			Phosphate			Potash		
	0 lb. N. per acre	100 lb. N. per acre	200 lb. N. per acre	0 lb. P <sub>2</sub> O <sub>5</sub> per acre	75 lb. P <sub>2</sub> O <sub>5</sub> per acre	150 lb. P <sub>2</sub> O <sub>5</sub> per acre	0 lb. K <sub>2</sub> O per acre	75 lb. K <sub>2</sub> O per acre	150 lb. K <sub>2</sub> O per acre
Field I									
1935—36	559	887	852	769	753	776	773	763	763
1937—38	357	794	802	641	652	629	647	642	664
1939—40	564	910	898	784	797	791	784	792	797
1941—42	253	627	728	512	552	543	542	531	535
1943—44	396	662	678	568	580	588	584	569	589
1945—46	394	537	595	504	512	510	513	494	520
1947—48	376	462	515	447	445	461	453	447	452
1949—50	219	437	467	354	375	394	387	372	363
1951—52	109	266	341	239	243	235	244	238	234
1953—54*	434	708	718	611	626	624	612	609	630
1955—56*	523	798	817	709	714	714	710	715	712
Field II									
1936—37	388	651	795	602	620	613	603	613	619
1938—39	561	832	884	755	761	761	751	758	767
1940—41	389	520	539	490	478	480	486	470	491
1942—43	466	937	1035	822	814	823	814	816	828
1944—45	429	727	785	629	648	663	646	646	648
1946—47	301	551	512	412	418	435	410	426	427
1948—49	289	515	545	441	453	456	445	450	454
1950—51	276	432	531	393	417	429	399	408	432
1952—53*	429	650	703	492	589	601	585	607	590
1954—55*	432	790	850	682	686	703	686	688	698

\*After green manuring.

It will be seen that in both the fields, till the introduction of green manuring, there was a marked deterioration in the average cane yields with the progress of years. The over-all average cane yield fell from about 690 mds. per acre to about 325 mds. during the period of 17 years. With the introduction of green manuring the improvement in soil fertility became quite marked as shown by the shooting up of the cane yields in both the experimental fields.

The salient conclusions, according to Dr. R. K. Tandon, the Director of the Research Station, are—

- (1) There is a definite fall in the average yields of both nitrogen-manured and unmanured plots. Phosphate and Potash applications have not shown any response. The mean values for the over-all average fall in yield are:—  
Mds. per acre per crop

Control (No nitrogen)	30.24
100 lb. N Per acre	55.54
200 lb. N Per acre	52.75

- (2) Continuous application of sulphate of ammonia without any organic or green manuring has resulted, on the average, in an additional deterioration (as compared with no manure) to the extent of about 25 maunds of cane per acre crop.
- (3) For sustained high yields over long periods artificials only can never be depended upon; a proper balance between the organic manures and inorganic (artificial) fertilizers is indicated as a permanent policy for obtaining good yields over long periods.

The famous Rothamsted experiment in regard to effect of organic and inorganic fertilizers in the production of wheat has thus been described by T. B. Wood in his "THE CHEMISTRY OF CROP PRODUCTION": "Perhaps the most famous field at Rothamsted is the Broadbalk Field on which wheat has been grown every year since 1852. This field is divided into nineteen plots, each plot being half or quarter of an acre. The plots are manured differently, but such plot gets the same manure year after year. One plot has been continuously unmanured since 1852. From 1852 to 1861 its average yield was 16 bushels per acre. From 1892-1901 it yielded on the average just over 12 bushels per acre. In

fifty years, therefore, the productivity of this plot for wheat has only decreased by less than 4 bushels. Wheat is therefore a good forager, no doubt in virtue of its deep and extensive root system. The average yield of the unmanured plot over the whole 50 years is 12 bushels per acre.

"The average yield of the plot manured every year with mineral manures, i. e., phosphates, potash, and lime, is only 15 bushels per acre, from which we may conclude that wheat is not specially benefited by these manures. The plot manured annually with sulphate of ammonia has given an average yield of 21 bushels per acre, which shows that wheat is specially helped by nitrogenous manures."

"It is not, however, entirely independent of phosphates and potash, for on the plot which received annually sulphate of ammonia, together with phosphates and potash, the average yield has been 31 bushels per acre, an increase of 10 bushels over the yield of the plot receiving nitrogen only."

"The best yield is given by farmyard manure—36 bushels per acre on the average of 50 years—or 5 bushels more than the plot receiving a complete mixture of artificial manures. This increase is perhaps due to the improvement in the physical condition of the soil by the humus resulting from the farmyard manure."

Every manure, which disturbs life in the soil and drives away the earth-worms and bacteria or other humus-making organisms, makes the soil more lifeless and more incapable of supporting plant life. The dangers of one-sided fertilizing are, therefore, obvious, especially when one uses strong doses of chemical fertilizers containing soluble salts like potassium or ammonium sulphates, or highly corrosive substances, such as nitro-phosphates (usually under some fancy trade name), or poisonous sprays, such as arsenic and lead preparations. These injure and destroy the micro-organic world. Soils intensively treated with chemical fertilizers or orchards sprayed for a long time with chemicals have no longer any biological activity.

Further, all crop increases from chemicals are short-term benefits. Plants raised by these means are much more liable to pest and disease attacks, the natural laws of growth having been violated and disturbed. Plant disease will cure itself when plants are raised on humus manures; plants raised by chemical help are in ever-increasing need of insecticides and further chemical treatment.

"Chemical fertilizers undoubtedly stimulate the soil", says Richard B. Gregg (vide "Which Way Lies Hope," page 14), "but the stimulus fairly soon decreases; more and more has to be applied per acre each year to get the same result; the soil organisms decrease; plant diseases increase; insect pests increase; quality of yield goes down; farm expenses rise".

Even those who are in favour of chemical or mineral fertilizers advocate that they should be used in combination with some or other suitable means of humus maintenance. And farm-yard manure is admittedly the best such means. So that a large farmer to the extent he lags behind the small farmer in the maintenance of cattle, will generally lag behind in the maintenance of soil fertility and, therefore, ultimately in the yield per acre.

There is a cycle in Nature which a small farmer can help best complete: if this cycle is broken Nature takes its revenge in returning smaller yields.

The task of agriculture is to transform solar energy into the chemical energy stored up in human food. This transformation can be brought about about only through the agency of living organisms. Green plants and, particularly, cultivated crops, constitute the best and most efficient among such agencies—the first basis of agriculture.

But only one-quarter of the material of which the crop is composed occurs in a form suitable as human food. Three-fourths of the produce of plant occurs in the form of residues such as straw, chaff, roots, etc. which cannot serve as human food or production purposes. Nature has, however, so ordained that these residues can serve as animal food, instead. Not only that: the animals can convert this straw and chaff into other forms of organic matter fit for human consumption. But as in the case of crops, animals too, on their part, can make available only a quarter of the energy they consume, as products we can use. The rest goes into waste material—excreta. The excreta contain all the mineral plant nutrients taken in by the animal in its food, and need to be decomposed and the nutrients re-converted into forms available to plants. This decomposed farm-yard waste is usually known by the name 'compost'. So that the mineral nutrients originally derived from the plants have to be dug in or ploughed back in the form of compost into the soil which will make the nutrients again available to the plants. It is thus that Nature's nutritional cycle becomes complete. It is thus, viz., by ensuring the return to the soil of organic wastes for regenera-

tion by bacteria, worms, etc., that the fertility of the soil will be maintained.

If, therefore, we are to raise the Productivity of the soil, we must make live-stock an indispensable element of agricultural economy. Live-stock—another living machine—is the second indispensable basis of agricultural industry. But it is the small farmer who can afford to keep comparatively a larger number of live-stock and thus be able to derive greater income per acre than the large farmer. A large farmer cannot ensure the return of all the organic wastes, which may be primarily derived from his farm, to the latter and cannot, therefore, aid Nature in completing the Nutritional Cycle.

Speaking in the Lucknow University on the researches carried out in India and specially with which he had been associated from 1930 onwards, Dr. N. R. Dhar, Director of Sheila Dhar Institute of Soil Chemistry Allahabad, said on December 17, 1956 that, "Cowdung used, by our ancestors from time immemorial was the best manure suitable to our soil. Next to it was organic plants such as weeds and legumes etc., which liberated a large quantity of energy due either to bacterial decomposition or photo-chemical oxidation. These not only increased the production of crops but also enriched the nitrogen content of the soil."

"Haber's method," he said, "which was used at Sindri and other places in this country, for the synthesis of ammonia and its subsequent conversion to ammonium sulphate, had some inherent difficulties. The soil of India and other eastern countries was more alkaline and so it could not absorb ammonia properly. Though this method gave a good production of crops, it reduced the nitrogen content of the soil—an injurious thing for the soil."\*

The role of peasant or small-scale farming in maintaining soil fertility has been very forcefully put by David Mitrany in his book 'Marx Against the Peasant' (London, 1952) from which we will quote *an extenso*—

"Besides, perhaps the most important aspect of the matter had almost been lost sight of in the debate about production quantities, namely, the vital need of maintaining the productivity of the soil. That is a need which concerns every country, but not till the shock caused by some disaster, like that in the 'dust bowl' of the western United

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\*("The Pioneer", dated December 19, 1956, p. -3)

States, had it received the attention which it merits. Good farming means not only what is got out of the soil but also what is put back into it, to keep it 'in good heart and condition'. Everywhere and at all times experience seems to have shown the same close relation between large-scale farming, especially under tenancy, and the impoverishment of the soil. Even in the United States the policy is now to break up the old cotton lands of the South into small units for mixed subsistence farming, as the best way of redeeming the soil (as well as the health and self-respect of the eight million white and negro share-croppers) exhausted by the endless raising of the profitable commercial crops. The planter and large tenant often treated the land as an investment, to be used as long as it paid and sold as scrap: 'land is with him a perishable or moveable property.' Marx, characteristically, had simply laid it down that small-scale cultivation impoverished and exhausted the soil. Yet how could a peasant, who expects to raise generations on the same bit of ground, treat his land otherwise than as a living thing? The virtue of ancient and recent peasant farming, wrote a reviewer in the scientific journal, "Nature", is that it returns to the soil the elements of life.

"There is a strong element of ideal truth in the old Socialist argument that being God-given, and needed by all, the land should be no man's private property. Yet the land as such would be of little worth unless its bearing powers are perpetuated. It is the function of the land, not its raw substance, that society must possess for well-being and survival and in that sense the claim to individual ownership may be logically rooted in the nature of agricultural production itself. With the factory worker, even the artisan, the quality of his product depends on the quality of the material and on his own skill. Whatever tools or machinery he uses are a passive factor, taken over as they stand from the previous user and passed on to the next but little affected by their temporary use, or easily replaced. All the variable factors of production, materials and skill, are wholly absorbed in each object produced, while machines and tools are transient. With the farmer or peasant, the matter is very different. His chief tool is the soil itself, or rather it is partly tool, partly raw material, a unique combination in the whole scheme of production. It is unique in that it is both a variable factor, affected by each period of use, and at the same time a constant factor, which cannot be replaced. What the farmer can get out of it depends greatly on the state in which the soil was passed on to him by the previous user, and his own way of treating it will affect the results obtained by the next user. Neglect of the

soil by one may make it of little use for many. Quite apart from immediate benefits, therefore, the very nature and spirit of cultivation seem to require that the man who tills the land should have constant use of the same piece of the same instrument" (pp.128-129).

Only when the farmer has the same regard for his soil that he has for his bullocks, the welfare of which he guards daily, can we expect to get from it a performance commensurate with its capacities, year in and year out, without detriment to it. To the peasant, and, let us be clear in our minds, human nature being what it is, not to a member of a co-operative or collective farm, such care and regard are a matter of his own survival.

The few inches of top soil are the most prolific and universal source of wealth that mankind possesses. Large-scale technology which goes with big farms is, however, busy destroying this wealth. It takes Nature, in the most favourable circumstances, from 500 to 1,000 years to make one inch of top soil. But to-day man, due to his indiscreet use of land, is turning vast areas of fertility into deserts in much less than a generation, by helping causes of erosion: quite a good amount of land available for cultivation is gradually but appreciably being lost due to bad soil management. Soil erosion or exhaustion follows where the land is shattered by bulldozing, where man removes forests regardless of their wind-protecting, rain-protecting and shade-protecting benefits; where he ploughs deep and wide and up and down a slope instead of in terraced contours. It occurs when he allows the cattle to overgraze the pasture; when he practices monoculture, without rotating his crops. Modern large-scale farming has been most successfully developed commercially in America, but soil erosion has also proved most wide-spread and disastrous. The one-crop grain and cotton regions in the USA undoubtedly show a much larger decline in fertility than livestock districts. Only by faithfully returning to the soil, in due course, everything that has come from it, can fertility be made permanent and the earth be made to yield a genuine increase. The only way to preserve soil structure is to add humus—and the most feasible way to obtain humus is through the composted farm-yard manure.

The small cultivator has, to repeat, a positive contribution to make in this regard. He depends entirely on his animals and himself for all agricultural operations, works up his land well, has a valuable source of organic manure in his farm and animal wastes, keeps his land covered with some crops, and above all, takes care of his land like

his precious treasure, for that means life for him and his family and dependents. In mechanised cultivation, which necessarily involves replacement of animal and human power by machines, a valuable source of organic matter is lost and, with that, starts the whole series of troubles for the land, the animals and the human beings. The chemical fertilizers then find increasing use, sometimes exclusively, and give rise, in turn, to a number of plant maladies which lead to further discovery and use of insecticides and pesticides. But the fact remains that the diseases multiply unabated and the vicious circle spreads. This is a pointer of Nature and must not be ignored. It emphasises the need for use of organic manures which can prevent and even combat diseases and which *alone* can ensure abiding quantity (and also, as some recent reserches would show, better quality).

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## CHAPTER IX

### CO-OPERATIVE FARMING UNNECESSARY

The protagonists of large-scale farming contend that it has at least four advantages over small-scale farming. Firstly, technologies can be used on big farms alone. Secondly, water, credit and marketing facilities, and technologies which go to swell the produce and income of a farmer, can be easily available on large farms rather than on small ones. Thirdly, planned crop rotation is possible only on big farms. Fourthly, more than one wasteful operation necessitated by small size of peasant farms will be eliminated, and costs reduced.

Now what do we understand by technologies in agriculture? They are of three kinds:

One group of agricultural technologies springs from the biological sciences. Illustrations are the high-producing, scientifically-bred varieties of plants and animals, including, of course, various types of hybrids. Also, there is a group of vaccines for the prevention or cure of livestock and poultry diseases which are basically biological in nature.

A second group is what may be called the chemical type of agricultural technologies, because it springs largely from the work of the chemist. Examples of it are the ordinary commercial fertilizers so commonly used in many countries, a large and important list of insecticides and fungicides, and also weed-killers. Still another example is some of the modern supplements to livestock rations.

A third group of agricultural technologies springs from the work of the physicists and the engineers. Examples are tractors, the many complicated farm machines and equipment that go with power farming, and also a long list of other things such as farms buildings, silos, and storage facilities, and even farm-to-market roads and marketing facilities. All these are basically engineering structures or designs.

As regards the first and second group, they do not need a large farm to use them. They are being used in the fullest measure on two acre farms of Japan. The responsibility for development of scientifically-bred varieties of plants and animals, preparation of vaccines and discovery of fertilizers, insecticides and fungicides, shall, of course, have to be shouldered, as all the world over, by the State. Research takes generations and colossal sums of money and cannot be the responsibility of individuals.

As regards the third group, i.e., tractors and other large machinery, etc., it is true that they cannot be used, or are unnecessary on small farms. But at the same time it is also true that these technologies do not increase production per acre that we in India are concerned with.

It may be stated here that use of machinery in agriculture is also called higher or improved technique as distinguished from bullock-farming which is characterized as a low technique. These erroneous designations have done much to create a bias in favour of the former and against the latter.

