10.0 In Uttar Pradesh, the agricultural industry suffers from large scale underemployment. Large number of workers find no work or insufficient work for most part of the year. The employment is irregular and intermittent. Alternative opportunities for employment are very limited. Even when a worker is employed, he produces much less than what he could do per hour of work, if he were to work with improved tools and under better organisation. The visible under-employment in 1951 amounted to about 27 per cent. Invisible underemployment was of the order of 9 percent provided only holdings of 10 or more acres are taken into consideration, and 26 per cent if improved techniques are extended to all holdings. As regards potential under-employment, it may rise to 60 to 80 per cent of the labour-time currently utilised.

10.1 In case of visible underemployment, the whole of it is likely to be seasonal, invisible underemployment might consist of about 30 per cent of chronic underemployment, the rest being seasonal; and in potential underemployment, the seasonal element shall be reduced to a negligible degree, and the whole of underemployment
may be relegated to chronic type.

WAYS TO ABSORB SURPLUS LABOUR-TIME IN AGRICULTURE

10.2 The problem which faces a planner and a social worker is how best to utilise the surplus labour-time available by absorbing the idle labour in agricultural and non-agricultural occupations that are available and others that can be created. All avenues have been discussed by individual thinkers as well as by committees organised by private institutions and concerns or appointed by State and Central Governments or sponsored by international institutions. These discussions are however very descriptive and very general in character. Attempt shall be made here to give some rough quantitative estimates of the extent to which additional labour-power can be absorbed in agriculture. These estimates shall give an approximate idea of the relative importance of various measures that can be adopted to rid the agricultural industry from the wide and deep-spread underemployment.

10.3 Out of numerous measures that can be suggested, the following shall be discussed here.

1. Land reclamation and prevention of erosion.
2. Double-cropping
3. Mixed Farming
4. Intensive cultivation
5. Establishment of demonstration centres
6. Establishment of repairs houses
7. Establishment of veterinary hospitals.

10.4 Apart from agricultural occupations listed above, surplus labour-time available in agricultural off-seasons can be absorbed
in non-agricultural occupations, some of which are seasonal such as road construction and others which are not seasonal in the main but are amenable to be undertaken at suitable intervals, such as various cottage industries. These will be discussed briefly without any attempt to give quantitative estimates.

**LAND RECLAMATION AND PREVENTION OF EROSION**

10.5 In the year 1949-50, the Uttar Pradesh Agriculture Department conducted through the District officers a detailed enquiry into the nature of the area recorded as cultivable waste in each district and the results may be seen in the following table.

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Uttar Pradesh (in acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Area under culturable waste-land not available for immediate cultivation.</td>
<td>4515046</td>
</tr>
<tr>
<td>B. Area under culturable waste land available for immediate cultivation but which could not be cultivated</td>
<td>2099235</td>
</tr>
<tr>
<td>(a) Kans growth</td>
<td>30776</td>
</tr>
<tr>
<td>(b) Threshing floors</td>
<td>91320</td>
</tr>
<tr>
<td>(c) Malaria</td>
<td>40575</td>
</tr>
<tr>
<td>(d) Floods</td>
<td>87280</td>
</tr>
<tr>
<td>(e) Lack of drains</td>
<td>35669</td>
</tr>
<tr>
<td>(f) Lack of water</td>
<td>375631</td>
</tr>
<tr>
<td>(g) Distance from Abadi</td>
<td>120694</td>
</tr>
<tr>
<td>(h) Damage from wild animals</td>
<td>278593</td>
</tr>
<tr>
<td>(i) Other causes</td>
<td>988576</td>
</tr>
</tbody>
</table>

(cont.)

1. Area under culturable waste land that have been given have been quoted from: Census of India, 1951, Vol. II, Uttar Pradesh, Part I-A-Report pp. 267.
Area under culturable wasteland that can be brought under immediate cultivation after improvement besides the area given against B. 2739812

10.6 In Uttar Pradesh there is about 80,776 acres of land under Kans growth. This can be easily brought under cultivation after reclaiming it by means of tractors. In U.P. the total number of tractors used for agricultural purposes was 2,548 in 1951 as against 8260 in India. Out of this 177 were state owned and rest 2371 privately owned. The State tractors are mainly used for land reclamation. The area to be reclaimed comes to about 500 acres per tractor. It is thus seen that Kans infected area can be brought under cultivation without much difficulty.

