TOWARDS THE OCEANIC CIRCLE

(Dhanaura Regional Plan)

Jhaverbhai Patel

Foreword by

Acharya Vinoba Bhave

Published by

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Intensive Area Series—8

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Foreword*

Shri Jhaverbhai Patel is a seasoned thinker of Sarvodaya economics. In Maganvadi (Wardha) he also did some research in village industries. He has presented in this book an outline of a comprehensive Sarvodaya plan that can be adopted in rural areas. There are several aspects of village life in which the economic aspect occupies its own significant place. Jhaverbhai's proposal in this regard supported by necessary statistics deserves study and examination not only by Sarvodaya workers but by all well-wishers of India.

Some people seem to have a wrong notion that Sarvodaya does not want to absorb the results of the growing science. No conception can be more erroneous than this. I have been continuously trying to remove this misconception for the last seven or eight years. Really a society based on non-violence alone is the need of the age of Science.

Non-violence + Science = Sarvodaya

and

Violence + Science = Sarvanash (total destruction)

We should never be oblivious of these two equations.

Jhaverbhai's plan may have some points which may be considered debatable. Jhaverbhai does not insist on the total acceptance or rejection of this plan. Conditions vary in different parts of India. Accordingly, the plan can be adapted. This plan presents a broad picture. I commend this book for a close study by workers interested in the service of the village people.

Vinoba

Sabarmati Ashram,
21-12-58

*Original in Hindi is given as Appindix at the end of the book.

GANDHIJI'S OCEANIC CIRCLE

"In this structure composed of innumerable villages, there will be ever widening never ascending circles. Life will not be a pyramid with the apex sustained by the bottom. But it will be an oceanic circle whose centre will be the individual, always ready to perish for the village, the latter ready to perish for the circle of villages till at last the whole becomes one life composed of individuals, never aggressive in their arrogance, but ever humble, sharing the majesty of the oceanic circle of which they are integral parts. Therefore the outer most circumference will not wield power to crush the inner circle but will give strength to all within and derive its own strength from it. No one (will) be the first and none the last."

DEVELOPMENT OF MAN THE CENTRAL OBJECTIVE

I

Oversimplification of the Issue

Importance of Simple Social Structure :

There seems to be an all round tendency to oversimplify the issue of village industries. Those viewing it with part perspective synonimise village industries with crude techniques and are unable to see their social and cultural aspects. Their criterion being mere production and technology, they look upon western countries as developed and characterise our country as under-developed. This part perspective provides wrong objectives and forges wrong terminology which creates a sense of inferiority complex in our nation. The following observation of Leon H. Keyserling should provide the necessary corrective to this situation :

> "Since this is essentially a problem of wisdom and morality, many people and perhaps some nations must revise their out-moded calculations as to who are the 'highly developed' and who are the 'less highly developed' nations. Why should we continue to cling to a terminology which implies that those with more machines are "more highly developed" whether or not they exhibit more wisdom and morality ? Why should we not regard as more precious those attributes of wisdom and morality which are now relatively most scarce, and more scarce, and more needed for the salvation of the world ?"

2. The part perspective is able to see only one side of the pic ture. It sees the advantages of high technology but is unable to to learn from the evil impact upon man of huge centralised or ganisations necessarily arising out of high technology. Here is a poignant observation by a Western thinker about this impact :

> "A baffling vastness in society in which the individual gets lost. Far flung markets, price mechanism and fluctuations of exchange have become mysterious and incomprehensible to any but the specialist." "There is an alarming shrinkage in the average man's understanding of the technology which shelters, clothes and feeds him. Technical achievement and public ignorance of its implications are tending to move with equal velocity in opposite directions... the average man finds himself placed as it were on a conveyor belt on whose smooth running his continued existence depends.....A new ruling class of powerful executives in an individualistie order and of politicians, planners, specialists and bureaucrats under planned economy thus springs up. Privilege returns under a new face. Equality is sacrificed to the pursuit of abundance. It is a disquieting feature of the technological age that personal liberty has come to be "less and less valued" by the population at large".

3. Western thinkers are thus beginning to realise the supreme importance of simple social structure as suited to the development of individuals.

"The framework appropriate to the capacity of the individual," observes Albert Gluzes, "the framework in which the common man is not submerged and can take an interest in the part assigned to him because it gives scope for initiative and personal influence is the village. This is the legitimate father land.....non-aggressive and suited to the structure of normal man. It is, therefore, the

imperative duty of the elect to recreate the village in body and soul. "If we are to have any kind of human rule", observes Lord Northbourne, "to preserve individual freedom, not to lose it, it can only be based on the existence of small manageable sound primary units in themselves coherent and self-contained, which can be built up into large units, in their turn coherent and self contained".

Higher Technology and Vested Interests :

4. The controversy crosses the academic plane in our country when the issue of higher technology is discussed from the point of view of vested interests. These do not only want higher technology but want it for themselves. This is the central theme of the private sector which is trying to get the support of foreign interests and experts so that on this prop it can strengthen itself. While doing so, it is, of course, conscious of public reactions and accepts that "In this country — as in many other under-developed countries — the prevailing attitude is apt to be one of bare tolerance tainted with some suspicion." This is a reaction born out of experience. It is in recognition of this weak side of the private sector both by the public and the Government that increasing importance is attached to the growing of the public sector and the controlling of the private sector.

The issue is thus not technical but social and cultural. It is not a mere question of crude techniques or high technology but of social order and the highest development of man.

Sanction behind Village Industries :

5. While this is one side of the picture, over-simplification of the issue is attempted in another direction by workers interested in developing village industries. These are treated as isolated items. Sometimes details are mistaken for principles and values of life. Limitations of circumstances are idealised and allowed to condition thinking. There is not that degree of research and experimentation

which is required to adapt village industries to suit the changed social conditions. The programme is governed by the pre-definitions of workers rather than designed to meet the needs and urges of the people concerned. As it is formulated today it does not promise a better social order but is capable of giving only some relief to the needy. It can hardly provide whole-time occupation yielding minimum earnings required for minimum standards of living. If educated youths take to them, they do so only as a managerial class and not as wage-earners. It does not thus evoke that pressing demand from the people even in the villages which is essential to create the necessary sanction behind it. Naturally, it remains the worker's programme of producing only goods and has not become the people's programme which can mould national policies.