We have already seen that in agriculture it is not machinery that produces the commodity but the soil. Did machinery by itself contribute to agricultural production, the yield per unit of land in the United States of America, where the chief means employed in working the farm is the use of large machinery, would have been greater than that in western Europe where much less machinery is used and Japan where land is worked for the most part by human labour. But we find that the reverse is the case. Agricultural production in pre-war China also was greater than what it was and is in the USA per acre. That the production per unit of labour in the United States is several times greater than in Japan or China is besides the point. Mechanization of farming operations does improve considerably the yield per unit of labour; it does not increase the yield per unit of land. That the USA is able to export agricultural produce in such large quantities is due not to high production per acre but to her vast total acreage.

That the introduction of mechanized agriculture or cultivation by means of tractors does not lead to any increase in per-acre yield is now admitted by our experts also. Following are the results obtained from some cultural experiments conducted by the Indian Agriculture Research Institute—

**TABLE XX**

Type of ploughing.	Mean yield in mds. per acre (sugarcane)
CO Desi ploughing by bullock power ...	409.9
CI Tractor ploughing upto 6 inches followed by twice discing and twice grubbing....	361.5
C2 Tractor ploughing upto 10 inches followed by twice discing and twice grubbing. ing. ...	356.2

In tropical regions or regions of heavy rainfall like India, tractor-ploughing will, as the figures indicate, prove a curse. "Steel mold-board plows", says the author of the "Which Way Lies Hope" "which turn over the soil expose too much of the soil to the hot tropical sun, thus killing too many of the soil bacteria and other microscopic lives on which the life and health of the vegetation depends. It is no mere coincidence that soil erosion in America has advanced with the increase of technology in farming. Methods that are continuously effective in temperate climates with moderate precipitation distributed evenly throughout the year are dangerous if applied to tropical lands with monsoon rainfall. Even European methods applied indiscriminately to American conditions did much injury to the soil'.

Mechanised cultivation is found suitable only in the conditions of the Russian steppes or prairies and in such other regions where the climate is cold or temperate and there is little or no rainfall, or where, as in Western Europe, the land receives the rainfall distributed in the form of showers all over the year, but not in the conditions of our country which has a tropical climate and large parts whereof receive torrential rainfall during a short period. The nitrogen and organic carbon contents of our soil are already low and the layer of the humus very thin. So that mechanization of agriculture, particularly, of tilling, will lead to erosion and further depletion of our soil. The fine humus structure of the soil cannot be produced or preserved by machines; they will rather destroy the real creators of natural humus. Tractors and machinery in our country may with advantage be employed only in the eradication of deep-rooted weeds like *kans*, *hirankhuri* and *motha*, in opening up and colonisation of new areas, i. e., in bringing cultivable, but hitherto uncultivated, waste land under cultivation, or, in clearing land originally under jungle.

The argument that ploughing with mechanical power is more economical than ploughing with animal power is neither supported by logic nor by experience. According to document no. 5 (pages 19-20), published by the "European Conference on Rural Life, 1939", "while, in the case of tractors, variable costs are high and fixed costs low, in that of draught animals the variable costs are trifling and fixed costs are considerable. In other words, the tractors, though expensive when in actual operation, cost little when idle, while the cost of keeping draught animals, though scarcely higher when they are at work than when they are resting, is continuous since they have to be fed and cared for whether working or not. Hence the use of tractors is most profitable when

a great deal of work has to be done in a short time. Animals, on the other hand, are more economical when the work is divided fairly evenly over the entire year."

In as much as laid-up tractors do not eat, they are worth while only when the work is intermittent. They are not profitable for the usual run of agricultural work. So that in our country where steady and constant work throughout the year is generally available, the use of bullocks for traction purposes is not uneconomical as compared with that of machinery. In fact, the bullock in our conditions is far beyond the reach of tractor competition.

Yugoslavia found by actual experience before the Great War that purchase of large machines (specially of tractors) and their maintenance was too expensive even on a cooperative village basis, and also wasteful, particularly when working animals were adequate for the purpose and human labour, as here in our country, was so plentiful. We believe the experience of owners of the few mechanised farms that there are in our State, is also none too different. In India mechanization is likely to prove still more expensive because petrol and at, at least, for some time to come, even the machines will have to be imported from abroad. In the USA the cost of kerosene and lubricants represents 42 per cent of the entire cost of tractor work: in India, which is distant from the sources of supply, these costs will be about 25 per cent higher, viz., 52 per cent, owing to transport and tariffs.

Chinese experience is similar. A conversation between Prime Minister Chou-en-Lai and the Indian Delegation, which visited China in July-August, 1956, has been reported thus: "Mr. Chou-en-Lia went on to say that the heavy pressure of population in China meant that the development of agriculture at least for the present could not be based either on mechanisation or on large-scale reclamation. In China, the cost of production in mechanised farms might well prove to be higher than the cost of production in non-mechanised farms where farmers worked with ordinary farm implements. The reason was that labour was still much cheaper in China. These big State-owned mechanised farms when set up even with gift tractors were not, therefore, unmixed blessings. They were causing the State quite a lot of expenditure." (P.23-24 of the Report)

Professor Buck in "Land Utilisation in China" examined the possibility of replacing present Chinese methods of cultivation by tractor

farming. He found the present methods definitely more economical than the use of tractors:

**TABLE XXI**

Chinese Dollars

First cost of tractor and plough	...	2600.0
Depreciation, interest & repairs	...	970.0 per year.
Minimum over-head cost (assuming	...	
the tractor is fully shared between	...	
different users)	...	4.75 per hectare ploughed

Therefore operating expenses per hectare for ploughing by tractor:

Chinese Dollars

Kerosene	...	3.78
Lubricants	...	1.4
Labour	...	0.5
Over-heads	...	4.75
		<hr/>
		10.43
		<hr/>

Whereas at the time of writing (1951) land could be ploughed by buffalo teams at a cost of only 4 dollars per hectare.

Leonard E. Hubbard, a very impartial writer on Russian agriculture, speaking of the comparative costs of animal and mechanical power observes:—

"The apotheosis of the machine leads to its use out of season as well as in season. It was the experience of the German farm concession (the celebrated Drusag which until 1932 farmed some 27,000 acres on the Kuban) that ploughing with animal power was often more economical than ploughing with mechanical power. Animals (they use oxen a lot in the North Caucasus) were very cheap to keep and wages were low; a unit consisting of eight yoke, a four-furrow plough and two men, or a man and a boy, to guide the leading yoke, ploughed a hectare as efficiently and at a smaller total cost than a tractor. The latter, of course, came into its own when speed was a factor; for instance, when autumn rain made the soil just right for sowing winter grain. The Russian, however is inclined to think that, because the tractor turns over the soil at a prodigious rate and with lots of cheerful noise and bustle, it is doing it more economically and efficiently than any other method. In 1935 the official standard consumption of tractor fuel in spring ploughing one hectare was 21.6 kilos (vide an article "The Production Cost of Grain in State

Farms" in "Planned Economy" No. 2, 1937) and in 1934 the price of one litre of benzine was about equal to the price of 10 kilos of grain. 21 kilos of benzine would be about 23 litres (one litre of water weighs 1 kilogramme, and the specific gravity of benzine is approximately 0.90), equal in cost to 230 kilos of grain. The quantity of corn and hay consumed by horses during the process of ploughing one hectare could not be more than the equivalent of 30 kilos of oats. According to the same authority, the total consumption of fuel in producing and, presumably, harvesting and threshing one hectare of spring wheat in 1935 was 57.3 kilos, equal in cost to 63 litres, or 630 kilos of grain, or very nearly the whole crop ..... If these figures are correct, it is no wonder that the State farms were being run at loss". (vide "Economics of Soviet Agriculture-1939", pp. 260-61).

And we must remember that it is in the USA, Canada, Australia and the USSR alone that mechanization is synonymous with the big tractor and harvester-thresher or that mechanised farming means large-scale farming. In Europe, on the other hand, mechanisation seems increasingly likely to take the form of electrification of the countryside and the use of labour-saving machinery, leaving the structure of the small holding unaffected. There the manufacturers of agricultural machinery had begun to turn out before the last war machines suitable for use on small holdings, while possessing the advantages of large machines. "Engineers are now designing small implements, machines, and tractors, suitable for peasant holdings: some can be worked by small internal combustion engines and some by electricity; the use of both was spreading over Europe before the War and we hope will continue to do so after the War; either can work a small machine almost as economically as a large one", said Sir E. John Russel, Director of the Rothamsted Experimental Station, in a paper read in a Conference held in April, 1943. David Mitrany, the author of "The Land and the Peasant in Rumania", had also written long before the last War, "that 3 ha was the smallest area on which machines and implements could be rationally used." Three hectares come approximately to 7.5 acres or 12 standard bighas only. German experience indicates that a field between one and two acres is not too small for a tractor of, say, 15-20 H.P. In Japan they have devised small tractors which have 3 to 5 horse-power and can plough one acre a day. (In 1950 these tractors numbered 11,131 throughout the country, whereas the farms numbered more than six million). That is, a large farm is no longer a condition precedent to the use of machinery or application of scientific knowledge.

In any case co-operatives can be established for the purchase of such agricultural machinery as the farmers may need, for example, for operations where the time factor is important such as planting and harvesting, but which they either have not the means to buy, or, which would not pay if used on a single small farm. Only, joint use of such machinery will necessitate co-operative cropping schemes, which can be achieved without pooling the land into a single large unit.

When the holding is too small and uneconomic for the use of bullocks the inevitable conclusion is not to pool them so that machines may be used. They can be worked by manual labour, as they are in Japan and China. For, we should not forget that our aim is to get the best out of the land, to make it yield the maximum production per acre and, at the same time, to keep the largest number of people employed.

As regards the second advantage of large-scale farming, it is true that a man of small means, particularly, if he is an uneconomic holder, cannot often afford the facilities, technological and other, that will augment his produce or income. There are, however, two other courses open:

Either the State should provide the facilities as it is doing to-day in a small measure in the form of canals and tube-wells and provision of taqavi, fertilizers and insecticides. Or, the peasant farmers combine their resources and on the basis of these resources find these facilities for themselves, that is shortcomings of small-scale production be mended by co-operative arrangements. In the latter case the crucial question is—to what extent should they pool their resources? What is the right socio-organisational principle which will serve to raise the rural standards of living, and yet not rob the peasants of their liberty? Shall they pool their land and labour resources and work jointly on a large undertaking into which their holdings would have been merged, or, shall they keep their holdings intact, operate them independently and co-operate in non-farm operations alone, that is, pool their financial resources alone with a view to securing the facilities which actually go to increase the production or income of a farm, but cannot be secured by a small man on the strength of his small means? In our opinion, as we have already indicated, it is the latter type which will best suit our purpose. It is the co-operative principle, combined with the incentive of individual land use and private ownership of land, that offers the right solution.

Since an increase in the size of the farm does not lead to greater production per acre, it is unnecessary and it will be a mistake to ask

the peasant farmers to surrender their holdings. Co-operation need not extend to the act of farming, to those functions of farm management which can properly be executed within the boundaries of a single small farm: such functions should remain the object of the independent individual himself. All that peasant farmers need do by co-operative action is to save themselves from the disabilities entailed by the small size of their business and their lack of training in the ways of a commercial civilization. The real mission of co-operation in agriculture should be to secure to the peasant all the benefits and technical advantages of a large-scale undertaking, while they still retain freedom or advantages of private property. Through it the peasants should be able to secure the same results as large-scale production without the attendant hardships which this form of production has so often brought to the worker in manufacturing industry. Co-operation is the closer union of otherwise independent units—merely coming together of scattered entities—for purposes of eliminating certain disadvantages attendant upon independent, isolated action. Were the members of the organisation to sacrifice their economic and individual independence, it would amount to a merger, not co-operation. Nor, to repeat, from the nature of the agricultural business, is a merger leading to largeness of size, a condition precedent to increased production.

"Northern Europe", says Dr. C. R. Fay, Chairman of the Horace Plunkett Foundation, "has proved to the hilt that the highest degree of technical excellence is entirely compatible with family farming, but only on two conditions: first, that the land unit is the special subject of State guardianship, and secondly, that individual family effort on the land is supplemented by a group effort in purchase, processing and sale." (Vide "Year Book of Agricultural Cooperation", 1943-44, p. 64). So that large-scale farming is not essential, and, peasant farming as such offers no hindrance, to technical progress.

We may state here that by State guardianship is meant prohibition by law of agricultural land either from being amassed in large properties, say, in our country, more than 25 acres or 40 standard bighas, or from being divided by inheritance or sale into uneconomically small units, say, less than 3.125 acres or 5 standard bighas.

As regards the third advantage, viz. that of planned crop rotation being possible, there seems to be some confusion. What exactly is the objective of crop rotation? Obviously, preventing the soil from getting exhausted and maintaining its productivity. If so, these objectives are

better served, as we have already seen, by a system of small farms, where in big machinery is not used and farm-yard manure is not wasted, thus helping maintenance of soil fertility. The charge that small holders are not able to practise crop rotation is, in fact, true only against such of them as are greatly uneconomic or sub-basic holders, but this does not help the critics. For, such farms will not raise commercial crops which exhaust the soil and will, for their own subsistence, resort largely or wholly to food-crops which are not all or so exhausting and along with which nitrogen-fixing legumes can be easily sown or grown. Crop rotation is not essential to good farming in all circumstances: mixed cropping so widely practised by small farmers can serve the purpose equally well.

As regards the reduction of costs on a large farm: it is not clear which wasteful operations on a small farm the critics have in mind. Perhaps, they refer to loss of time involved in trips that men and bullocks have to make to the various scattered plots into which a cultivators holding may be divided, and to loss of water that may be entailed in irrigating such plots whether from a well or a canal. If so, these defects will be removed when these plots are consolidated into compact blocks. It does not take a large jointly-operated farm to eliminate such waste of time or water. Anyway reduction of operation costs is not our primary aim; at any rate, at the expense of a higher yield. Small farmers require comparatively more human and animal power than bigger ones, and this is not of much consequence because they do not have to pay for it. So that even if the money costs are reduced in a big farm, it will still be preferable to have smaller ones in view of their greater yield and the available surplussage of labour and cattle.

Some additional arguments in favour of large-scale farming which are sometimes urged may also be noticed. It is contended that a system of large farms promotes military strength. Reference is made in this connection to the military strength and staying power of Russia in the last world war as something directly due to her large-scale mechanised and collectivised agriculture. Secondly, it is urged that mechanised farming on a collectivised basis can find employment and social security to these millions of landless workers, who to-day somehow eke out their existence in a state of semi or gradual starvation, and are the first to go under in a time of crisis. Thirdly, it is claimed that co-operative farming (as distinguished from collective farming, which some of our public men grudgingly consider has not proved a success in the USSR and may not be practicable in our conditions of a democratic set-up), provides a

solution to the evils of uneconomic holdings and fragmentation.

The first objection presumes that with peasant proprietaryship an unadulterated system of handicrafts alone is possible in the sphere of manufacturing industry. This assumption, however, is untenable inasmuch as we find in Europe heavy industries existing side by side with peasant ownership making for strong military States, with a rural population, in some countries with a standard higher, but in none lower, than that of the collective farmers of the U. S. S. R. As for military strength, while conceding that the contribution of the collective farm in the Second World War to the defensive strength of Russia was incalculable, inasmuch as the kolhoz carried engines and machines to the most far-away villages and familiarized tens of millions of people with their operation, we must not forget that Germany, without collectivizing her agriculture, not only fought equally well but, perhaps, better; that her armies retreated from Stalingrad not because her soldiers were less machine-minded than the Russians, or owing to lack of ability of the commanders or inefficiency of her military weapons, but because, compared with the vastness of the opponent's territory, she had lesser man-power, a longer line of communication to maintain and had to defend her Western frontier as well from the impending invasion of Anglo-American forces. That this reading is correct will be clear from the experience of two previous Wars in which Russia had to contend against magnificent armies led by world-famed generals:

"I could go to Moscow, perhaps, farther", said General Von Hindenburg in the First Great War, "but Russia is so vast; she would swallow the largest army. Russia has no heart at which to strike."