10.7 In India and so in Uttar Pradesh, major parts of the area is cultivated only once a year, and in each village, there are one, two or more places reserved for threshing purposes. These sites are useless excepting for the duration of the threshing season. When the areas covered by such sites all the State over is taken into consideration it comes to a sizeable figure of 91326 acres. This area can be very profitably utilised for cultivating purposes by performing the threshing operation on the cropped field itself.

10.9 About 40576 acres of land escapes cultivation because of malaria climate prevailing in the area. These areas can be made habitable by eradicating the danger of malaria by aerial spraying of D.D.T. and other measures that have now been discovered and tried to disinfect such areas.

2. No. of tractors for agricultural purposes only:

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Government</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>6260</td>
<td>1324</td>
<td>6836</td>
</tr>
<tr>
<td>U.P.</td>
<td>2548</td>
<td>177</td>
<td>2371</td>
</tr>
</tbody>
</table>

(Source: Agricultural Situation in India, April 1953.)
10.10 An area of 87,200 acres goes uncultivated because of floods and additional 35,669 acres because of lack of drains. These areas can be brought under cultivation by constructing dams and channels and harnessing the rivers to prevent them from being flooded frequently.

10.11 120,649 acres of land is not cultivated just because of the fact that some tracts of land lie at a long distance from Abadi. Such tracts of land must be cultivated and they are likely to be automatically brought under cultivation as the safety of standing crops is assured and means of transport are developed and improved when the villagers become less fearful of constructing their houses independently at a distance from the main Abadi.

10.12 37,631 acres escape cultivation because of lack of irrigation. This area shall come under cultivation as the means of irrigation are improved and developed.

10.13 278,593 acres are uncultivated because they are exposed to damages from wild animals. State should take a hand in this affair and safeguard such areas from the ravages of wild animals so that these areas can be brought under cultivation.

10.14 938,876 acres have been recorded uncultivated due to unspecified causes. This may also be expected to be cultivated.

10.15 Thus it can be expected that 2,099,235 acres can be brought under cultivation during the course of the present plan period or the present and the next. Assuming roughly that about
100 labourdays shall be required per acre for cultivation, it can be expected that about 650,000 workers will be absorbed through land reclamation in about 10 years.

10.16 An additional area of 2,759,512 acres can be brought under cultivation, which is at present recorded under culturable waste land, shall provide additional opportunity for the absorption of about 990,000 workers.

DOUBLE CROPPING

10.17 In India and so in Uttar Pradesh, major parts of the area is cultivated only once a year. Cultivated area in Uttar Pradesh and the percentage of area cropped more than once was as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Net cropped area (in 00,000)</th>
<th>Area cropped more than once (in 00,000)</th>
<th>Percentage of (2) to (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951-52</td>
<td>390.7</td>
<td>84.2</td>
<td>21.6</td>
</tr>
<tr>
<td>1952-53</td>
<td>394.2</td>
<td>94.4</td>
<td>23.9</td>
</tr>
<tr>
<td>1954-55</td>
<td>400.2</td>
<td>96.3</td>
<td>24.5</td>
</tr>
</tbody>
</table>

It is thus apparent that the double cropped area, although it is increasing, is less than one quarter of the total net cropped area. If the proportion of area cropped more than once is increased, the number of labourhours utilised in agriculture will be greatly increased.