Growing Gulf between Urban and Rural Areas :

6. The village society is not the same cohesive structure today as it used to be before. The village has become a unit of neighbourhood in which each family pursues its own individual interest. Joint families which provided the facilities of division of labour and sense of security are being divided into smaller ones. The caste system comes in the way of mobility of labour from one occuption to another. With the decline of village arts and crafts, opportunities for self-expression have been curtailed and incomes reduced. In spite of the growth of population the position of rural housing remains stagnant. Thus the whole village economy is being rapidly disintegrated. The struggle for existence is the severest in the villages. Much time and energy have to be wasted in obtaining bare necessities of living, such as water, fuel and light. Against this dismal background of village life, the ambitious and talented youths are forced to migrate to urban areas in search of opportunities and facilities. The process of separating the classes from the masses initiated by the British is thus heightened by the growing

gulf between living standards in rural and urban areas. It is thus a complete vicious circle for the village life and as the proverb goes 'Nothing fails like failure'. With the rapid decline of the purchasing power in the villages there is no sufficient market for products of village industries even on favourable terms. For market the towns have to be depended upon. The same psychology of depression implied in the proverb similarly operates in the field of productivity and amenities of life.

Need for Integrated Approach:

7. When life in the villages has thus becom disintegrated and insecure it is hardly possible to tackle the problem of village industries as an isolated item without a simultaneous attack on the rest of the problems of life. The problem of village industries, in other words, is the problem of an integrated approach to village life. The village as a functioning unit has to be strengthened. Division of labour and security that have been lost to single families have to be provided through community organisation. The obstacles of caste system have to be got over. Villages have to enjoy equality with towns in respect of amenities of life and opportunities for development and to achieve this end the general level of productivity has to be increased. These are some of the fundamental problems of village life which require simultaneous solution. Taken piece-meal, they defy solution.

II

Formulation of Objectives

8. The issue of village industries is thus not so simple as it appears. It raises the question of the whole social order, and particularly in our context, the relationship between the villages and the towns. It thus emphasises the need to formulate in precise terms the objectives of developing village industries and village

life. This was a subject of long talks and correspondence between Gandhiji and Pandit Nehru in 1946 and we are fortunate in having a gist of the talks prepared by Gandhiji himself which gives us the objectives as follows:—

> " The impression that I gathered from our talk is that there is not much difference in our outlook. To test this, I put down below the gist of what I have understood.
>
> 1. The real question, according to you, is how to bring about man's highest intellectual, economic, political and moral development. I agree entirely.
> 2. In this, there should be an equal right and opportunity for all,
> 3. (In other words), there should be equality between the town dwellers and villagers in the standard of food and drink, clothing and other living conditions. In order to realise this equality today people should be able to produce their own necessaries of life, i. e. clothing, food-stuffs, dwellings and lighting and water.
> 4. Man is not born in isolation but is essentially a social animal independent and inter-dependent. None can or should ride on another's back. If we try to work out necessary conditions of such a life, we are forced to the conclusion that the unit of society should be a village or call it a manageable small group of people who would, in the ideal, be self-sufficient (in the matter of their vital requirements) as a unit and bound together in bonds of mutual co-operation and inter-dependence. "

Balanced Development of Man:

9. The highest development of man is thus the central objective of social planning. The fundamental law of development is growth through exercise. The muscles grow through exercise.

The brain develops through exercise. That limb or capacity of man develops which receives exercise. The brain will not develop through mere physical exercise although it derives strength from it. The moral side of man will not grow unless it receives exercise. Thus development is proportionate to efforts. A balanced development of the three planes of man is possible only if the effort is divided evenly between them. But today in the villages only the body of man gets exercise and yet it does not develop for want of nutrition. The brain and the heart hardly receive any attention. Practically, the whole energy of man is spent in the severe struggle for existence and he has very little left to attend to the intellect and the emotion which are the higher planes of his personality. He just lives on the physical plane and hardly has any experience of the intellectual and emotional planes. It is thus a life devoid of development on any of the three planes. Since the personality is one whole, development is composite. Development on any of the three planes acts and reacts upon each other and sustains each other. In the same token, absence of development on any one plane depresses the other two planes. Development on the three planes is thus both the end and the means. Developed intellect, for example, becomes the means of better physical performance. The highest development of man intellectually, economically, politically and morally, therefore constitutes a simultaneous development on his three planes, or in other words, of his whole personality.

Factors of Development:

10. What are the factors favourable for the development of man? The first and the foremost is the society in which he lives. The social structure should be so simple as to enable him to have a sense of self-direction in the management of its affairs. It should take care of individuals as a mother would take care of her children. That is to say, individuals should feel secure and

the weak should feel protected and looked after. It should encourage values of true co-operation. It should organise economic and social activities in a scientific way so as to develop the intellect of those pursuing them and to make a rational use of its manpower. It should provide wider opportunities for development. This is a social structure which can promote the political, moral and intellectual development of man. The second factor is that of technology. It should be such as to reduce to the minimum man's struggle for existence, and leave enough time and energy to be spent in pursuit of developing the higher planes of life. In short, it should be capable of achieving a fairly high degree of productivity which secures the economic development of man. Thus the two main issues to be considered for the all round development of man are social structure and technology.

III

Social Structure

Spirit and Technique :

11. Although social structure cannot change the spirit of man, it can certainly be helpful to its growth. The Socialist gains in the west in the direction of equality and raising living standards demonstrate the value of good social structures. Gandhiji could not, however, "dream of systems so perfect that no one will need to be good." Even if the dream comes true, a perfect system which makes every one virtuous and innocent automatically defeats the very end in view. The end is the development of man. That system is, therefore, good which provides him the opportunity of development through exercise of his free will and initiative of action. This opportunity is the special privilege of man which no system should touch in the name of social good or even in the name of his own good. His highest good being this opportunity, he can

hardly afford to barter it away for any other lesser good. The beauty of a sound system, therefore, lies not in curtailing the initiative of man but in working out a harmony between the individual good and the social good. This it can do by evolving positive and negative techniques. The positive techiques should create favourable conditsons for the spirit of man to grow The negative techniques should control man's anti-social tendencies. Harmony is thus nothing but an operative balance between the positive and negative techniques, or, as Gandhiji called it, the 'golden mean' between individual freedom and social regulation.