And Napoleon is quoted in Caulincourt's *Memoirs* as saying more than a hundred years earlier:

"This is a bad business. I beat the Russians every time, but that does not get me anywhere."

As regards the second objection: we concede that peasant farming by itself provides little or no answer to the problem of the landless. But if there is not enough land to go round in the country, or, if it does not suffice even for those who are engaged upon it as cultivators today, we will have to find employment for the landless in occupations other than agricultural. Also, the belief that peasant farming cannot be carried on except with the help of hired labour, is unfounded. There

is no agricultural labour worth the name in the Hariyana districts of the Punjab, and whoever does not possess land in western parts of Germany, where, too, the holding is almost as small as in the Punjab, is engaged as an industrial worker in the factories. In both these parts of the world the peasant's wife works in the fields shoulder to shoulder with her husband and instead of being a burden to him as in certain other parts of India, is an economic treasure to her life-mate. Further, during periods of harvesting and on other occasions when time is a great factor, peasants can and, where necessary, do collaborate amongst themselves for providing the necessary labour. So the existence of landless labour is not essential to peasant-farming. As regards availability of employment for the landless in mechanized agriculture, whether it be organised on a collectivised basis or any other, it will throw out of employment quite a good percentage even of those who are employed to-day.

Now to the third objection: a little thought will reveal that, at least, so far as fragmentation is concerned, we need not resort to co-operative or collective farming in order to obviate it. Fragments of land belonging to one farmer, but lying scattered and at a distance from one another, can be easily consolidated into one block or two, compulsorily through law or voluntarily through co-operation amongst farmers. Consolidation of holdings has been carried out in several countries, resulting in great satisfaction to the peasantry.

Uneconomic holdings are undesirable, because they do not provide employment to the holders all the year round, leading to poverty. But mere pooling of land is no remedy: it does not create more employment. If one hundred persons possessing, say, two acres each and operating them separately, have to remain idle today for a good part of the year because of lack of sufficient land, one fails to understand how—by what magic—these persons will be able to find full employment throughout the year, merely because their land has been pooled into a farm of two hundred acres and they now work jointly or under a united direction. The number of acres in the total has not increased by the pooling, nor has the number of workers gone down. The proportion of rural population to the land available remains as before. If anything, unemployment in a co-operative farm is likely to increase, for, more likely than not, the farm management will, in the interest of smoother management, take to mechanization.

Could large scale agriculture be carried on more successfully, or produce more and give happiness to those engaged in it, should we not expect that logic of technological advance, i.e. economic and other forces by themselves would have, just as they did in manufacturing industry, led to the gradual disappearance of the small independent farm and its replacement, without any pressure from the State, by big units worked jointly by hundreds and thousands of persons? On the contrary, we find that the larger unit, almost wherever it existed, has been broken into small ones — a unique instance of deviation from the laws operating in manufacturing industry — and the average agricultural "business" all the world over, where a deliberate imposition has not been made from above remains as small as ever as it was, with the peasant farmer as its owner and worker, manager and financier, all rolled into one. The peasant has refused to be fitted into any slogan: his is a role which has defied all economic theories. Indeed, it is not possible for modern economics, nursed in the field of capitalist agriculture with the back-ground of 'wage & labour' and the criterion of as much rent or profit as possible, to give a true insight into the socio-economic nature of wageless family economy that the peasant agriculture symbolises.

At the time when Marx laid it down that in agriculture, as in industry, property was becoming increasingly concentrated and the large producer was bound to displace the small producer, scientific inquiry into agrarian problems had not yet begun and his plausible parallelism between agriculture and industry seemed incontrovertible. "But soon after the appearance of the third volume of *Capital* in 1894" says David Mitrany, 'the planks of the Marxist platform began to give way. The German population census of 1895 (the first since 1882) disclosed the peasant's astounding refusal to die. Between 1812 and 1895 the number of holdings of 2 to 20 hectares had increased by 1.26 per cent and the total surface they covered by 659, 259 hectares (about 1,650,00 acres). The same phenomenon was reported from countries as different as the United States and Holland. And the German census of 1907 killed the concentration theory altogether. It showed that notwithstanding the many favours which capitalist agriculture had received from the State during the preceding years, large estates and farms were constantly losing ground" (Vide "Marx Against The Peasant", page 25).

On the contrary, peasant holdings prospered or multiplied because

of the greater care and interest the peasants put into their work, and also because of the fact that their demands were sometimes lower than even those of rural labourers. His readiness to work harder and to consume less could be explained by the peasant's attachment to his land, as it explained his readiness to pay almost any price for it. For the capitalist, property or tenancy is a means of employing his capital; for the artisan, the small peasant, property is rather a means of employing his labour. The excess over the normal price which the small holder is willing to pay and the hard work which he willingly puts in, may be called the premium which he pays for his independence.

The Congress Agrarian Reforms Committee (1949) presided over by Shri J. C. Kumurappa remarked that "land has been further concentrated in fewer hands and there has been more and more proletarianisation of small peasants". This is not a correct appraisal. Below is given a table from the Census Report of Uttar Pradesh, 1951—

TABLE XXII

Principal means of livelihood.		1901	1911	1921	1952
Cultivators	...	48.53	59.80	64.18	67.41
Agricultural labourers.	...	9.03	9.48	8.68	5.71
Rent Receivers	...	7.11	1.80	1.76	1.06
Total :—		64.67	71.08	74.62	74.18

Figures of 1931 and 1941 have not been given because in these two censuses the occupation of workers alone had been recorded, and not of the entire population.

According to the Census Report (pages 155-56) for the entire country, during the twenty years following 1931, the percentage of cultivating labourers to all workers in land has fallen in Uttar Pradesh (18 to 9), Orissa (30 to 19), West Bengal (40 to 28), Madras (38 to 35), Bombay (43 to 18), Madhya Pradesh (43 to 32) and Rajasthan (11 to 4). The percentage has remained practically unchanged in Bihar (27-26), Mysore (13-14), Hyderabad (31) and Punjab (11-12). There is only one

major state where this percentage has increased—Travancore-Cochin (34 to 47).

The fall in the percentage of cultivating labourers is the natural result of increase in the number of cultivators. According to the Report the proportion of agricultural rentiers, which was already small in 1931, became still smaller in 1951.

Whatever other conclusions may be drawn, these figures are an unmistakable tribute to the inherent internal strength of the system of peasant farming, its adaptability to changing circumstances, its capacity to bear the stresses of modernisation, and above all its power to endure.

## CHAPTER X

### EMPLOYMENT

Apart from agricultural area, that is, arable and pasture lands that a country may possess, it is the availability of non-agricultural resources and, consequently, the density of agricultural population that will determine whether the country will have large-scale farming or intensive peasant farming. Of the three factors of production, viz., land, labour and capital, the one which is the-cheapest will be exploited more than the other two. Where land is plentiful, that is, a cheaper factor, and men few in number, the latter will not make the fullest use of the former. They will not try to obtain the highest yield per unit of land, but will bring a greater area of land into cultivation. In other words, large farms will come into existence and agriculture will become extensive. The more however, the value of land increases relatively to labour (and capital), that is, the more the population or, to be exact, agricultural population increases and the more scarce the land becomes, the greater yields will the cultivator seek to obtain from it by the use of increasing units of labour (or capital, or of both). In other words, small farms will come into existence and agriculture will become intensive. Extensive methods enable the farmer to obtain the biggest net return per unit of labour (and capital); intensive methods, however, give him a smaller net return per unit of labour (and capital), but a bigger net return per unit of land.

Below is given a table showing the availability of land per capital and per economically active person in agriculture in the various countries—

TABLE XXII

SHOWING AVAILABILITY OF LAND PER CAPITA AND AGRICULTURAL LAND PER ECONOMICALLY ACTIVE PERSON IN AGRICULTURE IN VARIOUS COUNTRIES

(SOURCE:—Please see Foot note 1)

Per Capita Area (in cents.) (cent = '01 acre)

Country	Year	Total Area	Land Area	Arable Land	Permanent Meadows and Pastures	Forests and Woodland	Other Land Area	Economically active	Total area of	
								Population in	Agricultural	
								Agriculture	Land (Arable and Meadows)	
								per Econo-	mically active	
	Year	In Thousand						person in	Agriculture	
									(In cents)	
1	2	3	4	5	6	7	8	9	10	11
1. India	... 1952	221	N. A.	93	6	30	92	1951	71809	502
2. China	... 1947	519	504	49	103	45	322	...	N. A.	...
3. Indonesia	... 1947	484	N. A.	36	...	258	190	...	N. A.	...
4. Japan	... 1951	108	N. A.	15	4	66	23	1950	17230	92
5. France	... 1952	320	N. A.	124	71	66	59	1946	7484	1112
6. Italy	... 1953	155	152	81	26	29	19	1954	8468	618
7. U. K.	... 1953	119	117	36	59	8	16	1951	1116	4300
8. U. S. S. R.	... 1947	2657	N. A.	268	148	1098	1143	N. A.	N. A.	...
9. U. S. A.	... 1953	1211	1192	299	395	389	128	1950	7331	15123
10. Denmark	... 1953	242	239	155	21	25	41	1950	518	1493
11. Germany (East)	... 1949	151	N. A.	71	18	41	21	1946	2378	662
Germany (West)	... 1953	123	121	44	28	35	16	1950	5113	684
12. Netherlands	... 1953	83	78	24	31	6	22	1947	747	763
13. Sweden	... 1953	1547	1414	131	32	792	592	1950	632	1853
14. Norway	... 1953	2384	2271	61	16	551	1756	1950	360	712
15. Belgium	... 1953	86	N. A.	29	20	17	20	1947	423	1013
16. Switzerland	... 1953	209	202	22	88	50	49	1950	355.4	1507
17. Canada	... 1951	17561	16485	691	388	6029	10453	1951	1008	15004
18. New Zealand	... 1953	3242	3208	60	1620	1053	609	1951	135.9	23797
19. Australia	... 1952	22000	N. A.	559	10335	543	10563	1947	498	189293
20. Pakistan	... 1953	308	N. A.	79	...	8	221	1951	17124	348
21. Egypt	... 1950	1209	N. A.	30	...	0	1179	1947	4245	143
22. Union of S. Africa	... 1953	2197	N. A.	164	1664	19	350	1951@	2395.5	10033

Foot Note:—

- The above table has been built on the figures of area taken from F. A. O. year book 1954; on the figures of total population used for finding area per capita for different countries taken from Demographic Year Book U. N. O. 1948, 1951, 1954 and U. N. O. Statistical Year Book 1951, and on figures of economically active population in agriculture taken from U. N. O. Statistical Year Book 1954.
- As the figures of total population were not available for the years for which total area was available, the figures of total population for 1951 for U. S. S. R. and for 1950 for Germany (East) were taken for computing figures of area per capita for these 'Countries'.

@. Figures of Non-Whites for 1946 and for Whites 1951.

It is clear that Australia, New Zealand, the USA, Canada and the Union of South Africa, with more land relatively to population engaged in agriculture, can afford the luxury of large-scale, extensive farming, whereas China or Japan, India or Pakistan, Italy or Germany, Belgium or Netherlands, with greater population engaged in agriculture relatively to land that is available, must of necessity have small-scale, intensive farming.

India is faced with the problem of unemployment. National interest, therefore, demands an agrarian economy, which, while serving to extract the maximum out of land that constitutes the limiting factor in our circumstance, will provide the optimum of employment for the rural folk. Such an economy can only be an economy of small farms as distinguished from that of large farms, whether private or co-operative. In fact, small-scale economy, both in the field of agriculture and industry, is the major solution of our unemployment problem.

Small holdings limit the use of machines and lead to intensive agriculture which finds employment for manual labour in far greater numbers than does extensive agriculture or large farms worked by machines. The number employed per 100 acres in countries where small holdings predominate is greater than that employed in countries where large holdings form a large percentage. In the Irish Free State, for example, on equal areas of land there are five times as many persons working on farms of 15 to 30 acres and three times as many on farms of 30 to 50 acres as on farms of over 200 acres, and similar results are obtained from English, German and Danish statistics. According to Lord Addison, an ex-Minister of Agriculture, records prepared for the Government in 1930-31 for thirty-five different county council estates comprising nearly 17,000 acres, showed that population on these council lands, after they had been divided into small holdings, had increased from 1,048 to 2,298.

Mechanisation will lead to unemployment. As use of machinery makes it possible for a smaller number of workers to cultivate a larger area, a large farm served by tractors, combine-harvesters and threshers, employs less labour than small farms covering the same area. When machinery is employed, labour is necessarily saved. In one & a half hours a tractor can plough one hectare of land and a combine harvester can harvest an equal area in one-third of the time. A labourer who formerly ploughed hardly one acre with a pair of bullocks will be able to plough at least 12 acres a day with a tractor. The average area of land per

farm increased in the USA from 136 acres in 1890 to 215 in 1950, while the number of workers per farm in the same period decreased from 2.0 to 1.6 which means that in the USA increasing use of agricultural machinery in 60 years, on a given area of a farm, led to a fall of 50 per cent in the number of workers.

In the USSR in 1927, 25.6 million independent peasant farms contained 100.5 million hectares of arable land and, according to the census of 1926, 114 million persons lived by agriculture, thus giving an agricultural population of over 103 per 100 hectares of cultivated land. In 1937 after collectivisation of agriculture there were a little more than 18.5 million families cultivating 110.5 million hectares which at 4.8 members per family works out at 88.8 million persons or 80 per hundred hectares of farm land. There was thus a fall of 23 persons per 100 hectares of land in a decade owing to mechanisation of agriculture.

Even so, writes Sir E. John Russel, Director of the Rothamstead Agricultural Research Station, after his visit to Russia in 1937:—

“The number of workers per 100 hectares is usually large according to Western ideas, especially if one assumes that much of the work is done by tractors and combines. On the farms I visited it was about two to four times as many as would have been needed in England, but the yields were less and the work not so well done, indicating a considerable difference in efficiency of the workers of the respective countries.”

Thus, agricultural labour in the USSR was still far in excess of absolute requirements even after ten years of mechanisation. If agricultural labour were rationalised and machinery economically and efficiently operated, it would probably be found that about half the present available labour would be sufficient for the present type of farming. The Government of the USSR, however, as and when it considers necessary, can employ this surplus labour to bring new land in Siberia and Central Asia under cultivation. But in an old country like India, where man-power is running waste and there are no vast areas of virgin soil waiting to be broken up, big mechanised farms would be nothing short of a calamity; industrialisation alone would not absorb tens of millions of workers that would be released from land.

Mr. Hubbard in his “Economics of Soviet Agriculture, 1939” says: “since 1928 industry in the USSR has absorbed probably between 12 and 15 millions of rural population, but since 1932 the rate of

increase in wage-earners in all branches of activity has slowed down. Since industrial labour is steadily increasing in efficiency and productivity, it is unlikely that demand will expand at the same rate as during the first Five-year Plan, when total number of wage-earners doubled". Even in the USSR, therefore, throughout the buoyant period of economic expansion when tremendous cities and vast industrial enterprises were springing up all over the face of that country, only one million and a quarter persons—not more than one million and half in any case—were being absorbed into gainful employment each year, whereas in India the rate of increase in population alone comes to five million a year, not to say the existing tens of millions who cannot be said to be gainfully or fully employed today.