2. This is based on the ratio of total labourdays worked in 1950-51 agriculture of the State (which amounts to 4462024000 according the present calculations made in Chapter five) and the total gross area under cultivation in 1950-51 (which amounted to 46320842 acres in the quinquennium average for the year ending 1950-51. Vide Census of India 1951, Vol. II U.P. pp. 251, table 241)

10.19 The area cropped more than once increases mainly with the irrigated area and the supply and use of fertilisers. Some of the crops such as Sugarcane and Arhar take almost a full year for their growth and maturity, the rest get ripened in 4 to 5 months' time from the date of sowing. In 1950-51, the total net cultivated area was 37,144,725 acres out of which an area of 2,504,541 was under sugarcane. The total net cultivated area excluding sugarcane is thus about 34,000,000 acres. Only one-fourth of this area is cropped more than once, the rest being cropped only once. Assuming that one-third of the total net cultivated area cannot be cropped more than once due to floods, scarcity of rains, infertility of the soil or the necessity of keeping fallow, it is stipulated that five-twelfth of the total net cultivated area or about 14,000,000 acres can be brought under double cropping afresh. Assuming that about 30 additional labourdays shall be required per acre for double cropping an area, it is found that about 42,000,000 labourdays or 1,400,000 workers shall be absorbed in addition.

MIXED FARMING

10.20 Average Indian diet is very deficient in milk and milk products, meat, fish and eggs. The table below gives a comparison between a balanced diet and the average per capita food consumption in India.

It can be seen from the above table that the consumption of estimated availability of food materials for consumption in India is far from adequate for the maintenance of good health. It is therefore, imperative that the composition of the average diet is improved.

10.22 This improvement can be achieved without contemplating any structural change in the economy, by introducing methods of agricultural production, to remove invisible underemployment. From what has been discussed in the chapter six, it may be stipulated that for each 15 acres cultivation there can be released one pair of bullocks. Hence there will be saving of fodder and chaff and food-grains that were consumed by one pair of bullock, which may be utilised for the consumption of milch cattle, i.e., cows and buffaloes of good breed. From the statement given below it can be seen that a she-buffalo consumes almost twice as much grains as a cow, and more than double of a bullock.
10.23 The Census Report gives the following statement showing the consumption of food-grains by animals in Uttar Pradesh for the Census year 1951.

<table>
<thead>
<tr>
<th></th>
<th>Consumption per head per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bulls</td>
<td>17.7</td>
</tr>
<tr>
<td>2. Bullocks</td>
<td>3.28</td>
</tr>
<tr>
<td>3. Cows</td>
<td>4.9</td>
</tr>
<tr>
<td>4. She-Buffaloes</td>
<td>8.2</td>
</tr>
</tbody>
</table>

10.24 Dr. K. Kishen assumes that only 10 per cent of the cows and buffaloes are active and consume food-grains, the rest consuming only fodder etc. For the present calculations, however, the consumption of fodder and chaffs will have to be taken into account. Hence it is assumed that the State maintains about half the number of full-fledged buffaloes and cows equivalent to their total population of fodder, chaffs and other course food-grains.

10.25 It can be assumed that a she-buffalo can be kept in place of two bullocks and one and a half cows are equivalent to one she-buffalo or two bullocks for matter of consumption of fodder and food-grains. In 1950-51 the total area sown was 40,100,038 acres, of which 35 per cent forms part of holdings of 10 acres or more. Thus about 2,105,672 she buffaloes in milk can be reared. One she buffalo require at least 114 labour-days (at the rate of two and half labour-days per day) per year. Thus the total number of additional labour-days utilised in agriculture would be about 235,000,000 or about 3,00,000 workers shall be absorbed. If all the land is cultivated on a co-operative basis, so that all individual areas under one single management are more than 15 acres, then the total number
of milk buffaloes released would go up to 6,016,205 and so the total number of labour days absorbed to 670,000,000 or about 2,000,000 workers.

**INTENSIVE CULTIVATION**

10.26 Intensive cultivation means the application of more factors of production to the same tract of land. In U.P., despite the density of population being fairly very high, the cultivation is generally extensive in the sense that the farmer generally does not apply as much of the factors as he should for obtaining maximum amount of production. Mostly, some of the factors are not applied at all.