Positive techniques :

12. Positive techniques are those that establish the relationship between the society and the individual as between a mother and her children. They are also those which reduce man's struggle for existence and allow him greater scope for higher pursuits. Social security programmes working for Antyodaya by providing equality of opportunities to all in respect of employment, education and health services and the establishment of community centres to facilitate division of labour and regulation of time table of work as also to undertake provision of amenities are two such positive techniques which are being employed in villages in the intensive Areas with good effect. They have considerably reduced tensions in these villages as the poor sections are freed from anxity a bout primary necessities of life. They have provided opportunities to public-spirited individuals to work for their enlightened self interests. An atmosphere of class conflict has been replaced by true co-operation between the better-off sections and the poor sections. The moral tone of the whole village community has gone up and it is rapidly shedding its morbidity. The search for new values of life has begun.

Negative Techniques :

13. Perfecting the social structure generally means perfecting the negative techniques. The guiding consideration or the main purpose of such perfection is the control of anti-social tendencies and activities of man. Usually the line of least resistence is preferred. Man is left with no initiative to do any antisocial mischief. He is thus denied his highest good, no matter what other welfare he is provided through the social system. This is the danger of too much reliance on perfecting social systems. It should be possible for society to keep social regulation to the minimum and give maximum freedom and initiative to man. It should in fact work out the spheres of individual freedom and social regulation. One such device is the division of man's economic activities into private and public sectors. Man should be free to follow his occupation so long as he is self-employed and enjoys the reward of his own labour He has full freedom and initiative in self-employment. He should, however, be denied exclusive benefit in occupations where the labour of many persons is pooled as in trade and industries run by, power, as these afford opportunities of exploitation. Such occupations should be carried on in the public sector. But this public sector is not the same as State activity in which the managerial class is provided by the bureaucracy and workers are employed only as wage earners. It should really be called the co-operative sector which maintains opportunities of self-employment while avoiding the scope of exploitation.

The Oceanic Circle :

14. Such a co-operative sector will hardly be interested in competing with the private sector. While applying this division of private and co-operative sectors at the village level, however, it is found that an isolated village is not in a position to work

out the scheme under the influence of outside factors. It becomes essential, therefore, to enlarge this circle of non-competing private and co-operative sectors to a larger field of operation so as to make the influence of outside factors practically inoperative. This is Gandhiji's oceanic circle. While the division of private and co-operative sectors is a negative technique, the oceanic circle is a projection of both the positive, and negative techniques. The circle establishes a decentralised co-operative economy in place of the competitive pyramid. It works out the rationale of distributing the processing of industries between the home units, the village units and the regional units comprising the circle and brings about harmony between the interests of all three units through the mechanism of price pooling. Being sufficiently larger social structure using power technology where necessary and well-organised from within, such regional circles can be expected to withstand outside forces of competition. It is even possible to work out harmonious relationships between one circle and its surrounding circles. By eliminating competition the eceanic circles thus provide the greatest scope for phased improvement of technology without detriment to the social objectives of employment and equality of opportunities.

The oceanic circle is thus a great technique for converting the static rural economy into a dynamic and expanding economy. It provides wider opportunities of development to rural youths and establishes equality in living standards between the town dwellers and the villagers. By arranging dealings between artisans and consumers through a network of cooperatives, it can eradicate caste prejudices attached to professions and thus facilitate mobility of labour towards a better occupational pattern of the rural economy. Finally, only oceanic circles can protect small democracies. Oceanic circles thus provide an answer to centralisation which is the urgent problem of the age. They establish a balance between

centralisation and disintegration. They provide the advantages of small communities and facilities of large population centres. As Wilfred Wellock observes: "It is in regionalism that man is destined to realise his maximum freedom. Regionalism has indeed become an urgent necessity and indispensable condition of achieving and maintaining individual freedom and human society."

IV

The Major Premise

Decentralised Village Industries :

15. While inaugurating the World Bank and the International Fund Meetings in New Delhi on 6th October, 1958, Pandit Nehru stated the following major premise :

> "The industrial communities of the West and their resources grew while Asian countries actually went backward. The key to material progress today was scientific and technical skill".

Two days later while inaugurating the 'India 1958' Exhibition he expressed the hope that in the pursuit of greater material prosperity through industrialisation India will be able to retain some of the old cultural values that made her weather every storm through the centuries. This expression is, as it were, a corrective to the first and both taken together make one whole idea. In the light of this idea and the analysis of the social structure made earlier a major premise which can take advantage of modern Science and technology and still retain the highest human values can be stated as : Decentralised Village Industries using power wherever necessary.

Technology and Living Standards :

16. As discussed earlier the highest development of man requires that his struggle for existence is reduced. A properly organised society helps in reducing this struggle. Higher technology can do it still better. Such technology also raises living standards. It is sometimes argued that living standards are limited ultimately by the supply of raw materials and while technology can speed up the conversion of raw materials into finished products it cannot add to the total quantity of raw materials and as such cannot in effect raise the standards. The argument, however, does not bear scrutiny. Two things constitute living standards, primary necessities of life and amenities of life. The first is limited mainly by raw materials but evidently technology plays its part in increasing the production of raw materials. Irrigation pumps directly increase raw material. Better amenities of life also provide incentives for higher production. Both speed and high machanical power are often essential for the provision of better amenities. Pucca roads and drainage systems covering long distances are not possible without these. In some tracts water and fuel supply place a heavy demand on man's time and energy. Technology can improve this situation. Certain industrial processes are possible only with higher technology. Technology thus raises raw materials production and amenities of life as well as industrial productivity. In other words, it raises living standards.

Technology and Dignity of Labour :

17. It is necessary to press higher technology into service also for raising the dignity of labour. This dignity springs from several sources. One source is the dignified person who does work with the scientific knowledge and, therefore, draws adequate reward from it in the form of intellectual and aesthetic development. The other source is social recognition of the value of the work done.