Typical of the view that reduction in employment in agriculture caused by mechanisation will be compensated by a rise in employment in other directions is the comment of Dr. W. Burns, made in his Note on "Technoloical Possibilities of Agricultural Development in India" submitted to the Government of India on September 30, 1943—

"Use of machines (sic) may mean fewer men per operation", says he, "but not per acre. There are numerous examples in which modern progressive farming has actually restored the numbers of men employed upon the land. Mechanisation, in addition, creates several new classess, those who make, those who manage and those who repair the machines. It employs, in addition, men groups who are the suppliers and distributors of the spares, the fuel and the lubricants. Mechanisation, particularly if it involves the transfrance of machines from one place to another, involves the improvement of roads and here, again, a large prospect of employment is opened up." (p. 127).

It is true that machanisation of agriculture will lead to creation of certain secondary and tertiary industries in which some of the displaced agricultural labour will be able to find employment, but in a country where most of the rural areas are over-populated, where there is already a pressing problem of agriculture labour even on the basis of the existing technique of agriculture, where the joint-family system contains so much hidden unemplyment and under-employment, expanding industry's demand for labour is, for many, many year to come, likely to be covered by the existing idle hands and

there is no economic justification in creating a supplementary labour supply through the mechanisation of agriculture.

In the words of Desmond L. W. Anker—"The building of the pyramids in Egypt or, more recently, of airfields and roads during the war years in China and Burma almost entirely with hand labour indicates what can be done by men working without machines; with the great amount of under-utilized labour to be found in these areas, would it not be preferable to use labour on agricultural development works, and use capital, the scarcest of the factors of production, for purposes more likely to yield greater economic return?

"There would appear to be much to be said, under the conditions prevailing in heavily populated under-developed countries, in favour of techniques for increasing agricultural productivity with a minimum amount of capital. It is claimed that with the use of such methods as improved seeds and application of fertilisers, yields could be increased by 50 per cent without any substantial change in present systems of farming, and without all the adjustments that mechanisation would make necessary. The experience of Japan is illuminating in this respect". ("Some Effects of Farm Mechanisation", International Labour Review, March 1955, p.250).

"Mechanisation", said Mahatma Gandhi, "is good when hands are too few for the work intended to be accomplished. It is an evil when there are more hands than required for the work, as is the case in India ..... The problem with us is not how to find leisure for the teeming millions inhabiting our villages. The problem is how to utilize their idle hours, which are equal to the working days of six months in the year".

Pointing out the comparative role of small and big industry in India, Pandit Jawahar Lal Nehru wrote in a foreword to 'China Builds for Democracy' (1942) by Nym Wales, as follows:—

"Gandhi ji has, I think, done a great service to India by his emphasis on village industry. Before he did this, we were all, thinking in a lop-sided way and ignoring not only the human aspect of the question, but the peculiar conditions prevailing in India. India, like China, has enormous man-power, vast un-employment and under-employment ..... Any scheme which involves the wastage of our labour-power or which throws people out of employment

is bad. From the purely economic point of view, even apart from the human aspect, it may be more profitable to use more labour power and less specialized machinery. It is better to find employment for large numbers of people at a low income level than to keep most of them unemployed."

In our country with its dense population the practical politician will have to correct the economical stand-point with the social, and in many respects the agrarian problem for him will become a problem of population. He will want employment more than he hates poverty. Hands, therefore, must have precedence over the machine in India (even if we equate mechanisation with plenty).

The objection that unrestricted use of machinery will create unemployment is met by the Communists with the argument that the collective farmers, who would include the whole rural population, could work only for, say, three hours a day and take holiday for the rest: that in place of so much poverty and starvation of today we shall have a perpetually rising standard of life. But the latter contention does not hold. A large, mechanized joint farm cannot produce more per acre than small peasant farms do. But even if it does, it is doubtful whether a holiday of nine hours of day-light could be regarded as a national gain. That an idler's mind is a devil's workshop, cannot be denied. "Leisure is good and necessary up to a point only. God created man to eat his bread in the sweat of his brow, and I dread the prospect of our being able to produce all that we want, including our food-stuffs, out of a conjurer's hat", said Mahatma Gandhi. Too much leisure demoralizes society and it will be an evil day for India when its peasantry succumbs to temptations of ease and pleasure. To us a society of individuals who have to work hard to earn just the wherewithal to acquire the reasonable necessities and bare comforts of life would be preferable to a leisured class with all and every thing found for little effort.

The advocates of mechanisation forget that the chief benefit the rational use of the machine promises is certainly not the elimination of work; what it promises is some thing quite different—the elimination of servile work and drudgery. A peasant's work, however, on his own farm neither deforms the body, nor cramps the mind, nor deadens the spirit, i. e., it is not a type of work which machine was intended to eliminate. A peasant proprietor is not a slave to any body; his work is not servile. One need not, however, be opposed to use of

all machines by the peasant; the machine that does not deprive man of opportunity to work, but lightens his burden and adds to his efficiency, that eases drudgery—machine which is the willing slave of man and does not make him but a machine, is to be welcomed. We shall, therefore, use all the latest gifts of science and technology in order to lighten the toil of the farmer and make it more productive but not at the cost of his independence or disappearance of his very farm. "If we could have electricity in every village home", Mahatma Gandhi once said, "I shall not mind villagers playing their implements and tools with electricity". In Japan about 97 per cent of all farmers have electricity.

Lastly, although the advocates of co-operative farming are not yet clear in their mind as to the traction power they would like to use, when confronted with the objection that mechanization is likely to lead to unemployment, they some times reply that the co-operative farms of their conception will be run with animal-power, instead. Now, this is a novel proposal: in the only countries in which co-operative or collective farms have been working for some time they are mechanized. It is already difficult to organize human labour in the various operations on a mechanized farm or kolkhoz; it will be still more difficult to do so if we add the work of looking after, say, 50 pairs of bullocks to the tasks of a farm. The personal attention and devotion which the tending of animals demands cannot be forthcoming in a community of, say, 100 persons who have only a joint interest and responsibility. Animals can be best looked after only when they are the exclusive responsibility of individuals. It will not be out of place to refer those who would not learn by their own experience or from conditions in their own country, to a press report about China where the co-operative farms are only just in the process of establishment. China has not the resources to produce agricultural machinery in bulk; nor is it in a position to spare resources for its import. The co-operative farms, as and when they come into operation are, therefore, being run with animal power. The report says:

"Another aspect of the same trouble is that when beasts are taken over by a co-operative, many perish from neglect through being left out of doors all night or from sheer lack of food, since it seems to be no body's business to look after them" (Vide "Hindustan Times," dated May 15, 1956).

The Indian Delegation which recently visited China observes thus:—

"On the whole Chinese agriculture is weak in animal husbandry. In the production and development plans of co-operatives more emphasis might be given to this aspect of the rural economy. This might require not only a larger allocation of resources but also, perhaps, certain changes of an organisational character. In the breeding and care of cattle, collective maintenance has a part to play but along with it there might be room also for individual families being enabled to breed and look after cattle as much for their own benefit as for the advantage of the community. Since fodder resources are at the disposal of the co-operative, such schemes of animal husbandry development would require special arrangements for making green and dry fodder available to individual families" (page 121 of the Report).

Not only, the advocates of co-operative farming contend, will it not lead to unemployment but will create employment for those who are unemployed or under-employed today. One is really unable to understand how? Land cannot, by mere fact of being pooled or consolidated into large units, find employment for more persons than it is able to do otherwise.

The Food and Agriculture Minister of the Government of India, while inaugurating a two-day conference of representatives of State co-operative institutes in New Delhi on April 18, 1956, was pleased to observe that the scheme of agricultural producer co-operative societies would not result in a surplus of labour. He said that "the position today was that in addition to a large number of unemployed persons in the agricultural sector there was a good number who were under-employed. The creation of co-operative farms with medium and small-size holdings would provide full employment to many. By the introduction of small-scale industries it would be possible to find employment for others." The Planning Commission's Panel on Land Reforms is also seen to hold much the same view when it says that "the other advantage would be that a considerable amount of industrial work for self-use could be organised very much better in these co-operatives".

If it is the small-scale industries which will have to be established to provide full employment on a co-operative farm, one is intrigued to know why they cannot be established independent of a co-operative farm. Fifty-two per cent of farmers in Japan possessing on the average a holding of 2 acres carry on home and small industries in their spare time, without having first organized themselves in an agricultural producer co-operative.

## CHAPTER XI

### EQUITABLE DISTRIBUTION OF WEALTH

In view of the small agricultural area as compared with the number of those who subsist on agriculture today, and will, of necessity, continue to do so tomorrow, there can be no place for large, privately-owned farms if it is our intention to build up an economy where wealth will be equitably distributed. So, taking away of land from large individual farms in excess of whatever ceiling may be decided upon, and its distribution amongst the landless and the holders of uneconomic farms, is an obvious course dictated by the principle of social justice enshrined in our constitution. The Committee on Tenancy Reform constituted by the Panel on Land Reform appointed by the National Planning Commission has put the case admirably. It says—"There is no doubt that such a solution will be welcomed by the large masses of the landless population; possession of land gives them security; increases their bargaining power and enhances their status as land-holders in the village. Where the landless people belong to the Harijan caste, this is an essential preliminary for the removal of untouchability itself. Existing disparities in ownership of land in agriculture incomes will, to a certain extent, be reduced. This will facilitate cooperation and rural progress and the State will have laid down the fundamental basis for the creation of a socialistic pattern of society"

We have already seen that other things being equal, small holdings produce more per acre than large holdings. Personal cultivation as distinguished from cultivation through hired labourers, will be another factor which will push up production in the case of holdings that will be brought into existence as a result of re-distribution.

There is one substantial argument which is advanced against the proposal to place a ceiling upon the existing land holdings, viz. that in order to be fair we should place a ceiling on non-agricultural incomes as well. Otherwise we will be discriminating against the large owners of rural property and be guilty of a bias in favour of the urban rich. This argument, however, does not take account of the fact that, while man cannot create land, he can create other forms of capital. The large farmer has not added to the nation's wealth in capturing more land which is a gift of Nature, than ought to have fallen to his share, whereas the industrialist or the non-agriculturalist property-owner has, in putting up a factory or a house, created something which did not exist before.

Secondly, it is land that is, in our conditions, a limiting factor while, of the two factors of production with which the non-agriculturist deals, labour is surplus to our needs and capital, though wanting in the measure we need it, is after all not so scarce as land.

The Committee on Tenancy Reform has the following observations to make in this connection—

“Monopoly in land and the ownership of large areas by a small minority of the agricultural classes is an obstacle to economic development. This does not apply with equal force to industrial development where large-scale organisation may lead both to greater economy and efficiency. Besides, redistribution of land is a simple operation as compared to changes in the much more complex organisation of industry and commerce. Historically also, redistribution of land, in a number of countries, preceded economic changes in the industrial sector.”

The governing principle of distribution of land would be that none shall be allowed to possess an area of land which, under our technique of farming, is beyond the capacity of an average peasant to manage and none shall possess less than an area below which, howsoever more labour and capital may be applied, it will not produce more per acre. That is, the upper limit shall be governed by the capacity of one unit of man-power and the lower by the capacity of one unit of land. We have already referred to Chinese agricultural statistics which show that production per man increases up to the density of 4 men per 100 acres or 25 acres per man and production per acre increases upto the place where each farmer has 2.6 acres. We would put the lower limit at 3.125 acres or 5 standard bighas, which may be said to constitute a basic holding—a holding which, though smaller than an economic holding in the sense of being unable to provide a reasonable standard of living to the cultivator, is not inefficient for purposes of agricultural operations. So that it will be in national interest to take away all land from large farms surplus to 25 acres for distribution and so to amend and enact laws relating to transfer and partition of land that all holdings below 3.125 acres today are rendered impartible and no such holding is allowed to come into existence in the future. A basic holding of 3.125 acres will constitute the floor as distinguished from the ceiling which will be put at 25 acres. The Planning commission committee on Tenancy Reform is also of the view that “peasant farming can be stabilized only if provisions are made to ensure that units of management do not decrease below a minimum size.” (vide p.48 of the Report of the committee).

Twenty-five acres will make the proper upper limit even for a mechanised farm: 'according to Mr. Roland Dudley, a pioneer of mechanised farming, there is little gain from fields exceeding 20 acres, and none from those exceeding 27 acres (vide M. R. Masani's Inaugural address to a conference of Indian Society of Agricultural Economics, Karachi, December 27, 1946).

The land held in excess of 25 acres is to be acquired by the state and made available for re-distribution among displaced tenants, landless labourers and uneconomic cultivators.

## CHAPTER XII

### MAKING DEMOCRACY A SUCCESS

We have deliberately chosen a democratic way of life. Inasmuch as we have emerged into a full-fledged democratic State after centuries of colonial and other despotic rule, which has demoralized our people, we have to take special care and special pains to see that the democratic spirit is fostered in our society at every step. All schemes that we frame in the social, economic or administrative sphere have to be tested on the touchstone of democracy, viz., whether or not they will serve to strengthen the democratic tendencies, inculcate democratic modes of behaviour and generate an atmosphere of personal freedom and initiative. Those which do not serve these purposes have to be assiduously eschewed as a matter of national policy. The care and guardianship of this tender plant of democracy becomes all the more incumbent on us in view of the circumstances in which our country finds itself in the Eastern Hemisphere—almost a lone standard-bearer of parliamentary democracy amidst a crowd of nations which either do not know democracy, or have notions on the subject far different from ours, or are just struggling to find their feet consequent on the retreat or impending retreat of Western Colonialism from the region.

It is the individual who forms the base of democracy. It is he who as a voter chooses who will run the village Panchayat, the State Government, or the Union Government for him. He should, therefore, be able to form a judgment or take a decision on his own responsibility, untrammelled by any restrictions or apprehensions. Now, it is axiomatic that a man who is not free in his economic life or who is dependent or leans upon some body else for his bread or has to take orders from others all the twenty-four hours of the day, cannot develop an initiative, will have his personality cramped and, what is the crux of the matter, will not be free to act, much less vote, as he likes. So an economic system in which the individual, whether he works on land or in industry, is not free, will ultimately work out to the detriment of democracy. In that society alone will democracy in the true sense be a success where the individual, the bread-winner, is the master of his tools or means of production, where he does not have to take orders from, or render account to, any body or any group or association of individuals, in fact, any authority outside of himself, but is the sole captain of his fate and free to regulate his conduct as best, or, even as worst as he likes. That is what Mahatma Gandhi taught us: that is the message of the Charkha on which he laid so much stress.

We have now to decide which of the three alternatives set out in the beginning of this brochure, will fulfil our purpose. In our opinion it is the economy of small farms again which happens to be the answer. Not only does it produce more wealth and provide more employment, but also ensures an equitable distribution of land and will also prove the most secure base of democracy. The liberty of the worker—a condition precedent to successful functioning of democracy—varies inversely with the size of the undertaking in or upon which he is employed. An economy of large private farms or capitalist farming envisages a rural scene where the number of persons who will give the orders, viz., the farm-owners or managers, will be very few and the number of those who will carry out these orders, viz., labourers, will be very large. For example, if we divide or distribute the arable land of Uttar Pradesh into farms of, say, 50 acres each, we will be left only with about eight to nine lakh persons or families of land-owners, and the rest, viz., some what less than eighty lakh families of divested peasantry will be added to farm labourers, who already count more than 7.5 lakh of families. In such an economy of large undertakings a few will get the whip-hand, who will develop, because of the nature of their business, an imperious attitude hostile to the air of equality and freedom and who will gradually come to dominate the political life and the administration. While the vast majority, accustomed always to receive and obey orders, though free in name, will not count either in social life or counsels of the State and Union.

Under the Weimer Republic the concentration of large estates in pre-war Eastern Germany, where a group consisting of 3 per cent of the population owned 20 per cent of land and was roughly characterised as Junkers, resulted in a feudal society of poorly-educated, poorly-paid, and ill-housed farm labour population and an educated and powerful land-owning "elite". This group formed the kernal of social and political "reactionary-ism" in Germany. The majority of the junkers supported and encouraged all movements at the overthrow of the Republic. They were consistent and active opponents of democratic Government.