10.27 It is common practice in U.P. villages, not to apply any manures or fertilisers in production of coarse grains like Sawan, Mandua, Kaudu, and pulses, Qrams, etc. They are seldom irrigated even if the crop is drying up due to shortage of water. In case of major crops like Rice, wheat, Cotton, Sugar-cane, manures and fertilisers are applied to not more than 50 per cent of plots of land. As regards the insecticides and fungicides, there use is

---


8. This based on a hurried look into the filled in N.S.S. schedules and on personal observation.
conspicuous by absence. Less attention is given to construc-
tion of hedges and prevention of crops from wild animals
and pests than it should be. Repairs and construction of
dams etc. also is procrastinated from year to year. It is
true that in majority of cases defective cultivation is due
to lack of resources in the hand of farmers, but in consider-
able cases it is also due to negligent habits and a sense of
unconscious fatalism, and ignorance.
10.28 Whatever may be the cause, if cultivation is made more
intensive and a shift takes place from coarse grains to staple
crops, the amount of labour-time required for cultivating one
acre of land shall be increased and hence additional labour-time
may be absorbed. If we assume that at least about 10 labourdays
per acre will be needed for intensifying cultivation, it can
be argued that about 390,000,000 labourdays or 1,300,000 workers
could be absorbed in U.P. agriculture in addition, (according
to cultivated area of 1951)
ESTABLISHMENT OF DEMONSTRATION CENTRES.
10.29 It is perhaps true that Indian farmers have inherited
farming practices that have proved beneficial for ages. And
so long as they are using the old methods of production, they
have not to learn any new lesson. But modern tools and imple-
ments have resulted in great saving of labour-time and physical
exertion. The introduction of these tools and implements, no
doubt, release a sizeable proportion of labour-time that is
actually being utilised. But a part of labour-time, thus, saved

The net area cropped in U.P. in 1950-51 was 39076000 acres
Vide U.P. through Figures 1952-53, Bulletin No.34, Economics
and Statistics Department, U.P. pp. 7.
May be reabsorbed by the establishment of demonstration centres that the State Government must start in order to educate the farmers in modern methods of farming, to supply manures and fertilisers, better variety of seed and teach their proper use.

10.30 The total net cultivated area in 1951 was 37,965,247 acres or 59320 Square miles. If we assume that one demonstration house shall be required per five Square miles of cultivated area, it can be stipulated that about 113640 persons shall be absorbed if 10 persons per demonstration house are employed.

VETERINARY HOSPITALS.

10.31 In U.P. the death of veterinary houses is not less than that of hospitals. When the cattle catch a disease, it is the local medicines whose healing effect has never been tested are applied with dubious results. The number of veterinary houses was as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950-51</td>
<td>222</td>
</tr>
<tr>
<td>1951-52</td>
<td>229</td>
</tr>
<tr>
<td>1952-53</td>
<td>229</td>
</tr>
<tr>
<td>1953-54</td>
<td>233</td>
</tr>
</tbody>
</table>

10.32 This shows that the number of veterinary houses is increasing very slowly. If we assume that a veterinary house shall be established in each 5 square miles under cultivation it can be said that about 59020 persons shall be absorbed on the rate of five persons per veterinary house.

REPAIR HOUSES

10.33 The establishment of repair houses will no doubt increase the employment there in, but it will replace part of the labour of local artisans, hence there would not be any substantial increase on net employment. But the establishment of repair house will increase the efficiency of tools and implements and the total productivity of the agriculture. As the local artisans can only repair the existing implements, the establishment of repair house is very essential. Or the same artisans may be trained to take up repairs of improved implements.

10.34 The following gives the summary of the labour-power that can be absorbed in various agricultural avenues:

<table>
<thead>
<tr>
<th>Avenues</th>
<th>No. of workers that can possibly be absorbed in agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Land reclamation</td>
<td>1,550,000</td>
</tr>
<tr>
<td>2. Double cropping</td>
<td>1,400,000</td>
</tr>
<tr>
<td>3a. Mixed farming (on holdings greater than 10 acres)</td>
<td>860,000</td>
</tr>
<tr>
<td>3b. Mixed farming (after creation of minimum holdings of 10 acres)</td>
<td>2,000,000</td>
</tr>
<tr>
<td>4. Intensive cultivation</td>
<td>1,300,000</td>
</tr>
<tr>
<td>5. Establishment of demonstration centres</td>
<td>119,000</td>
</tr>
<tr>
<td>6. Establishment of veterinary hospitals</td>
<td>59,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,428,000 or 7,228,000</strong></td>
</tr>
</tbody>
</table>