This depends on the manner in which it is done. A doctor's handling of man's urine and stools for examination is highly appreciated while a scavenger handling the same material in a crude way is always depreciated. The third source is the physical reward that society gives in lieu of the work done depending on productivity. The fourth source is self-employment where the worker is not a mere wage-earner but his own master. It cannot be denied that technology is very helpful in all these four respects. Dignity of labour thus does not depend merely on the attitude of the person doing work but also on the methods and the tools he uses in doing it. Far from reducing the dignity of labour higher technology should be looked upon as promoting it by providing proper aids and, therefore, worth utilising. In America higher technology has helped aristocratic housewives to wash clothes and clean utensils with a sense of dignity. It can serve the same purpose in our country where middle class housewives, particularly in cities, depend on domestic servants for washing clothes, cleaning utensils and even for cooking. Higher technology can similarly raise the social status of scavengers and chamars by introducing clean methods of doing work in their occupations.

Higher technology becomes essential if man is to be assured minimum income required for minimum standard of living. This depends on the level of productivity in which technology plays a very important part. Higher technology, in short, seems to be indispensable for providing the worker a minimum standard of living, a rational time table of work and the dignity of his occupation. Higher technology can thus enable educated youth to take to decentralised village industries who would then contribute their mite to developing the organisation of these industries. Being mainly the concern of poor women and the resourceless labour class they languish to-day for lack of such powerful support.

Technology and Employment :

18. While the above approach is appreciated, many workers are afraid of the unfavourable effect of such technology on the employment situation in the country, particularly in villages. It is necessary, however, to consider the question of employment not in terms of the present static economy but the expanding economy of the villages. The expansion of the economy implies larger demand for goods and services and, therefore, greater employment potential. Local processing of raw materials in the villages replacing imports of finished goods also raises the employment potential. It will be rewarding, therefore, to undertake experimentation in the Intensive Areas with the object of absorbing higher technology consistent with the accepted social objectives. Such experimentation will be very helpful in evolving a self-protected economy in place of a centrally protected economy. The former represents Sarvodaya more than the latter.

Need to Study Objective Conditions of Village :

19. The question is still raised as to whether higher technology can be introduced without detriment to the over-riding social objective of full employment, and since the better is the enemy of the good, good is adhered to. Rather than the good conditioning thinking, however, the better should point to the necessity of exploring all possible ways and means of raising productivity. The question needs to be studied in the objective conditions of our villages, rather than from a theoretical point of view. Usually the employment potential of two sets of techniques is discussed. For example, the employment potential in the various processes of khadi is compared to that in the mill processes and obvious conclusions are drawn from this comparison. But itemwise employment potential is hardly the proper approach for solving the problem of

unemployment in the villages. For that, the evolution of the occupational pattern of the rural economy becomes central. It is only under such an overall occupational pattern that full and balanced utilisation of manpower can be envisaged. The Intensive Area Scheme has been carrying on investigations in this direction for the last four years. Village plans have been prepared and implemented from this point of view. Further investigation continues. But the limited experience gained so far suggests that some of the apprehensions of unemployment resulting from the introduction of higher techniques may not prove true. Higher techniuqes are not the only factor that reduces manpower utilisation. Another factor which equally contributes to the reduction of employment opportunities is low consumption. There is scope for higher techniques through increased consumption.

Employment Position of the Region:

20. The present regional plan of development is being formulated for a lakh of population comprising 250 villages of five contiguous Intensive Areas in the Moradabad District The data collected through survey present a very broad picture of the employment position The position of working force of males and females against a total population that will grow upto 1971 is given below:

TABLE 1

Estimated Manpower Available in 1971

Estimated Population in		Working force (16—55 years)			Man days Available (000)		
1961	1971	Men	Women	Total	Men	Women	Total
1	2	3	4	5	6	7	8
107.350	117,080	35,360	27,660	63,020	10,608	1,900*	12,508

*Estimated on the basis of labour required for animal husbandry.

TABLE 2

Estimated Manpower Requirements in 1971

(000 Man-days)

Man-days available	Requirements in 1971					
	Agriculture	Animal husbandry	Village industries	Housing	Total	Shortfall
1	2	3	4	5	6	7
12,508	8,848	1,900	3,301	545	14,594	2,586

TABLE 3

Employment in Major Village Industries (1971)

S. No.	Name of the industry	Name of process/Unit	Employment in 1971 (in man-days)	
			Employment in the process	Total employment in the industry
1	2	3	4	5
1.	Gur, Khandsari industry	Khandsari-making in power units;	1,00,000	
		Gur making in bullock-driven units	4,00,000	5,00,000
2.	Khadi	Carding on Pedal		
		Carding machine	66,000	
		Sliver-making	12,00,000	
		Spinning	79,000	
		Weaving	4,76,000	

	Calendering	72,000	
	Dyeing & Printing	45,000	26,43,000
3. Leather industry	Flaying	6,000	
	Tanning	6,000	
	Shoe-making	50.000	62,000
4. Village oi l industry		90 000	
	Oil pressing		90.000
Grand Total		—	33,01,000

21. Experience shows that the bulk of the working force will be absorbed in intensified agriculture, although manpower requirements are calculated on the basis of rationaiised agriculture. While rationalisation will reduce manpower requirements intensification will raise absorption. A six-hour time table for a day is not taken into account as the seasonal requirements of agriculture do not admit of it. This time table is, however, taken as the basis while considering women's functions. Taking six hours of work per day the women working force is absorbed in household duties and animal husbandry. The total manpower required in 1971 for a production programme of intensive and rationalised agriculture and 30 yards of cloth per capita with some improvement in housing conditions comes to 14.6 million mandays of six hours each. This takes into account only a few village industries, such as Khadi, oil, leather, gur khandsari, housing etc. To this must be added the requirements of personal for social services as also other industries. As against this total requirement the manpower available comes to 12.5 million. This is a picture which can be envisaged on the basis of higher consumption and reduced working hours. The gap in the available manpower indicates the scope for raising techniques or the use of power in them. If we bring cane crushing, carding, slivering and calendering into the groups of processes where power is used, this will reduce manpower

requirements by about 1.5 million mandays. It is evident that even the use of power in these processes does not create any unemployment; nay, it still leaves a gap in available manpower. Even though these are not to be taken as accurate statistics they are nonetheless good indicators of the broad situations pointing out the need and desirability of using power with discretion in the processes of village industries with a view to raising productivity and incomes of workers.