A proposition of an economy based on large, private farms has, therefore, only to be stated in order to be rejected, and we need not tarry long over it.

Now, as regards the co-operative farm which will be a big economic unit with hundreds, sometimes thousands of workers working under one direction or management: will such an organisation ensure freedom

to the individual or full expression of his personality? Will a society based on large mechanised undertakings produce self-regulated individuals who are the first postulate of democracy? No: it cannot. Any large undertaking in which a large number of persons form one unit must necessarily be regulated by the State and can efficiently be run only on the basis of planned management. There is, therefore, an inherent tendency for more and more bureaucratic interference and control. Whether we take the case of the Russian Kolhoz or the Chinese producer co-operative, the degree of control, apart from the manner in which it is exercised, which the State has necessarily to apply to keep these organisations functioning, shows unmistakably the futility of imitating them in a democratic set-up.

In the USSR the State, through the State Planning Commission assisted by the Rayon and Provincial Commissions, not only lays down a production plan for each farm containing directions about the acreage to be put under different crops, but also decides how and when labour shall be applied, the agronomic measures the Kolhoz must apply, the amount of gross revenue that should be saved, that is, reinvested in means of production and so on. The only freedom that a Kolhoz enjoys in this regard is to decide matters of purely domestic nature such as proportion of the surplus produce to be sold, the proportion to be distributed among its members and the percentage of the net revenue to be set aside for communal purposes, such as club-rooms and creches.

The measure of the external control to which the Kolhozy are subject in their day-to-day working can be realized from the fact that, apart from the internal accounting a Kolhoz has to render, at the very least, eleven returns at intervals ranging from days to six months to the Commissariat of Agriculture, showing the progress of field work, the state of crops, sowing and harvesting operations, etc.

In addition to the production plan and all it implies, the State lays down a rigid price policy for the greater part of the marketable produce of the farm. Every Kolhoz is compelled to deliver to the State its quotas or fixed quantities of grain and other crops and meat per unit of cultivated land to the amount laid down for each region, for which it receives payment at the State purchasing price, nominally based on the cost of production. The prices paid are, however, extremely low in comparison with prices of manufactured goods bought by the peasant or of the open market prices for the same commodities. These compulsory deliveries are generally and appropriately referred to as a tax in

kind as the State obtains a very large part of its budget revenue by the sale at greatly inflated prices to the consuming population of the produce it has bought cheaply from the farms.

The same remarks apply *mutatis mutandis* to the Chinese producer co-operative. It will be sufficient to quote from the Report of the Indian Delegation to China:—

“The co-operative must work to plan. It should draw up plans both for the production and sale of products in the light of its own conditions and gear these plans to the production and purchase plans of the State” (Article 4 of the Model Regulations for Elementary Agricultural Co-operatives quoted at page 113).

“To ensure fulfilment of the annual production plan, the co-operative shall draw up schemes for the progress of work in the various farming seasons and stages of work, set definite production tasks and definite dates for their completion” (Article 29 of the Model Regulations quoted at pages 114-115).

“The agricultural tax in China accounts for about 10 per cent of the total revenue. In terms of money its yield was 2.75 billion yuans (or Rs.550 crores) in 1953; 3.3 billion yuans (or Rs.660 crores) in 1954 and 3.05 billion yuans (or Rs.610 crores) in 1955, and receipts under this head in the budget for 1956 were placed at 2.8 billion yuans (or Rs. 560 crores) ..... in 1951-52, during the course of land reform, the new Government took steps to fix standard annual yields per mou (that is, 0.16 acre), on the assumption of average management and normal weather conditions. This assessment took account of the quality of land and also whether one or more crops were grown during the year. The standard yields fixed five years ago are still in force. The actual tax to be collected is calculated on the basis of these yields with reference to the area cultivated” (page 138).

“Besides the agricultural tax, there is a local surcharge known as ‘additional tax’ which is levied mainly for the benefit of the hsiang and the county peoples’ councils. The rate of

surcharge was 15 percent of the tax in 1959, 12 per cent between 1953 and 1955 and 22 per cent in 1956" (Pages 138-139).

It is out of the money extracted from the peasantry or the land-worker by an unrelenting dictatorship that heavy industries were built up in the USSR and are proposed to be built up in China. As the Report observes: "It should be pointed out here that the main emphasis in Chinese planning is not on agriculture but on industries, especially heavy industries" (Page 40 of the Report).

As organizations both the Kolhoz and the Chinese producer co-operative are political subordinates to the Communist Party; they have no independent thought or say of their own. Their primary organisational role is political propagation, not agricultural production. The collective farm by whatever name it may be designated in the two countries was adopted because political instruction can be more effectively conducted among an associated group than separate units. Article 8 of the Model Regulations quoted in the Report of the Indian Delegation at page 120 proceeds thus :—

"The co-operative should take any measures which will bring about a steady rise in the level of political understanding of members; it should give them regular education in socialism and patriotism, and see to it that every member abides by the laws of the country. It should be ready to respond to the call of the Communist Party and the People's Government, and lead its members in the advance to socialism"

The Report goes on to say—

"Yet, at this stage, it is difficult to escape the conclusion that local co-operatives depend heavily on direction and stimulus provided from county and district branches of the Communist Party and from cadres sent down to work in the villages by the Peoples' Councils at higher levels" (Page 120).

It should be clear then that the Chinese producer co-operative has little liberty as an organisation. The liberty which its members enjoy as individuals is even less. We shall quote again from the Report of the Indian Delegation—

"Each production brigade consists of a number of working teams ..... The management committee appoints the leaders of production brigades and of working teams ..... A supervisory committee is also elected by the general meeting or by delegates elected by a general meeting, its functions being to see that the chairman and members of the management committee abide by the regulations of the co-operative and the resolutions of the general meeting, that the accounts of the co-operative are in order, and that there is no corruption, theft, sabotage, waste, or damage to the co-operative's property. The chairman of a co-operative is a person with much power and responsibility as he 'represents the co-operative in its dealings with other parties' ..... there are considerable reserve powers, especially with the leaders of production brigades and with members of the management committee, through which failures in team work, lack of application and indiscipline can be dealt with ..... To put the piece-work system into practice each co-operative has to decide upon suitable forms for various jobs and to fix rates of payment ..... The number of work-days a member earns for fulfilling the norm for each job is decided on the basis of the skill and intensity of labour involved and the importance of the job to the production of the co-operative as a whole" (Pages 115, 116 and 117)

Translated into capitalistic terminology the farmers become wage earners with the same widely varying wage scales as the factory workers and with the same subordination. The Delegation sums up by saying—

"It is not improbable that in many co-operatives there exist doubts and criticisms to which there may or may not be satisfactory answers. It is not easy for a visiting delegation to grasp such elements in a new situation in which large numbers of men and women are thrown together rather suddenly in a complex set of social, economic and organisational relationships such as a large agricultural co-operative represents."

In his voluminous study of Soviet agriculture Naum Jasny comes to the conclusion that the contrast between theory and practice is most

flagrant. Instead of voluntary participation there is coercion; instead of democratic decisions by the General Assembly there is dictatorship of officials who themselves are only small cogs in a big administrative machine. There is a tendency to shirk duties, to defraud the group for the sake of personal gain, and instead of a spirit of partnership the actual state of affairs makes the "analogy to serfdom" increasingly justified. Jasny concludes: "the misnamed Kolhoz is the nut-shell of a co-operative without the nut." The same is true of the Chinese venture in the field of co-operative farming. The truth is that economic motives are only secondary. All the motive power comes from the social theory that the peasant is a capitalist and must, therefore, be reduced to a proletarian, for otherwise he will remain a potential source of internal opposition to the Communist regime. To quote again from the report of the Indian Delegation: "No less important than these technical and economic considerations was the view held by the leaders of the Communist Party that a socialist society could not be built up unless co-operative farming took the place of peasant-proprietorship and step by step all vestiges of individual ownership in land were discarded. As they put it, 'the nation could not stand with one foot on socialistic industry and the other on a peasant economy.' Or, in the words of Chairman Mao Tse-Tung, 'if positions in the countryside are not held by socialism, capitalism will assuredly occupy them.' ..... It was for these various reasons that the Central Committee of the Communist Party declared a year ago that—

'The aim of the co-operative movement is to lead about 110 million peasant households from individual to collective farming and then go on to bring about technical reform in agriculture; it is to eliminate the last vestiges of capitalist exploitation in the rural areas and establish socialism. The building up of socialism is the cause of hundreds of millions of people" (Page 107)

"The Communist Party and its cadres at all levels have played a fundamental role in the organisation of producers' co-operatives as they did earlier in land reforms. They provide the core of the organised effort in every local community and in the future also the success or failure of co-operatives will turn largely on their performance, behaviour and leadership" (Page 190)

"But behind this organisation of the Chinese farmers into co-operatives and the mobilisation of the resources of the entire nation, there

is a force which should not be lost sight of. It is the Communist Party of China which has 10·7 million well-organised, disciplined and hard-working members. It is the members of the Party working in the remotest villages who have brought about a fundamental change in the rural structure of China within a short period of seven years. It is also these party members who provide the necessary drive for increasing production and ensuring that the targets are fulfilled. There are writers on China who have spoken of the ruthlessness which might have marked the early phases of the new regime as a factor in the subsequent transformation from individual to co-operative cultivation. This may or may not be so, but we cannot comment on the suggestion from our own direct observations" (pages 191-192)

It is abundantly clear from these observations that the motive power for the Chinese co-operatives comes not from the Chinese farmer but from the active members of the Communist Party. Comparing the conditions with India the delegation observes :—

"In Indian villages in areas where development programmes are undertaken and the right kind of leadership is forthcoming, there is, perhaps, more voluntary effort, local initiative and general awareness than we were able to observe in China" (Page 192)

"There may be a view that in China the rural leaders lack flexibility and depend more on directions from the party as well as from the Government than on their own initiative or on the support of the local people. If this occurred, they would not compare favourably with rural leaders in countries with a long history of economic development on democratic lines, and in the long run this may prove to be a serious handicap and may limit the degree of technical as well as social progress which is achieved by the rural population" (Page 191).

No fundamental reform can be divorced from ideological considerations. The ideology which has been responsible for the phenomenal growth of what is called co-operative farming in China has been deliberately rejected by us. Can we transplant a seedling which has been sown, tended and nourished in a communist climate into our climate of fundamental freedoms? As observed by our Delegation on page 43 of its report: "The system of communism in China, however, it may have been adapted to the needs and conditions of Chinese society, does not of course provide for freedoms such as those of information, expression and association in the manner familiar to us in India. In this sense,

it shares inevitably several typical political features with communist countries in the west." In the concluding sentence of its report the Delegation rightly cautions us thus: "We must emphasize, however, that any measures that we may adopt for economic development or technical progress should be fully in accord with our democratic institutions." (Page 199).

A society based exclusively or overwhelmingly on big economic units, whether in the field of agriculture or of manufacturing industry, must inevitably lead to concentration of power in the hands of a few. "It leads," said Acharya Kriplani, "to bureaucratic and dictatorial exercise of power. The rulers in that case not only regulate the political but also the economic life of the people. If political power has a tendency to corrupt the holders of power, this tendency is doubly increased by the combination of political and economic power in the same hands. Capitalism killed democracy because the capitalist class wielded, directly or indirectly, political power. Communism puts in the hands of the political dictator and bureaucrat the entire control of economic power. Herein lies as great a danger to democracy as under capitalism.

"Therefore, if democracy is to survive, it must discover a means of avoiding concentration of economic power in the hands of the ruler or rulers, however selected or elected. Even a political democracy can be a dictatorship if there are no spheres of free activity left to the individual" (Presidential Address delivered by Acharya J. B. Kriplani at the 54th Session of the Indian National Congress on November 23, 1946. in Meerut).

The plant of freedom cannot thrive on the soil of collectivized farm which is a large joint under-taking, nor was it intended to thrive by its founders. When we find in India, therefore, persons who profess belief in democracy, yet advocate establishment of huge, jointly-operated units of production as the remedy of our rural problems one can only sympathize with them and wish they knew the countryside and the object of their armchair solicitude before offering solutions. No lover of the peasantry and the country would be enthused by the prospect when our countryside will be turned into huge barracks or gigantic agricultural factories. Such an economy would enslave the masses and take away their freedom which is material to all definitions of happiness. There is no advantage in a powerful and prosperous State if it is to be achieved at the expense of human freedom and happiness.

In a speech in New Delhi in the early half of 1955 the Prime Minister said that "India is trying to achieve economic prosperity without abandoning democratic institutions and would not sacrifice democratic institutions at the altar of economic progress." He went on to add that "In the long run, economic prosperity based on a denial of human freedom and dignity could not carry a country far" and that progress had been achieved in Russia "at the cost of the freedom of the individual."

"I think that in the long run", observed Sri Nehru, "the democratic and peaceful method is more successful even from the point of view of time and much more so from the point of view of results."

Whatever emphasis may be placed upon the differences between a cooperative farm and a collective farm, so far as internal working is concerned there is and there can be no difference. Land, labour and capital are pooled in both and, the size being large, they cannot be managed without a plan and without orders issuing from some central unified authority. In both, the peasants will have to be assigned to brigades and the latter divided into teams, individual work evaluated, a complex accounting system adopted, a code of punishments provided, and so on. To the extent—and this extent will necessarily be large—the peasant, the member of the farm, is not free to obey his own desires, his liberty is curtailed; he is not independent. And to that extent democracy will suffer in the land.

It is true that some control of the individual is inherent in all organisations, and that organisations—social, economic and political—are essential to all civilised existence. It is, therefore, on the degree of control that the question turns. That society is best where control over the individual is the least. Such is a society of small economy, of small autonomous organisations usually consisting of a family, both in the sphere of agriculture and, also as far as we can help it, in the sphere of industry. Large organisations, because of its nature, are inevitable in some branches of manufacturing; they are not at all necessary in the sphere of agriculture.

A system of agriculture based on small enterprise, where the worker himself is the owner of the land under his plough, will foster democracy. For, it creates a population of independent outlook and action in the social and political fields. It is true that the peasants have to earn their living the hard way; only a few, if any, are able to accumulate a surplus.

But, at the same time, they are not devoid of possessions altogether. They may be conservative, but will not be reactionary: they may be in favour of a private economy, but are not exploiters either. The peasant is an incorrigible individualist: for, his avocation, season in and season out, can be carried on with a pair of bullocks in the solitude of Nature without the necessity of having to give orders to, or, take orders from anybody. That is why the peasant class everywhere is the only class which is really democratic without mental reservations. The system of family-size farms ensures stability because the operator has a stake in his farm and would lose by instability.

Peasant farming also makes for a happy community and a satisfied individual. Security to the peasant owner is a matter of course. "To own the land and to be free to farm it in the traditional peasant way is to him nothing less than the equivalent of that 'social security' which has become the aspiration of industrial masses even in the advanced countries of the West. The lifeline which in the West the State has to throw to the worker whenever he is in difficult circumstances, through the complex of insurances against unemployment, against sickness and want, for old age and so on, the peasant has always found in his traditional economy. As Miriam Beard says in her 'History of the Business Man', discussing his part through many centuries, 'men suffered on the land but survived; while in the cities they flourished—and faded.' The peasant's way to security may not provide him with such great material benefits as those now given in the West by the State, but it is a security which he can achieve with his own hands and which leaves him free to stand on his own feet" (David Mitrany, P.130).

Inasmuch as the character of political institutions was determined by the fundamentals respecting property, Jefferson, one of the architects of American democracy, firmly believed that a wide dispersion of private property—a wide diffusion of rights in land which make for individual freedom and creative individualism and an opportunity to acquire such rights—was essential to the establishment of democracy and the safest assurance that it would endure. To him "small holders were the most precious part of the State."