10.35 This shows that about 6 million workers can be absorbed in UP agriculture still further. The total number of male workers estimated in chapter two is 12,820,359, of female workers 4,801,092, and of boy and girl workers 1,043,491. Thus the total of all workers comes to about 15 and a half million.
10.36 From this it can be inferred that agriculture alone can absorb about 50 per cent of the existing number of workers in addition, the avenues discussed above are fully exploited. It has been calculated, as mentioned above that the degree of visible underemployment is about 27 per cent, and that of invisible underemployment 9 per cent (if only holding of 10 or more acres considered) and 35-40 per cent (if all holdings are taken into account), of labour-time actually utilised in agriculture. The latter comes to about 6.2 or alternatively 26 per cent of total labour power. This means that agriculture is itself capable of absorbing ultimately extent of labour power which was visibly or invisibly underemployed in agriculture in 1950-51.

10.37 But the population is increasing at a rate of 1.25 per cent per annum, and so is the number of workers. If the agricultural developments suggested above take about 10 years to be completed, then there will take place a rise of about 16 per cent and if it takes longer time to achieve these developments then the working force would swell still further.

10.38 If we allow for power-farming the problem becomes very gigantic. About 60 to 80 per cent or 70 per cent of the total working force would become redundant and agricultural development would fail to absorb the potentially unemployed persons. Power-farming, however, is not likely to be adopted in the near future.

10.39 Agricultural prosperity, however, will affect other sectors and there is likely to be accelerated progress in the establishment and development of secondary and tertiary industries.
10.39 From the point of view of employment and absorption of surplus, two sectors have strategic importance. (a) Development of transport (b) Development of cottage industries. These may be discussed briefly here. We shall not attempt to discuss general industrialisation which is a major problem requiring separate treatment.

**DEVELOPMENT OF TRANSPORT.**

10.40 Whether lack of proper transport facilities is a serious bottleneck or not, in industrial production, its complete absence cuts at the very root of agricultural prosperity and rural uplift. The following few lines that have been borrowed from an article " reveal the relevant facts.

10.41 "India needs a network of well-planned roads to interconnect food producing rural areas with marketing centres. At present, in most agricultural regions of the country no substantial efforts are being made to raise the per capita income by fruit and vegetable growing or through poultry and dairy products. For the simple reason that the produce will deteriorate owing to the delay in marketing.

10.42 It has been estimated that over half of the total produce of fruits, vegetables, dairy and poultry in distant isolated agricultural region of India deteriorate for want of roads which ensure speedy transportation. This is a big loss for the country and the growers who are naturally forced to confine their farming operation to the sowing of main food crops. Only a few growers who are lucky enough to have national high-ways passing through their area have supplemented their income by sowing fruits, vegetables and such like."
10.43 A comparative study of agricultural developments on the land close to national highways and in isolated regions reveals that farmers have two to three times more income by fruits and vegetables sowing, and mixed farming compared to those whose very existence depends solely on main crops. An acre of land under vegetables or vegetable-seed production for example has given to the growers a net profit of Rs. 1,200 to Rs. 1,500 per acre whereas farmers depending solely on food crops can have at the maximum an average net profit of Rs. 150 to 200 per acre, calculating on the basis of today's average paddy and wheat yield.

10.44 In India there are only 2,40,000 miles of roads in a total area of 12,10,000 square miles, or in other words only 0.20 miles of road per square mile whereas in U.K. there are 2.02 miles of roads per square mile and in U.S.A. 1.01 miles of road per square mile. The U.K. has thus 10 times more road mileage per square mile, and the U.S.A. 5 times more than India.''

10.45 Uttar Pradesh does not fare better than other States of the Indian Union as regards the existence of transport facilities between rural areas and those between the rural and urban areas. The construction of new roads and the improvement of the existing ones is essential for speedy progress of agricultural and rural population. This will not only enable the villagers to produce goods at the farms but surplus also provide opportunities for absorption of surplus labour in secondary and tertiary industries such as small scale cottage production of goods, transporting, artisanship, wholesaling and retailing, small banking, and in numerous other ways. The effect of linking the villages with each other
and that with the cities would be cumulative. Agricultural prosperity would lead to urban prosperity and vice versa resulting into general prosperity and progress of the whole nation.