Present Position:

22. At present, mechanical power is used in the following processes of khadi and village industries:

(1) Khadi
   (a) Ginning (b) Wool Carding (c) Calendering
   (d) Dyeing (e) Manufacture of equipment

(2) Pulp making in paper
(3) Fibre extraction
(4) High power kilns in pottery
(5) Tanning Chrome leather.

23. The consideration that has governed the introduction of power in these processes has been mainly technical. Wool carding with power has been adopted for health reasons. These, therefore, provide two criteria. Along with these some broad principles for the introduction of power into the processes of khadi and village industries may be indicated below:—

Principles for the Introduction of Power:

(1) **Technical Reasons**

Ensuring the minimum quality and efficiency of production. Under this head the use of power should obvi-

ously be extended to sugarcane crushing and khandsari manufacture and to pressing of non-edible oilseeds whose cake is to be used only as manure.

(2) **Health Grounds**

Disposal of carcasses and processes of leather tanning.

(3) **No displacement of existing employment**

Existing employment should be distinguished from the employment potential in a particular process. Khadi is an existing industry only to a very limited extent. For all practical purposes development of Khadi will provide new employment. Carding and sliver-making for cotton khadi should be considered for introduction of power under this head.

(4) **Employment Potential**

The scope of employment should be viewed not as an isolated item but against the background of an occupational pattern of the village economy. It should also be viewed against the background of higher consumption standards and rational time table of work.

(5) **Pattern of Organisation**

Introduction of power in Khadi and Village industries should not lead to exploitation by the resourceful. The managerial personnel should be provided by the backward sections of the village community. One region should not exploit another region.

(6) **Experiments**

In selected intensive areas experiments should be carried out along lines indicated above to evolve suitable formulae for implementing Gandhiji's idea of the Oceanic Circle .

V

Back ground of the Regional Plan

Harmonious Atmosphere :

24. The Dhanaura Regional plan is formulated after a sufficiently long preparatory period. The Intensive Area Scheme has been in operation for some five years in 3 of the 5 contiguous Areas forming the region. The other two Areas have worked the Scheme for two years but have profited from the experience of the three Areas and made up the shortage of time with the assistance of the three Areas and on the strength of local leadership. In fact all the five Areas are very fortunate in having local leaders of high integrity and calibre who are devoting their whole time to implementing the Intensive Area Scheme with a missionary zeal. Shri Munideo, Shri Baburam Tyagi, Chaudhari Mahendra Singh and Munshi Ramjash are local leaders of sterling qualities moving among the people as inspiring figures. They were not constructive workers by training or experience but they are the natural leaders of the people wielding considerable influence over them. Coming from the upper strata of society they are converted to the programme of Antyodaya which is the fundamental basis of the Scheme. Their conversion has set a pattern to other better off sections in the region to follow. This has eliminated the chances of conflict between the workers and the vested interests. The approach of the Scheme aiming at Antyodaya based primarily on devolopment has also contributed to the fostering of such a happy atmosphere. That the leadars and most of the workers engaged in the Scheme

are local has made a big impact on the population. Being more practical-minded and resourceful than workers coming from urban areas, the local workers have succeeded in mobilising public opinion in favour of the Scheme and in persuading a number of villages to implement the Scheme. Village plans have been prepared and implemented at least for one village in each of the five Areas of the Region. Kamelpur village has implemented two annual plans and has prepared the third year plan. This has its impact on other villages of the Areas which now realise the potentialities of the Scheme for their self-development.

Village Plans Develop Initiative :

25. Village plans have provided opportunities to villagers to develop their initiative. Through the process adopted in the preparation of village plans they 'know themselves'. A house-to–house survey gives them a picture of their total resources, the gaps in their consumption patterns and their idle resources. It enables them to prepare programmes for filling in these gaps mainly on the basis of utilisation of idle resources. As programmes are formulated to rehabilitate every family in the village, all families become intensely activised. Village plans thus become really intensive. They give to the people the knowledge of their present position. They show them the method of improving it by teaching them to substitute organisation for finance. Their appeal is direct, since they induce people to produce more for raising consumption. Since programmes are formulated for every family and for the village as a whole, village plans constitute a creative and co-operative effort on the part of the village people. Initiative is thus developed by raising aspirations and showing the method and the means of fulfilling these aspirations.

Village plans Integrate Village Economy :

26. In the process of preparing and implementing village plans the cross sections of the village population begin to appreciate the inter-dependence of interests of the different sectors of the village economy. The farmers realise the importance of village industries as capable of giving them the power to fix prices of their produce on the strangth of local self sufficiency. They also realise that village industries can retain educated youths in the village by affording them opportunities of gainful occupation. They further realise that by adding to the total wealth of the village through greater production and through a favourable balance of trade, village industries reduce the drain on their income caused by the swelling ranks of the unemployed. This reduces the internal conflicts of the village. Village plans thus work for the integretion of the village economy. They also help in evolving a balanced occupational pattern for the village, and a rough crop pattern so as to provide the requirements of balanced diet and raw materials for industries.

Village Plans Train People for Gramraj :

27. Village plans train village people in other directions too. They initiate them into the habit of thinking and group action. If this habit develops over a period of years, the villagers can establish a link with the rest of the world, through the medium of their knowledge. They can become receivers of the advancement of knowledge in every activity of life just as radio receivers in the remotest corners catch waves passing across the world. They then need not feel left out in life without contacts with urban areas. In the initial stages also some public-spirited individuals in the village are encouraged to work for their enlightened self-interest. Village plans also stop the drift of values and provide villagers a sense of self-direction. Village plans provide the best training for Gramraj

Village plans thus act as great instruments for the economic, intellectual, political and moral development of the village people.