"Farm ownership and the small farm", says F.C. Howe, "are the economic bases of Danish life. To these economic conditions other things are traceable. The kind of land tenure that prevails is the mould of the civilization of a State. This is true of nearly all countries. It is hardly a coincidence that wherever we find hereditary landlordism, as

in Great Britain and Prussia, there we have political reaction. There is, so far as I know, no exception to this rule. It was this that explained old Russia. It was land monopoly that lay back of the Irish question and the long-continued poverty of the Irish people. On the other hand, wherever we find the people owning their own homes and cultivating their own land, there we find an entirely different spirit and a different political system. With ownership we find democracy, responsible government, and with them the hope, ambition and freedom that prevails in France, Holland, Switzerland and the Scandinavian countries. For these are the countries where the people, rather than the old feudal aristocracy, own the land" (Vide "Denmark: A Co-operative Commonwealth", 1922, p. 71).

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## CHAPTER XIII

### IMPRACTICABILITY OF LARGE SCALE FARMING

The number of persons holding land in cultivatory possession in India is vast: it was 19,89,86,000 or 56% of the entire population in 1951. The corresponding figures for U. P. stood at 4,26,07,000 and 67.5 respectively. In the context of these figures a pertinent question is whether large scale farming as a method for general adoption in this country is really practicable.

Quite apart from the merits of the proposal, it is simply not possible for any democratic Government to divest these people of their lands with a view to set up an economy of large farms. The psychology of the peasant will have to be considered. Habits centuries old are not changed in a day, and habits rooted in the soil are with difficulty changed at all. A large collective undertaking may be well-adapted to the needs and mentality of the agricultural or industrial labourer, but not one tenant in a hundred or one owner in a thousand wishes to be turned into a collectivist as long as he can make a living, however modest, on his farm: he is too tenacious of his independence and, if an owner, too attached to his land and too jealous of his social prestige. In membership of a co-operative or collective farm he sees a loss of all the three—his land, independence and prestige.

Everywhere the peasant is a firm believer in property striving for independence. Hence a collective economy will meet with his emotional resistance from the start. Ultimately it is not a question of economic efficiency or of form of organisation, but whether individualism or collectivism should prevail. Peasantry represents not only a certain form of economy but also a certain way of life. Within the peasantry those characters, traits and moral forces are most pronounced which resist the tendency of collectivism and of being levelled down into a uniform mass. On the other hand, the co-operative idea of self-help by voluntary association which does not efface economic independence appeals to peasants. It is significant that communists try to overcome the individualistic thinking of peasants by using co-operative slogans.

Any Government with democratic pretensions, run by any party whatsoever, which attempts to establish an economy of large farms will either founder in the attempt never to recover, or, will turn dictatorial in the process. Constituting a majority of the total electoral strength

as they do, the peasants cannot, even if all other sections of population combine against them, be coerced into accepting a course against their will. That is why in every instance the Marxist agrarian programme has had to be applied by force and to rely on force for its survival. The Socialists who wanted to remain democrats had in every instance to abandon the programme.

The advocates of collectivization commit the mistake of appraising India in terms of the psychology and the living conditions of Old Russia and do not make an allowance for "differences in political experience social background and emotional response". Possession of land has been in some sense joint and communal throughout Russian history. The Mir or the Commune, in which the village communities were organised, was a distinctive and peculiar attribute of traditional Russian civilisation. The characteristics of communal land-holding were:—

- (1) Distribution in strips,
- (2) Compulsory adherence by all members of the Commune to a common rotation of crops,
- (3) Temporary occupation by the individual of his allotment, and
- (4) Periodical alterations in the size of the allotments.

The coming of the kolhoz is, therefore, a purely Russian event that must be seen, understood and evaluated as such. "The kolhoz is the collectivised farm emerging out of a primitive peasant economy", says G. D. Cole, "which had neither wholly lost nor forgotten the collective characteristics of serfdom and feudalism. It could not be developed out of a system of middle-sized tenant farms, such as existed in Great Britain, or out of a developed and civilized peasant proprietorship like that of France, or again out of the homestead farming characteristic of the United States and Canada" (Vide "Practical Economics", 1937, pp. 49-50). Nor can it emerge, in our opinion, in India where individual possession, even, in large parts, individual ownership, has a very long history and is deeply rooted in the consciousness of the peasantry.

The idea of peasant ownership came to the fore in Russia only in the latter half of the last century. It was after a long agitation beginning with the Emancipation Act of 1861 that on November 22, 1906, an ukase was promulgated depriving the Mir of its authority and giving the peasants a right of separation from the Commune, which laid the

foundations of a class of true peasant proprietors. In 1928, therefore, when the Government of the USSR embarked on compulsory collectivisation, peasants whose ownership of land had some history behind it, were a small fraction of the entire peasantry, viz. 10.7 percent; the vast majority having come into ownership (a fact never openly recognized by the Communist Government) only in 1917 when the big landlords, the Church and the crown were liquidated. Nevertheless, collectivisation was bitterly resented by the peasants as a class even in Russia who had hoped to enjoy the land in individual ownership as a result of the Revolution.

Some of the believers in collectivization may, perhaps, like to argue that the consummation can be brought about by persuasion, that, provided the necessary propaganda, education and demonstration are forthcoming, the peasants can be converted into a voluntary acceptance of collective farming. So far, however, the experience of the USSR, Yugoslavia and other eastern European countries tells a different tale.

While, on the one hand, propaganda as a result of a resolution of the Fifteenth Party Congress held in December, 1927; which decided upon collectivisation, was unleashed by the Soviet Government in 1928 for popularising the kolhozy and a few collective farms were set up to serve as demonstration, the Government introduced, on the other, a so-called contract system under which an independent peasant was bound to deliver to Government grain-collecting organisations the whole of his surplus harvest at the price fixed by the Government. It was the Government collecting agency itself which decided what quantity of grain was surplus to the needs of a particular peasant. In case a peasant or kulak failed to deliver his quota, his grain was confiscated under Art. 107 of the Criminal Code and 25% of it made over to the poor peasants of the village. All these measures and other restrictions, however, failed to attract the peasant into the kolhoz: he remained unconvinced of its superiority, with the result that during two years from the spring of 1927 to the spring of 1929 the percentage of peasant house-steads collectivized rose from 0.8 to 3.9 only. In January, 1930, therefore, the Central Committee of the communist Party took a most decisive turn in policy: it resolved to eliminate the kulaks as a class by wearing down their resistance in open battle and depriving them of the productive sources of their existence and development (the free use of land, viz. the means of production, the renting of land, the right to hire labour, etc.). Instructions were issued that by coming spring 30 million hectares of land should be brought under

collectivisation. This was about 25 per cent of the total area under crops in 1929. Peasants labelled rich were *ipso facto* condemned to liquidation, and taxes far heavier in proportion to those borne by the other groups, middle and poor, were imposed on them; if they paid the first time, they were reassessed at twice or three times the original sum. Sooner or later the peasant failed to pay his taxes, thereupon his property was handed over to the nearest kolhozy. Those who showed the least signs of resistance or gave cause for doubt or offence to the local party bosses, were liquidated or silenced by measures which are now part of history.

Yugo-slavia was the second country where an attempt at coaxing the peasantry into collectivization has been made, but, it must be confessed, with the same disappointing results as far as the reactions of the peasantry are concerned. A movement to wean the peasants into collective farms was set afoot with open and covert official pressure, soon after the country had been liberated from the yoke of the Nazis in 1945. As against 3500 collective farming societies started in 1949, in 1950 only 353 societies came into existence. With the relaxing of official pressure the movement evidently lost its momentum. In the summer of 1951 the total number stood at 7,000 comprising 22% of Yugo-slovia's arable land and 4,20,000 house-holds. Signs of discontent began to grow in the older societies. There were many applications to withdraw, over 2,500 in Macedonia and more than 3,000 in Croatia. The Communist Government, however, led by Marshal Tito decided not to force the peasants into collectivisation at the point of the bayonet, and it is this deviation from the orthodox Communist policy that formed one of the major causes which led to the breach of diplomatic relations between the USSR and Yugoslavia.

The peasantry of Eastern Germany, Poland, Czechoslovakia and Hungary, too, have not taken kindly to joint or collective farming, efforts of the local Communist governments and the USSR, which holds these countries in its grip, notwithstanding. According to press reports Gomulka, the new Communist leader of Poland, in his first policy statement, said that "In agriculture it is only the private sector which has prospered and that it was a mistake to collectivize the Kurlak". Under the terms of a new law now being prepared by the Agriculture Ministry Polish farmers will become owners of their lands once again. Students of present-day affairs are all so aware of these developments that we need not tarry over it.

It is claimed that the agricultural producer co-operatives have been a success in China. If so, why is it necessary to convert and consolidate them into 'advanced' or collective type of Russia? The professed goal of the Chinese Government, true to their communist philosophy, is collectivisation; and this can only mean that the Chinese Government themselves are not satisfied with the intermediate stage of co-operatives. Almost the same words, the same reasoning and the same technique which the Bolsheviks used in the USSR are being employed by their pupils in China. Chinese peasants, however, being what peasants are all the world over, these co-operatives, notwithstanding all the propaganda, could not have come into existence so suddenly as if by a wand of magic and are, without question, a result of coercion. With absolute political and military power resting in the hands of the Government, from which there is no escape and no appeal, the Chinese peasants just as their forbears of Russia, have no choice, but voluntarily—voluntarily in the sense of Communist dictionary—to opt or vote for the collective farm.

It was the utter poverty of the Chinese peasants which was exploited by the Chinese Government to fulfil its ideology. Says the Indian Delegation to China at page 103 of its report: "...land reform in China meant an extraordinarily wide distribution of ownership in land. Altogether about 118 million acres of land were distributed among 300 million peasants, men and women, an average of one-third of an acre per head. Besides land, houses belonging to landlords containing about 38 million rooms, about 30 million draught animals, 39 million agricultural implements and about 5 million tons of foodstuffs were confiscated from landlords and redistributed. Many former landlords were allotted land on the same basis as tenants and labourers." Again on page 109: "Agricultural co-operation followed naturally from land reform. Arrangements for State purchase of food-grains and other farm products and the organisation of credit co-operative closely linked with the People's Bank were important supporting developments. Together, they helped eliminate the rural trader, the urban merchant and the landlord, so that the ground was fully prepared for agricultural co-operatives."

It was against this background—a background created by giving everyone one-third of an acre, destroying the freedom of sale and exchange, and displaying unrelenting ruthlessness—that the Chinese peasant was welded into what is called the voluntary Chinese Producer Co-operative.

Nor can these co-operatives yet be called a success in the economic sense. Sufficient time has not yet elapsed, nor are any reliable statistics available, to show that the process of pooling of land into co-operatives has in any way contributed to increase agricultural production. The Indian Delegation to China clearly acknowledges that pre-war yields have not yet been attained, China will, indeed, be fortunate if she can regain the pre-war yields and keep them up.

It was pure propaganda inspired by political considerations that was let loose on the world to the effect that as soon as China was taken over by Communism, food production went up by leaps and bounds and the offer, again inspired by political considerations, that China made to India of 50,000 tons of rice or so was cited as proof of the same. But what are the facts ?

Mr. G. F. Alexandrov, leader of the Russian delegation to the 41st session of the Indian Science Congress, told pressmen in Hyderabad on January 6, 1954—

“In 1950, Russia had begun implementing a five-year plan, which would be completed this year. The main feature of the plan was that side by side with the development of heavy industry, light industries and agriculture would also be developed. Russia was producing plenty of foodstuffs and was exporting a considerable quantity to China, France, Italy and other European countries.”

It spite of the much boosted rise in agricultural production in China, the prices of essential commodities continue to rule very high. Our Delegation observes: “But we noted that the cost of living in China was substantially higher than in India. For instance, at the time of our visit, the retail price of ordinary rice was -/9/3 per seer in Shanghai, of wheat -/9/9 per seer, vegetable oil for cooking Rs.2/2/- per seer, potatoes -/3/6/ per seer, peas -/3/6/ per seer, mutton Rs.2/3/- per seer, sugar Rs.2/- per seer, cotton shirting Rs.4/- per yard, cotton suiting Rs.8/- to Rs.10/- per yard, woollen suiting Rs.45 to Rs.50 per yard and shoes Rs.30 to Rs.40 per pair” (Page 41 of the Report).

China, with such dense population, will suffer far more grievously owing to this venture of their Government: the USSR had a vast area of culturable land, compared to her population, on which men and machinery could be employed.

The kolhoz or collective farm both in the country of its origin, the Soviet Union, and in the country of its adoption, China, is regarded as the final, logical form of agrarian organisation, and co-operative farming only an intermediate stage. It will be a strange commentary on our wisdom that just when reports from the Soviet Union show that the kolhoz has not given the results expected of it by its founders and the Communists are in desperate search of remedies and palliatives, our leadership is enthusiastically recommending the preliminary form, the co-operative farm, for adoption in India. There can be no manner of doubt that in looking towards the USSR or the Peoples' Republic of China for a tenure pattern we are looking in the wrong direction.

In this connection we have further to remember that educated persons living in the towns have not been able to make a success even of the Co-operative Stores, or Consumers' Societies which were concerned merely with marketing. Nor are credit societies in the country-side yet a success inspite of so much time and effort that has gone into their Organisation. Now much more difficult it should be to organise agricultural production, which is such a complex task, on a co-operative basis in a community of illiterate and semi-illiterate peasantry, can, therefore, well be imagined. In fact, co-operative farming in the true sense of being voluntary, has not been a success anywhere in the world (except in Israel)—even where the farmers are cent per cent literate.

The initial success of co-operative farming in Israel is due to the peculiar situation which arose in connection with the requirements of Zionist resettlement. The abortive Russian revolution of 1905 brought to Palestine (then a part of the Turkish Empire) a number of young Russian Jews of some education, no agricultural or industrial experience, no private means, but of strong socialist convictions. Fundamental to these convictions was a belief in the immorality of employing labour. The exact form of the first settlements, and, in particular, the completely Communist society which they evolved, thus owed something to the theories which the pioneers had brought with them to Palestine and something to their necessities—lack of means for individual settlement, lack of experience, and the need for mutual protection against a hostile Arab world. Something also may be attributed to their urban and intellectual background, which gave them interests and aspirations unlike those of the typical peasant. It should be remembered, too, that a great majority were, at that time, unattached youngmen and it was natural that their life should be modelled on the

camp rather than the home. These settlements owe greatly also to the technical and other resource that the world Jewry placed at the disposal of the settlers. These conditions cannot be repeated to order in India, or for the matter of that, in any other country.

Even so the number of these settlements is not large. Only half a dozen successful collective settlements were founded under Turkish rule, though a few more, which failed after a struggle, were later refounded. Under the British mandate their number increased fairly rapidly. A score or more dating from the twenties and the numbers increasing steadily through the 'thirties' and 'forties' till by 1950 there were in all 213 *kuvtza* and *Kibbutz*, viz. 29,000 working members and approximately 400,000 acres of cultivated land.

Problems have now begun to arise and multiply. The internal problems such as an increasing demand for personal comfort, lack of participation in the General Assembly, and a certain sense of frustration, particularly on the part of the women, are due partly to the social and economic solidification and partly to the growth in size of the settlements. From the establishment of the State of Israel and the requirements of unrestricted immigration stem such problems as loss of the most active members, tendency on the part of the state to interfere in the internal affairs of the settlements and disinclination on the part of the new immigrants to join the ranks of the *kuvtza*.

Experience should tell us, therefore, that the peasants will never be persuaded to give up their independent way of living and will always prefer retaining their own individualities and prospects of bettering themselves by their own efforts to sinking or merging their identities into a collective enterprise, or, for the matter of that, into a co-operative enterprise. The only merit of the latter as compared with the former type, which lies in the fact that members remain owners of the land they contribute, proves its undoing. Members are, and ought to be, entitled to resign and whether they resign, or, are expelled, free to withdraw their land from the pool. That being so, occasions in the varied tasks of cultivation and in an organisation where a large number of persons work together, when they will fall out, will be frequent. The area of the farm will, therefore, soon dwindle. If, on the other hand, the would-be members are told at the outset that they will not be allowed to take back their lands in any eventuality, they will not join at all.