**SMALL-SCALE INDUSTRIES.**

10.46 Another problem which demands serious consideration is the establishment of new and the development of existing small scale hand industries. This subject has been discussed in detail by numbers of quarters and it is not intended here to add anything original. That small-scale cottage industries are specially suited to rural areas and agricultural households may be pointed here.

1.47 (1) Capital-output ratio of cottage industries is very low. The initial as well as total outlay of capital per unit of output is very little and within the capacity of all agricultural households whose incomes are above the average. The site required for the small-scale production does not require any additional construction. It can be located in any corner of the house.

(2) Labour-output ratio of cottage and small-scale hand-industries is very high. This is a very strategic point. The surplus agricultural labour can be gainfully employed in cottage industries. Cottage industries scope for all sexes of workers of all ages; household male, boys and girls can cooperate and produce.

(3) The tools and implements are locally available, in general. When the cottage industries are developed, employment in tools making and repairing industries will also increase.

(4) The raw materials used in most of the small-scale hand-industries can be locally produced. This will enable the farmers to divert the attention from the production of small and coarse grains to commercial crops, which will add to their incomes and employment.
(5) Production of cottage industries can be adjusted to agricultural off-seasons without any waste of material or obsolescence or deterioration of capital equipment, and without any danger of inflating overhead costs. For the cottage production requires very small stock of raw-materials and capital. This is an advantage; for in rural area during agricultural peak there is heavy demand for labour in agriculture which attracts labour not only from the neighbouring towns but from industries in distant places and cities. During peaks of harvesting and planting all labour-power would be switched on to agriculture. The village small industries can well afford to meet situation without any loss, by reducing the scale of work or stopping it during agricultural peaks and releasing labour-power. During agricultural off-seasons, however, the production in cottage industries will have to be in full swing, to engage idle agricultural labour-power.

(6) A number of cottage products, besides, having local market can command sales in distant parts of the country itself and also in foreign markets. The latter will enable the country to gain foreign exchange for expediting industrialisation besides developing trades and commerce in general.

(7) The cottage industries can serve as ancillary to large-scale machine production. They can produce small-parts of machine take up repairs etc; polishing and finishing, and packaging of finished goods; utilise scraps and left overs of large scale mechanical production. All this will go a long way in reducing the degree of rural underemployment.
RECOMMENDATIONS FOR DEVELOPMENT OF COTTAGE INDUSTRIES.

40.48 It is hard to think of the development of cottage industries without the wholehearted assistance and encouragement from the State. The State must extend its assistance and provide facilities for the following:

1. Loans to workers on suitable terms preferably advanced against receipt of finished goods.
2. Improved equipments.
3. Technical advice for workers.
5. Better wage-scales and working conditions.
6. Protection from machine-made goods for a reasonable period.

EXPORT PROMOTION OF COTTAGE INDUSTRY GOODS

10.49 The following steps should be taken towards making products in sufficient quantity in standard sizes and of standard quality for export:

1. Supervision during production by person who knows and thoroughly understands the requirements and standards of overseas buyers.
2. Inspection and grading of finished products with rigid quality control.
3. Concentration on development of several lines of commodities which are produced in different areas.
4. Delivery of goods for exports:
   a. Orders to be filled on times with meticulous observance of the buyer's specification as to colour, number, quantity, quality patterns etc.- No substitutions.
   b. Reorders of the same quality as the original one
(5) Styling for export should be developed through direct contact with buyers who are making the products. This can be accomplished through maintenance of sample display centres for export buyers, and through advisory marketing services.

10.50 "In Western countries, Better Business Bureaux, Bureaux of Standards, Chambers of Commerce, Producers cooperatives, cooperative marketing Organisations, and many others, flourish and wage goods he wants to buy. In the end the customer decides the fate of any product. It has been found that standard quality, price and steady supply are absolute essentials.

10.51 "It is suggested that the State should concentrate upon the development of products which have a market first at home and then abroad. Exports alone are no solution, though will help.

10.52 The function of the State should be to encourage the development of rural industries; to foster the production of quality products and quantity production methods, and to promote the distribution and marketing of products."12