28. Being so fruitful, village plans will continue to be prepared so as to cover as many villages as possible and to develop new aspects such as rational time table of work. But just as village plans inspire individual families, the regional plan is bound to inspire individual villages through an imposing picture of targets of achievement and instatutional framework. Village plans have in fact projected the expectations of the workers for a regional plan. Two significant projects have also created the climate for the regional plan. The Khadgujar Area has brought a private cane-crusher into the public sector. The health scheme with a central well-equipped hospital, organised with local resources, at Dhanaura and dispensaries in each one of the three Areas which are a little away from Dhanaura has had a very powerful impact on the minds of the people. Both have proved to be the precursors of the regional plan. The health scheme has already presented itself as part of the regional plan.

Private crusher brought into the public sector :

29. True to his conversion, Chaudhari Mahendra Singh handed over last year his own cane-crusher at a nominal rent to be managed and operated by the Kshetra Samiti of the Khadgujar Area. The benefits of such a step to the farmers of the Area are so evident that the rest of the farmers of the region are seized of the idea of bringing into being cane-crushers under the public sector. In the whole region there are about 18 cane crushers working under the private sector. There is scope for some 25 or more crushers in the region which the Kshetra Samitis are thinking of putting up under the public or the co-operative sector. Unfortunately 4 or 5 bad successive seasons have left the farmers with no savings to be

invested in such projects. The execution of the idea is, therefore, bound to be slow. In the meanwhile the Khadgujar cane crusher is doing its educative work and consolidating the psychological gains it has made so far. The bringing of the private cane crusher in the public sector at Khadgujar has thus a significance far greater than the immediate benefits to the farmers of the Area. It shows the way and the techniques of converting private factories into public undertakings. The process started by a public-spirited individual acts as a catalytic agent in starting the process of public education. Organisation of this opinion completes the process. This one instance has thus opened the way towards the establishment of the Oceanic Circle based on decentralised co-operative economy.

The Regional Plan:

30. The present plan represents its first stage, covering mainly programmes of village industries and housing and the health scheme. It is intended to take up education at the second stage of the plan. In agriculture and animal husbandry kitchen gardening and dairying on individual basis will be encouraged during the first stage and agricultural development schemes involving drainage, co-operative farming etc., will be taken up at the second stage. Even among village industries only those have been included whose base has been established. These industries are khadi (cotton and woollen), leather, oil and soap, gur & khandsari and pottery. Under the regional plan an attempt has been made to distribute industrial processes and activities under the home, the village, the area and the regional units as follows:—

Allocation of processes/activities for different Units

	Industry/ Activity	Process	Home Unit	Village Unit	Area Unit	Regional Unit
1,	Khadi	Spinning	Spinning	...	...	...
		Carding				
		Slivering	...	Carding	...	...
		Weaving	Weaving	Warping and Sizing	...	...
		Dyeing & Printing	...	...	Plain yarn & cloth dyeing	Artistic dyeing and printing
		Washing & Calendering	...	...	Washing	Calendering
		Sales, Stocking Cotton	...	...	Internal Sales	External Sales, Stocking cotton
2.	Leathar	Flaying & Carcass recovery	...	Flaying	Flaying & Carceass recovery	...
		Tanning	...	...	...	Tanning

Industry	Process	Home Unit	Village Unit	Area Unit	Regional Unit
	Leather manufacture	Leather goods making	...	...	
	Stocking hides & raw materials	—	...	...	Stocking hides, raw materials
	Sales	...	...	Internal Sales	External sales,
3- Pottery	Bricks & tiles making	...	...	Bricks & tiles making	...
	Pots	...	Pots	...	Glazed wares
4. Gur & Khandsari	Crushing	Bullock Crusher for gur & rab making	...	Power Crusher for khandsari	...
5. Oil	Crushing	Crushing	Sale	...	Stocking oil seeds
6. Soap making	Crushing & Soap making	...	Crushing	Internal sale	Soap making, External sales, stocking oilseeds & raw materials

	Industry	Process	Home Unit	Village Unit	Area Unit	Regional Unit
7.	Carpentry & Smithy	Agri. implements	Agri. implements	...	...	...
		Village Industries equipment	...	Repairs & servicing	Charkhas	Chanis cane crushers, carding machines & iron parts of charkha
		House Building material	...	Joining	Fabrication	Sawying timber
		Small workshop	...	...	Small workshop	...
		Foundry-cum-workshop	...	...	...	Foundry-cum-workshop
8.	Health	Health Dispensary	...	Health Visitor /midwife	Dispensary	Hospital

The formulation of the Regional Plan presented here involved the labour of a team of workers for some weeks. Sample surveys were carried out regarding consumption and production and development plans for some individual industries and services were prepared in accordance with resources and requirements of the Region. My thanks are due to these workers and in particular to my colleagues Shri Viswanathan Tekumalla, Shri Manubhai Patel and Shri M.B. Dixit who have collected the data and put it in proper form.

DEVELOPMENT PLAN

1959-60

PRELIMINARY

METHOD OF SURVEY AND PLANNING

The work relating to the survey and planning of the Dhanaura Region was taken up in July 1958. On July 8, a formal meeting of some of the local leaders of the several Areas in the Region and the planning unit of the Intensive Area Office was held at New Delhi to discuss the procedural details of the work. Increased employment opportunities and increased production for increase in consumption being the chief objectives of the Regional Plan, it was decided to assess the total resources and requirements of the Region as the basis of the Plan. Besides the general data available regarding human, animal and land resources, specific data on the present pattern of consumption and production were sought to be collected by means of a sample survey. Primary importance was to be given to the consumption and production of goods coming under both the mill and village industries sectors.

The survey was to be in two parts— consumption and production. Suitable proformae were designed separately for them. Consumption was to cover food materials and consumer goods like cloth, leather and fibre products, pottery, soap, etc. and amenities like housing and health; while production was to cover procurement of raw materials, equipment, production of goods, earnings of artisans, etc in respect of local industries.

The random sample was taken separately for both surveys: For consumption survey a sample of roughly 15 percent of the villages and about 6 percent of the families in the selected villages was taken; while for the production survey a 10 percent sample in each village industry was taken except in hand spinning and leather tanning where about 6 percent only was practically possible.

In all about 350 families for consumption and 377 families for production were covered by the survey as set out in the Table below.