The kind of co-operative farming that is advocated by our

Planning Commission and others in the country is, therefore, seen to suffer from the drawbacks, rather than benefit from the saving features, of both the systems, viz., compulsion that is used under Communism and incentive for personal profit that is inherent in private enterprise. Such farms will fail as soon as they are set up, and we will have either to retreat to individualist farming, or advance like the Chinese, to the 'advanced' agricultural producer co-operative, which is a synonym for the Russian Collective Farm.

The reaction of the peasant to joining a co-operative or collective farm where all the three factors of production, viz., land, labour and capital, will be pooled, is understandable. Human nature being what it is, even brothers born of the same mother usually separate from one another after the head of the family, the father, has been removed by death or other cause. In the circumstances it is utopian to expect that an average house-holder will, all of a sudden, identify his interest with the interests of those hundreds of persons in the village or neighbourhood who were total strangers to his life hitherto. Were a man to reach these heights and to come to see his own good in the good of every other human being, he will cease to be a house-holder that very day: the ties of family, language, religion and country would no longer have any meaning for him. In such ideal conditions planning will not be necessary, economic laws will become infructuous and, indeed, even Government will itself be a costly luxury. The mother is able to nurse and nourish her child because she is selfish, because in the child she sees her own image. Did every other child in the village, or in this wide, wide world occupy the same position in her eyes as her own, she might as well turn a Sanyasini. In our enthusiasm for a millenium right now in our own lives, we must not forget that man is not entirely a rational being. He is governed more by heart than by mind, and heart has not yet made (whether it ever will make, being doubtful) the same advance as mind or technology which has narrowed down physical space and made world a smaller place than it was in the days of our forefathers. Scientific progress or progres in control of the outer world has not resulted in greater control of the inner world of the self, without which a large joint economic undertaking cannot be run smoothly or successfully,

Another question that arises in connection with co-operative farming is—whether we have the necessary human material. In-as-much as reduction in agriculture does not lend itself to specialization by tasks and standardization by products as it does in

manufacturing, even a layman can see that a large-scale organization will be a much more complex task in farming than in industry. And if this large-scale organization is to be organized on the basis of voluntary co-operation it will create problems that will demand leadership and character of the highest order. The organizers will be faced with several weighty problems, such as relation to the Government, selection of members, relations of member *inter se*, supply of subsidy in terms of finances, equipment, expert advice, and, most of all, a rather complicated and cumbersome method of accounting. Will such an enlightened leadership be forthcoming in our country-side? It is obvious that a co-operative farm would be too big for the ordinary peasant to control. We will have to draw upon the towns, which will rule the countryside. It will, as in the case of collective farming, mean a rule by 'managers', and result in a rise in the cost of production without in anyway contributing towards an increase in output.

Lastly, there is a very important consideration that stands in the way of mechanization and, consequently, of joint farming in India. We do not produce petrol in the quantities that the USA and the USSR do. We have to import it even for our military requirements. Nor can we cover our sky with a net-work of electric wires which will supply the motive-power to the tractors, combines and threshers all over the country-side. We will, therefore, have to depend on a foreign country to keep the machines going so that our teeming millions may have food. It will be nothing short of lunacy to plan an economy which necessitates such a course. The Nazi hordes in the last Great War had rushed towards the the Caucassus not without reason : they wanted to capture the oil-wells so that by cutting the vital artery of Russian economy they could the more easily and the sooner starve their enemy into surrender.

## CHAPTER XIV

### SOLUTIONS

Solution to the problem both of the uneconomic holdings, or the too small size of the farm and of the landless labour in rural areas, in fact, of the entire problem of our economic backwardness can possibly be sought in five directions, namely, reclamation of culturable waste and its colonizations; secondly, breaking up of large farms that there may be and distribution of the surplus land; thirdly, development of non-agricultural resources and pursuits which will serve as subsidiary sources of income to the small peasant and also to which uneconomic holders of land and landless people may be transferred; fourthly, fuller utilisation or more intensive cultivation of lands already under the plough (along with the conservation of our land resources), and, lastly, some method of population control.

Colonization seems scarcely a solution, since land for such intensive colonisation as would be needed are limited. The total geographical area of India is 811 million acres. Land utilisation statistics are available for 718 million acres only which are as follows :—

**TABLE XXIV**

(1) Forests	...	...	...	115.6 million acres
(2) Not available for cultivation	...	...	...	120.3 „ „
(3) Permanent pastures and other grazing lands	...	...	...	21.0 „ „
(4) Culturable waste	...	...	...	58.2 „ „
(5) Groves and miscellaneous tree crops	...	...	...	32.7 „ „
(6) Fallows	...	...	...	68.1 „ „
(7) Net area sown	...	...	...	302.5 „ „
Total	...	...	...	718.4 „ „

Out of 58 million acres of culturable waste in the country, only a small part, say, 10 million acres, can lend itself to cultivation in the near future. In spite of the pressure of population relatively small extension of cultivation to waste lands has taken place during the last 40 years. This is partly due to the fact that such lands are inferior

in quality and otherwise unsuitable, but, perhaps, more due to the fact that the exploitation of such waste lands has not been within the resources of the ordinary cultivator. Reclamation of any considerable part of these areas which are relatively inaccessible at present will be a very difficult and time-consuming process even for the State in as much as it involves large scale tree or bush-clearance, road-making, anti-malarial operations, water-supply, house-building etc. Considerations of soil conservation will also have to be borne in mind before large-scale tree-clearance is undertaken.

### Redistribution of Land

As regards the second solution, viz., redistribution of land in excess of a certain area that may be reserved to a large owner, it is not a going to yield substantial results in all parts of the Union; in some it may not yield results at all worth the name. A ceiling of maximum limit has been placed upon the agricultural lands, which the intermediaries were entitled to retain after abolition in the following States, viz.,

TABLE XXV

West Bengal	... 25 acres
Assam	... 133.3 acres for proprietors and 50 acres for tenure-holders (inferior proprietors)
Hyderabad	... In respect of lands held by inamdars (grantees) at 4.5 family holdings (a family holding varying according to the class of the soil from 4 acres of double-crop irrigated land to 60 acres of <i>chatka</i> soil).
Ajmer	... 50 standard acres.

A ceiling has been applied in Jammu and Kashmir also.

A census of Land Holdings and Cultivation was recently held in most of the States under the advice of the Planning Commission. The census relates to agricultural lands comprised in a holding which consists of cultivable area including groves and pastures. All unoccupied area such as forest lands and other uncultivable lands have been excluded. Lands held in urban areas have also been excluded.

TABLE XXVI

(AREA IN LAKH ACRES)

State	Area required		Surplus Area With Ceiling of 30 Acres					Surplus Area With Ceiling of 45 Acres					Surplus Area with Ceiling		
	To make up sub-basic holdings to basic size	For settlement of landless at a basic holding	Percentage of holdings affected	Extent	% to area owned	% to col. (2)	% to col. (3)	Percentage of holdings affected	Extent	% to area owned	% to col. (2)	% to col. (3)	Percentage of holdings affected	Extent	% to area owned
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Andhra ...	53	47	3.3	21.7	12.0	41	47	1.5	13.4	7.4	25	29	0.8	9.2	5.1
Bombay ...	199	52	6.3	61.4	13.0	31	118	2.7	34.9	7.5	18	67	1.3	23.0	5.0
M. Pradesh ...	230	94	4.3	55.9	15.0	24	59	2.0	37.3	10.0	16	40	1.2	27.6	7.4
Madras ...	77	57	2.4	41.9	12.9	55	74	1.1	29.9	9.2	40	53	0.7	23.9	7.3
Punjab ...	8	8	2.0	10.4	7.4	127	135	0.8	6.2	4.4	76	80	0.4	3.9	2.7
Hyderabad ...	73	66	13.0	95.5	20.2	130	144	6.5	61.0	12.9	84	90	3.7	42.7	9.0
M. Bharat ...	58	17	5.6	16.5	11.3	29	95	2.3	9.0	6.2	16	52	1.2	5.8	3.9
Mysore ...	26	9	3.3	9.0	10.1	35	96	1.5	5.5	6.2	22	59	0.8	3.9	4.4
PEPSU ...	1	3	3.4	4.2	8.1	323	124	1.3	2.2	4.3	169	63	0.7	1.4	2.8
Rajasthan ...	64	12	...	13.0	9.0	20	108	...	10.0	7.0	16	83	...	8.0	5.0
Saurashtra ...	3	9	29.7	18.6	21.9	547	211	12.2	8.6	10.1	253	98	5.3	4.4	5.2

FOOT-NOTES:—I. The Surplus Area in Hyderabad is in terms of 'converted dry acres'.

II. In Punjab, PEPSU and Mysore the census was confined to holdings of 10 acres and above. In Rajasthan it was conducted in 22 selected tahsils only. The state Governments have, however, given estimates of area comprised in all owned holdings.

III. A basic holding has been assumed to consist of—

(1) 10 acres for Bombay, Madhya Pradesh, Hyderabad, Madhya Bharat, Rajasthan and Saurashtra.

(2) 5 acres for Andhra, Madras, Punjab, Mysore and PEPSU.

Area "owned" includes lands held as owner as well as land held under permanent and heritable rights. Area "leased" means the area in which a tenant does not hold permanent heritable rights. This area is included in the area "owned". Area under personal cultivation can be arrived at by subtracting the "leased" area from the "owned" area.

The entire agricultural land held by a person as owner throughout the State constitutes a single holding. In case of joint holdings the share of each co-sharer has been treated as a separate holding.

The data generally relate to the year 1953-54.

The table on p. 112 shows the estimates of the area that will be required to settle landless workers and build up the sub-basic holdings to basic size in the various States, and of the surplus land that will be available in case the ceiling is applied at 30, 45 or 60 acres of the area owned—

As already stated, however, the area owned includes the area leased. Permanent and heritable rights as in Uttar Pradesh, can easily be conferred on the tenants of the area leased whether they be non-occupancy tenants of home farms (sir or khudkasht lands) or sub-tenants, and we need place a ceiling only on the area under personal cultivation. The area under lease in the various State included in the three categories of large holdings is given in table shown on page 114.

Nor is it all holdings that the Planning Commission would like to be broken up. The Committee appointed by the Land Reform Panel of the Commission to report on the Size of Farms suggested that a farm which yielded a gross average income of Rs. 1600 or a net income—including remuneration for family labour—of Rs. 1200 and is not less than a plough unit, that is, an area of land which an average family could cultivate with a pair of bullocks, or its multiple in area, may be considered as a family holding; that the limit for the ceiling should be three family holdings for an average family in which the number of members does not exceed five; and that one additional family holding should be allowed for such additional member subject to a maximum of six family holdings.

Now, the area of three to six family holdings almost throughout the country will measure up to more than 30 acres, and in some more than 45 acres and even more than 60 acres.

**TABLE XXVII**  
**(AREA IN LAKH ACRES)**

States			Holdings of more than 30 acres	Holdings of more than 45 acres	Holdings of more than 60 acres
Andhra	...	...	7.41	6.0	5.08
Bombay	...	...	27.48	21.54	17.40
Madhya Pradesh		...	22.55	17.90	15.47
Madras	...	...	21.63	18.61	16.56
Punjab	...	...	16.97	13.26	10.88
Mysore	...	...	3.46	2.70	2.20
Madhya Bharat		...	6.23	4.62	3.65
Hyderabad @		...	48.85	27.70	17.20
PEPSU	...	...	3.88	2.80	2.17
Saurashtra	...	...	6.73	4.50	3.26

@ Area converted into 'dry acres.'

Still further, according to the Planning Commission, "there would appear to be an advantage in exempting the following categories of farms from the operation of ceilings which may be proposed :—

- (1) Tea, coffee and rubber plantations ;
- (2) Orchards where they constitute reasonably compact areas ;
- (3) Specialised farms engaged in cattle breeding, dairying, wool-raising, etc;
- (4) Sugarcane farms operated by sugar factories; and
- (5) Efficiently managed farms which consist of compact blocks, on which heavy investment or permanent structural improvements have been made and whose break-up is likely to lead to a fall in production.

In the nature of things, remarks the Commission, these are general suggestions which should be adapted to the needs and conditions of each State.

The area that will actually be available for redistribution or that need be redistributed will be found to be much smaller than the area shown in columns 4, 9 and 14 of the table on page 112. Anyway, redistribution will not make any appreciable difference to the agrarian picture as a whole and will not solve any problems.

A more constructive solution lies in the development of non-agricultural resources which might permanently draw off some of those peasants who possess uneconomic holdings and landless labourers who find their wages unremunerative, and which might further serve as a subsidiary source of income to those who still remain in agriculture.

A detailed discussion of the development of non-agricultural resources, however, is not germane to the main thesis of this brochure and is, therefore, not being included here.

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## CHAPTER XV

### INTENSIVE AGRICULTURE

Reclamation of culturable waste and its colonization, redistribution of surplus land taken away from large holders, and industrialization are the recognised devices for relieving the pressure of population on land. Maximum use has to be made of them, but it is clear that they will not be able to relieve the present agricultural situation in any appreciable degree. As regards ready-made panaceas, like co-operative farming, based on ideological preferences, they will not only fail, but may prove dangerous. The best long-term solution of the problem would, in our opinion, seem to lie in some method of population control, and the best immediate solution in more intensive exploitation of the available area and the growing of crops that produce more food per unit of land.

We have already seen that in our conditions where land is limited and labour so plentiful, we cannot but have intensive farming—a system of small farms in which relatively more labour is employed per unit of land and the object is to realize the highest yield per acre. It is a case of Hobson's choice: even if we would, we cannot have extensive farming—a system in which relatively less labour is employed per unit of land and the object is to realize the highest net return per man. We have already discussed why production per acre rises with the decrease in the area of a farm. Reference has also been made to the data for Chinese intensive agriculture, given in John Lossing Buck's "Land Utilization in China", which show that increase in average production per acre continues up to the place where each farmer has 2.6 acres. But even when the farm grows smaller than 2.6 acres, the decrease in yield per acre and hence in total yield is less than the drop in production per man.

The very fact that the yield per acre in India today is very much lower than that in some countries with comparable climatic and soil conditions shows that with proper planning and effort it should not be difficult to increase the yield per acre very substantially even on the basis of known techniques. The small size of the holding is no obstacle to increasing the yield per acre as the experience of China and Japan would prove.

"Given three tracts of land of equal inherent production", says J.D. Black, "one in Japan, one in China and one in India, and each farmed at the state of the agricultural arts that is average for these countries, the Japanese tract will produce roughly a half more than

the Chinese tract and the Chinese tract roughly twice as much as the Indian tract" ("Introduction to Economics for Agriculture, 1953" page 344).

In both China and Japan, peasants work harder than in India. Their agricultural practices are also superior to ours. In China particularly, they are greatly manure-minded and, rightly, regard night-soil as property which has to be cherished, rather than as waste material which may be thrown away. Food is short in India not because there is not enough land, but because we are not making an efficient utilization of our resources.

Japan has proved that it is possible to utilise science, and all that science has placed at the disposal of man, equally well on small farms as some of the western countries have utilized it on large farms. The emphasis in Japan is on maximising yield per unit of land by substituting land as much as possible by capital and labour. Although production and distribution are on an individualistic basis, the State has provided so many facilities by way of highly developed transport and marketing organisations, easy credit, national research and extension services, etc. that the yields per unit of land on the tiny farms of Japan are to-day among the highest in the world. Each farm is run as a small business and within his limited means the Japanese farmer is as anxious to make the fullest use of modern technology as large farmers in other parts of the world.