Table—Details of Samples taken

Area	Villages	Families	Population	Consumption			Production		
				Villages selected	Families selected	Population of sleected families	Villages Selected	Families selected	Population of selected families
1. Dhanaura	34	3179	15610	5	60	352	5	54	289
2. Kamelpur	43	2919	26400	9	90	506	9	114	655
3 Deengra	40	4982	17463	7	65	361	7	84	532
4. Khadgujar	47	2540	18961	9	60	432	9	54	300
5. Karaundi	56	3461	20768	8	75	541	8	71	413
Total	220	17081	99202	38	350	2192	38	377	2189

The actual surveys were carried out in the villages during July–August 1958. About 35 persons— local leaders as well as other workers—were engaged in the work. In view of the special importance of the cloth industry to the Region, a test survey of cloth consumption was carried out in 100 families to check the data of the main consumption survey. The data were compiled and discussed by the planners and on the basis of the survey, the Regional Plan has been formulated. In view of the comprehensive nature and size of the Regional Plan, a two stage plan of development has been considered desirable. During the first year, provision of amenities like housing and health and development of village industries like Khadi, Gur and Khandsari, Leather work, oil pressing and fibre etc will be taken up while other amenities like education and social security and other village industries will be developed during the second year. The plan for the first year is presented in this book and is to be implemented during July 1959 to June. 1960.

Considerable care has been taken to obtain from the villagers fairly reliable data. Two factors, viz., the inadequate field experience of the local workers in investigation and the habit of the villagers to furnish information from memory and experience in the absence of records and books, are however, likely to affect the precision of the data collected. But as pointers to trendes the data are generally reliable.

CHAPTER ONE

ECONOMIC & SOCIAL BACKGROUND

1. The Dhanaura Region

Location: The Dhanaura Region is a compact block of five Intensive Areas situated in the Moradabad district at the North-west end of Uttar Pradesh, between 78° and 78° 27′ E; 28° 50′ and 29° 50′ N. Roughly rhombic in shape, it extends around its chief town, Dhanaura, to about 12 miles at its farthest corners and about 7 miles at their nearest corners (Map). Though only about fifty miles and from the Himalayan ranges, the Region has no hills or forests but a plain tilting southward from its northern boundary district of Bijnor and westward from its eastern boundary taluk of Amroha.

Communications: The Region is connected with the surrounding territory by two railway lines branching from Gajroula Junction towards Moradabad and Najibabad and two metalled roads. Several villages are connected with fair-weather roads; but communications are generally inadequate and most of the villages become inaccessible during monsoon. One important event of recent origin in the Region is the advent of electricity to several villages through which overhead lines are laid.

Intensive areas in the Region: Five Intensive areas form this Region—Dhanaura, Kamelpur, Deengra, Khadgujar and Karaundi. The original Dhanaura area organised in 1954-55 was trifurcated the next year and, with the addition of some adjacent villages,

reconstituted into Dhanaura, Kamelpur and Deengra areas. Khadgujar and Karaundi, originally set up as pre-intensive areas in 1956–57, were converted into full intensive areas in 1957-58.

Historical Background: The historical background of the Region was very eventful. Like several other parts of U. P., the Region also had numerous petty Zamindaris, holding altogether the bulk of the land in the Region. Under them the cultivators who were in virtual serfdom suffered great hardship. The advent of Independance and the abolition of Zamindari thereafter helped raise the status of many of the poor peasants to one of self-employmenl and economic freedom.

Physical Conditions

Rainfall and Climate: Normally the Region has moderate rainfall averaging at 40 inches per year which is good and adequate for all crops. The bulk of the rain is obtained between the last week of June and the end of September while the balance of about 20 percent is found during the winter months of January and February. Rain during the other months is normally nil or negligible. But during recent years the rainfall in the Region has changed in periodicity and volume due to factors yet to be determined. For while between 1946-47 and 1954-55, the rainfall gradually declined from about 41 inches to about 26 inches, 1948-49 being an exception with about 50 inches rain (Appendix I), there has been excessive rain between 1955-56 and 1958-59, the quantum ranging between 60 and 80 inches. And what is worse, there has been unwanted and heavy rain during October and November when Kharif is to be cut and preparation of soil for Rabi is to be made.

Like other parts of Northern India, the Dhanaura Region also is subject to extreme climatic conditions. Summer is extremely hot with temperature touching 112° to 115° F. in June and winter cold with mercury falling to about 40° F. in mid-January.

Water Drainage: Mention has been made of the undulating nature of the land surface of the Region. The land level ranging between 710 ft to 740 ft on the Chandpur—Bijnor and Amroha sides gradually falls to about 645 ft towards Hasanpur. (Sketch showing water courses)

On the west where the Ganges borders the district, the river bank rising to some 50 ft above river-bed forms a natural barrier to the flow of rain water of the Region in to the river. Consequently a number of natural water courses were formed across the Region to drain rain water towards the south. While rainfall was moderate and the water courses drained off the water, the Region was not seriously handicapped by water-logging. But during recent years several fields which were on the water courses were raised for cultivation ; and several roads, though only fair weather ones, were laid across the beds of these water courses. The changes on the land surface, together with the excessive nature of the rains, and continuous floods occuring during the last five years have made water-logging a serious problem of the entire Region which only a proper drainage system on regional or even district basis undertaken at Government level can solve.

Soil: Being part of the vast Gangetic plain, the Region has generally alluvial soil. In detail of texture, however, the soil comprises three types: About 35 percent of the area is loamy (**dumad**) with half sand and half clay; about 30 percent is sandy soil (**bhur**) except in Khadgujar and Karaundi strip; while the rest is clay (**dakra**). The soil of the Region is generally loose and moisture-resistant and therefore good for crops like bajra, jowar etc. Occasionally, however, gusts of wind during summer and winter raise sand storms and affect patches of land rather badly.

2. Its People

There are 264 revenue villages in the Dhanaura Region of which 220 are inhabited by a population of about one lakh, Kamelpur Area accounting for over a quarter of the total population as set out in Table 1. The average size of the family ranges

Table 1—Population of the Region

Area	villages		Population		
	In revenue records	Inhabited	Families	Persons	Average size of family
1. Dhanaura	37	34	3179	15,610	4.9
2. Kamelpur	62	43	2919	26,400	9.0
3. Deengra	49	40	4982	17,463	3.5
4. Khadgujar	60	47	2540	18,961	7·5
5. Karaundi	56	56	3461	20,768	6 0
Total	264	220	17,081	99,202	5.8

between 9 in Kamelpur and 3.5 in Deengra, the average for the Region being 5.8 persons. Most of the families in the Region are joint families.