Improvement in agricultural productivity in India cannot be had for the asking. The use of improved farming methods and greater quantities of capital per man are the steps that other countries have consciously or unconsciously taken when they found their population increasing and their area of agricultural land limited or diminishing. We, too, will have to do the same. An immense dissemination of education and technical knowledge will be needed: we will have to learn (and practise) the simple arts of Japanese, Chinese and Italian peasants, their methods of manuring and other cultural practices which are far superior to ours. Capital will have to be found to provide water for irrigation, to provide livestock and to provide new equipment to a steadily increasing degree, for example, the simple equipment that the Italian peasant uses, for dairying, rice growing, fruit growing and similar activities. The Indian Delegation to China has found that it is exactly on these two points viz. familiarising the peasantry with still better and im-

proved techniques and investment of more capital, that the Communist Government is laying most stress in China.

We have to be clear in our mind about four basic factors if we are intent on finding a correct solution of our low agricultural yields and also of other related problems—firstly, that our agriculture is already labour intensive; secondly, that, when we talk of intensive agriculture in our country, it is capital-intensive agriculture that is largely meant; thirdly, that capital in this context is not a synonym for large machinery, and, fourthly, that our agricultural arts, practices or techniques are very inferior, indeed, and will have to be improved.

Not only intensive educative work will have to be done at the village level if we intend to inspire the peasant to put forth greater effort both of mind and body in his work, but we will also have to make drastic changes in our outlook towards his problems. Views and sentiments of the peasant are seldom shared by those at the top: few are of peasant origin or have any connexion with the village. We are unable to break away from the ideas we may have received ready-made from foreign oracles—western oracles till yesterday and eastern today.

In some parts of the country the peasant is handicapped by certain social taboos, for example, in the eastern parts of Uttar Pradesh those belonging to some higher castes, who, perhaps, own larger part of the land, will not wield the plough themselves. A well-organised, country-wide movement which will reach the cottage of every peasant and will be directed in such a manner as to evoke psychological response from him, will have to be launched to root out all kinds of social and other inhibitions that stand in the way of increased effort towards greater production. Sometimes small things and administrative obstacles in the form of rules, instructions, etc. erected by unimaginative officials, stand in the way, which will all have to be studied and removed to the extent possible.

Resource facilities which go to increase production are known to all students of agricultural economics and, in fact, to every peasant. These are water, manures and improved seed. These have to be provided both through governmental effort and cooperative action.

It will be a mistake to believe that co-operation does not suit the genius or mental attitudes of our people. It is when a person is convinced that co-operation, which, in fact, is only so-called and is another name for merger, would deprive him of his individual liberty and individual

rights in property that it becomes abhorrent to him. A village, as our long history bears out, was always a stronger moral unit than a factory is. The sense of the community was a vital thing among the peasantry, providing a natural foundation for collaboration or co-operative action. So in spite of agriculture being the most individualistic industry, the peasant in old India, as in some other countries also, has inherited and kept up certain co-operative instincts and traditions of neighbourly collaboration. Helping each other, whether it was a matter of ploughing, bringing in the harvest, building a house or even preparing a girl's dowry 'chest', was a matter of course, a tradition, not an organised arrangement. The cost and responsibility of sugar-cane pressing, well or tank irrigation, provision for drinking-water, drainage, cultural centres, fairs, etc., have been shared in common from time out of mind. Cultivation of crops according to a pre-arranged plan and their protection from boars and other wild animals are still common features of some of our villages. Neighbourly collaboration has taken various other forms also: such as lending each other a bullock or a pair of bullocks; exchanging a day of work for other services, etc.. In the same way, differences or disputes amongst them were settled mostly by discussion on a basis of equity guided by the village elders, the priest or the teacher, again, as a tradition and out of the self-same sense of being one community: hardly, if ever, was a matter put to vote. Within a better and consciously-planned organisation, this mutual cooperation or collaboration might be still further extended and developed.

Agricultural co-operatives can be made to serve every need and every aspect of rural life. They may, in particular, engage in one or more of the following functions:—

- (1) receiving deposits and making loans for reasonable business and personal requirements,
- (2) improving agricultural lands and water facilities,
- (3) processing, storing and transporting goods produced by its members,
- (4) making available rural industrial facilities,
- (5) insuring property of its members against damage or loss and reducing other uncertainties confronting farmers,
- (6) making available those common services which will improve the social and living conditions, culture and health of the agricultural community,

- (7) conducting educational activities relating to cooperative associations and farming techniques,
- (8) organising collective labour, or shramdan, to meet collective needs, like building a road in one place, and irrigation channel elsewhere,
- (9) improving marketing facilities, that is, facilities for purchase of requirements (including improved seeds, improved agricultural implements or even machines, cattle-feed, scientific manures or fertilizers, if they at all need them, insecticides and domestic supplies like cloth, oil, salt, matches, soap, etc.) and sale of produce.

It is in the improvement of marketing facilities—according to Adam Smith, “the greatest of all agricultural improvements—that a cooperative society offers its members the technical advantages of a large scale undertaking in the largest measure.”

Although the small farmer labours under various disadvantages, yet experience has shown these to be commercial more than technical. He can hold his own in the field of production: it is when he enters the market that he finds it difficult to stand up to the big man. The profit that he might have gained in production is often lost in the selling. Co-operative marketing enables him “to save time for other duties, to enjoy a wider market, to sell a properly-graded product and thereby gain the benefit of a better price, to obtain the necessary financial facilities which will enable him to spread his sales over a period of 12 months instead of disposing of his products immediately after harvest and, finally, therefore, to enjoy a wider market also in respect of time.”

What we have in mind is a cooperative society equally distinct from the liberal Capitalist society as from a Collective society of Communism—a cooperative society where small men combine amongst themselves and, on the basis of their pooled resources, find the resource facilities which the big man is able to do on the basis of his capital, where all exploiters and middle-men are eliminated, where, while exploitation is ended, the individuals remain free and their personalities are not merged unidentifiably in a whole.

The distinguished European thinker, Count Coundenhove-Kalergi in his “Totalitarian State Against Man”, has suggested the establishment of agricultural co-operatives as a final and lasting solution of all the ills

of the war-weary world. Discussing the need for an economic revolution, he observes;

"It demands a free economic system and operation. Its aim is the creation of the greatest possible number of *Independent existences* bound together by the principle of co-operation. It rejects both economic anarchy and collectivism. Its model is to be found in the agricultural co-operatives, which combine all the advantages of private property with the spirit of brotherhood and reciprocal aid; they differ as much from the collectivist factory management of the Soviet kolhoz as they do from the anarchic misery of small isolated peasants without machinery and cooperation" (p. 192).

That is, it is farmers' cooperatives that are needed, not cooperative farms.

Simultaneously with organising a comprehensive co-operative system, which will embrace almost all economic activities of the peasantry short of pooling the land, we will have to pay attention to several other serious problems which beset the village and the land.

We will have to conserve our soil resources which constitute the greatest wealth of any nation. Neglect of this aspect of its economic life has led many a people to ruin and converted many a prosperous country into a howling desert. Tree plantation is singly the most potent method that will conserve the soil resources, as also the water resources, since no storer of water has ever been invented that is more efficient than deep, porous soil, and will prevent floods inasmuch as raindrops would have been trapped upstream where they fell. Bunds, except of minor dimensions and at a few places, are at best a palliative, which may, in course of time, prove worse than the disease they are designed to control. The hydraulic cycle (जल चक्र) in Nature, which man can help maintain by planting trees, has to be explained to every child in the country. It was not without reason that our Rishis taught that tree means water and water means life, and our unsophisticated villagers have been handing down a saying from father to son that it is a sinful act to cut down a green, living orchard, while it is a virtuous act to plant one. Van Mahotsava is one of the few movements launched since the attainment of Independence that have gone to the root of a problem and had a psychological appeal, but the movement is slogging; it is in danger of becoming a formal ritual and stands in need of rejuvenation. If groves to be planted in the future are exempted from payment of land-

revenue and agricultural income tax, it will give a fillip to the movement.

We should also, all clamour notwithstanding, take a definite decision in long-term national interest that no forests shall in the future be cut down simply to extend cultivation or settle landless people. Our food problem will be solved almost entirely by intensive cultivation, rather than by bringing valuable forest land or marginal and sub-marginal land under cultivation. Also, cover crops, crops that will cover and protect our fields during the period of heavy monsoon precipitation, will have to be encouraged. These will prevent the soil from being eroded, help to reduce floods, and, further, some of them may serve as green manure.

Soil is not only getting poorer through erosion: it is being exhausted through lack of manure and application of wrong manures. We will have to do some re-thinking about chemical fertilizers, at least, about the manner of their application. Perhaps, it will not be in the interest of the country to lay so much emphasis on the mineral, inorganic fertilizers that we have recently done. Farm-yard waste is the best organic manure that Nature itself provides. Like the hydraulic cycle, there is also a nutritional cycle (खाद्य चक्र), without maintenance whereof Mother Earth will refuse to yield any crops at all. Nature has so ordained that whatever earth produces is the nutrition (खाद्य) of all living things including man, but whatever part of this nutrition is left unutilized and, therefore, rejected by the body of man, beast, bird and insect, is the nutrition of Mother Earth, which had, in the process of producing nutrition for the animal world, got exhausted and hungry. If this night-soil and farm-yard waste are composted, that is, properly treated, and returned to the Earth, the nutritional cycle becomes complete, and our fields will never disappoint us and will continue giving us an ever-enduring supply of food. One really becomes tongue-bound at the wisdom of our ancestors who gave the name of (खाद्य) to the farm-yard and other organic waste that is fed to the fields every year.

Our peasants do not know how to store and preserve this food of Mother Earth. They will have to be taught that Mother Earth's food will have to be as carefully stored, preserved and guarded as we do our own food and the fodder of our cattle. Secondly, all the farm-yard waste will have to be returned to the soil. In most parts of the country, perhaps, in all the parts, about three-fifths, may be, even two-thirds, of this manure, is turned into cakes and burnt in our choolhas

and hookas as fuel. Now, nothing could be more foolish on the part of a peasant. Burning of dung should be a crime; the peasant must find alternative fuel anyhow. Babool is one alternative: the tree grows very fast and makes very good firewood. Village Panchayats could maintain a grove of babool, or each peasant might have a few trees on his holding or the boundaries of his fields. Because of its deep-rooted system babool does not compete with farm crops for nutrition in the upper layers of the soil and can tap the sub-soil water and, therefore, thrive on usar (saline) lands. Its feather-like leaves do not shade crops so as to reduce their yields. It is a member of the leguminous family of trees which grow nodules on their roots and fix nitrogen. Therefore, it has an additional advantage of rendering unculturable land culturable.

Cotton-stalks could make another alternative: if we can persuade every peasant to grow, where climate does not stand in his way, at least one-third or one-half of an acre of cotton on his farm, as he used to when the British conquered the country, it will, in addition to fuel, give employment to his women-folk, employment to the black-smith, the carpenter, the carder, the weaver, the dyer, etc. and save money, which he would have spent on purchasing mill-made cloth from the market.

We will also have to have new choolhas for our villagers—choolhas which will utilize all the heat, all the energy that is generated from the fuel. To-day, much of the energy goes waste. Indeed, economy of fuel must be made a national slogan—a slogan of as big an importance as any other, just as it is in Japan.

In this connection it will not be out of place to exprees, rather repeat it as our opinion that large agricultural machinery serves to deplete the soil, rather than to improve or conserve it. We will therefore, do better to discourage its use on lands which are already under the plough.

Correct agricultural practices will also have to be taught, wherever necessary, and encouraged. Wrong practices lead both to erosion and exhaustion of the soil.

Lastly, there is the question of uneconomic cattle which are a great strain on the resources of the country. It is typified in the problem of the cow. Cow has given us traction power in the form of bullocks and will continue to give it; it has given us sustenance for land in the the form of dung and sustenance for man in the form of milk. So that, it is the base of our agricultural economy and our health. Our civilization,

in fact, our very existence depends on agriculture : cow, therefore, is rightly regarded as almost a member of the peasant's family and has rightly occupied a high place in our legend, in our folk-lore, in our history, in our sentiment. At the same time, its breed today has deteriorated greatly and it cannot compete with the buffalo, at least, in the production of ghee or fat which is the measure of income that a milch-animal brings. So, as soon as its maintenance begins to cost more than what it yields, the peasant sells it-to the butcher, or a middle man, knowing all the while that he is sending it to the hack. This outrages the feelings of the Hindu community. So somewhere a compromise has to be made; a principle has to be found which will strain neither the heart of the Hindu nor the economy of the country. The best solution would seem to lie in sterilizing all uneconomic cows, so that they might not be instrumental in multiplying a useless breed, and simultaneously in up-grading the sires—the bulls

The day the cow ceases to be an object of utility altogether, it will disappear completely, sentiment notwithstanding. Since the horse went out of use as a result of mechanization of the army and other transport after the first World War, it has become rare in the country, without having been butchered or eaten up by anybody. On the other hand, according to the cattle censuses of Uttar Pradesh, the she-buffalo has, during the last 50 years, multiplied in numbers as compared with the cow, inspite of the fact that proportionately more buffaloes have gone to the shambles during this period than the cow. This is all because the house-wife attaches, and rightly, more value to the buffalo than to the cow.

The following statements\* shows the number of cows and buffaloes slaughtered in the recognized slaughter-houses of Uttar Pradesh since 1936-37, for which period along the figures are available.—

**TABLE XXVIII**

Year		Cows		Buffaloes
1936—37	...	1,26,828	...	1,12,030
1937—38	...	1,42,237	...	1,21,817

\* Report of the Gosamvardhan Enquiry Committee, Part II (Appendices), page 99.

Year		Cows		Buffaloes
1938—39	...	1,18,690	...	1,27,914
1939—40	...	1,35,379	...	1,54,198
1940—41	...	1,26,331	...	1,80,891
1941—42	...	1,25,470	...	2,42,229
1942—43	...	1,17,207	...	2,05,148
1943—44	...	76,543	..	1,72,763
1944—45	...	59,233	...	1,60,881
1945—46	...	75,345	...	1,82,493
1946—47	...	81,544	...	1,80,737
1947—48	...	49,908	...	27,434
1948—49	...	19,024	...	1,70,774
1949—50	...	27,839	...	2,02,196
1950—51	...	5,086	...	2,32,962

In spite of a total of 25,74,000 buffaloes having been slaughtered during these 15 years as against a total of 12,87,000 cows only, the number of the former increased from 34,21,000 in 1904 to 49,88,000 in 1951 while that of the cow decreased from 69,48,000 to 61,20,000 during the same period. The cattle census of 1956 shows the same trend: the number of the cows came down to 57,84,000 while that of buffaloes went up to 51,87,000. While during 1951-55 nearly 15,000 cows had been slaughtered as against 8,98,000 buffaloes.

As regards the monkey and the blue-bull, they are nothing but pests and have undoubtedly to go. Respect for life inculcated by our ancestors has its limitations. Our agricultural economy has reached a stage where it cannot bear unnecessary burdens, where we will have to make a definite choice whether it is the man or animal that we want to see survive. Both the monkey and the blue-bull do incalculable harm to standing crops and have nothing to recommend in their favour, except superstition.

Goat is yet another enemy of vegetation. It tears away grass and plants from the very roots. Just as a swarm of locusts eats up everything it comes across, so a herd of goats can, in course of time, devastate a blooming country-side and convert it into a desert. The goat has, therefore, to be actively discouraged, particularly, in Rajasthan and the adjoining areas. It renders no peculiar service to the people, except as a source of milk supply to the poor man and one of the sources of meat-supply to the non-vegetarian section of our people. There are, however, other sources of milk supply, and the non-vegetarians can do with a little less or dearer meat.

(A discussion of population control, which is the best long-term solution of our unemployment problem is not being included in this brochure lest it become bulky).

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