Details of the sex- and age-wise distribution of the entire population is not available but the survery sample of 350 families consisting of 2192 persons indicates that the distribution is as given in Table 2.

Table 2—Distribution of Population by sex and age (Sample Survey)

Name of the Centre	1 to 7 years		8 to 15 years		16 to 55 years		above 55 years		Total Male	Total Female	Total Population
	Males	fem.	Males	fem.	Males	fem.	Males	years			
1. Dhanaura	36	41	37	26	105	97	8	2	186	166	352
9. Deengra	33	34	32	39	104	85	20	14	189	172	361
3. Karaundi	84	50	51	38	157	124	16	21	308	233	541
4. Kamelpur	49	68	40	59	128	128	19	15	236	270	506
5. Khadgujar	60	45	42	38	113	91	24	19	239	193	432
Total	262	238	202	200	607	525	87	71	1158	1034	2192

It is seen from the survey that the number of able-bodied persons of the age-group 16 to 55 is just a little over half the population.

Social Conditions

Hereditary Groups: The population of the Region is predominantly Hindu, the proportion of Muslims and other communities being rather small. For instance, of 153 families in Peli village in Deengra Area, 145 are Hindu and 8 Muslim. Among the Hindus there are several communities such as Tyagis, Ahirs Jats, Chauhans, Gujars and Harijans. A certain hierarchy is traditionally maintained among the various communities and birth often determines the occupation. On the highest rung of this ladder are Brahmans, Tyagis, goldsmiths, etc who try to maintain Zamindari traditions and social superiority. Next comes the artisan group consisting in telis, carpenters, carders, etc. Kahars, Chamars and Balmiks (sweepers) form the third tier of the hierarchy.

Tyagis, Ahirs, Jats, Chauhans, Gujars and many of the converted Muslims are generally the landowning classes; while village services are pursued by some Brahmans (as priests, water-suppliers, etc.), dhobis and carpenters. Agricultural labour is done mostly by Jats, chamars, etc. One peculiar feature of the Region is that generally people of one predominant land-owning community inhabit one village along with some artisans and labour classes. Caste prejudices have often prevented mobility of labour and to some extent impaired village solidarity.

Position of Women

Generally there is segregation of women. **Purdah** is prevalent, particularly among the higher castes and women have special apartments, their field of activity being house-keeping apart from

a little spinning done at times. Women of the working cesslss have considerable freedom of movement and some of them work even on fields. Culturally, however, all women are highly conservative. Though they visit **melas** or go on pilgrimage occasionally they participate little in village activities like meetings and **bhajans** and have little scope for self-expression.

Education

Literacy is low in the Region. Table 3 shows that of some 2183 persons covered by the survey, about 1830 persons (84 percent), a majority of them women, are illiterate while among the 350 literates, about 220 are educated upto the primary class level and only 12 entered the University. Education among women is too low, covering only 6 percent of the female population. Age-wise literacy is found mostly among the groups below 25 years of age, roughly 75 percent being among children of 7 to 15. The need for educating children is being appreciated by the people, though slowly, and a number of primary and junior schools and an Intermediate College (at Dhanaura) are meeting the growing need.

Table 3—Literacy in the Region (Persons)

Centre	Illiterate		Primary		Middle		H. School		Above H. S.		Total		Technical		Total Tech.
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
1. Dhanaura	94	131	54	30	12	...	15	2	4	1	179	169	8	1	9
2. Deengra	141	168	29	4	14	...	3	...	2	...	189	172	...	...	...
3. Karaundi	231	230	35	3	27	4	10	...	1	...	304	237	...	...	...
4. Kamelpur	213	270	17	...	4	...	2	...	...	...	236	270	...	...	...
5. Khadgujar	175	178	33	12	20	2	7	...	4	1	239	193	3	...	3
Total	354	977	168	49	77	6	37	2	11	2	1147	1036	11	1	12

Working Force.

The sample survey shows that of 2192 persons, some 1132 (51.7 percent) i. e. 607 men and 535 women of 15 to 55 years of age constitute the labour force. Details of the actual working force are not available, but generally, while a few men and women of 15 to 55 years do not work due to sickness, opulence or other reasons, a number of children of 10 to 15 years and old persons above 55 years actually work for economic reasons. The working force may, therefore, be fairly large. Data available for village Peli in the Deengra Area show that the local working force constituted about 68 percent of the population, 576 persons out of 852 of whom 107 were children and 36 old persons and 433 other adults.

General Occupational Distribution

Agriculture is the main occupation of the people, while other occupations consist in village industries, services, etc. A fairly large percentage of the people pursue subsidairy occupations also to supplement their family income. The sample survey data presented in the Table 4 indicate the general trends of occupational distribution. Of 350 families some 228 families (66 percent) were primarily agricultural and 33 families (9 percent) were mainly engaged in village industries. About one-third of the families surveyed had some subsidiary occupations like farming, farm labour and village industries as a source of supplementary income.

Table 4—Occupational Pattern (Main & Subsidiary) (Sample Survey)

Centre	Main Occupation						Subsidiary Occupation					
	Agri-culture	gr. Lab-our	V. I. Arti-san	Ser-vice	Oth-ers	Total	Agr.	Agr. lab-our	V. I. Arti-san	Ser-vices	Others	Total
1. Dhanaura	16	3	6	5	30	60	6	2	4	...	16	28
2. Deengra	48	6	8	...	3	65	2	8	6	1	3	20
3. Karaundi	62	1	7	5	...	75	4	2	7	9	12	34
4. Kamelpur	52	4	9	4	21	90	4	4	2	...	4	14
5. Khadgujar	50	4	3	3	...	60	3	7	7	5	2	24
	228	18	33	17	54	350	19	23	26	15	37	120

Land and Agriculture

Land Classification

According to local **patwari** records, the Dhanaura Region has an area of about 1.08 lakh acres of which about 0.86 lakh acres are cultivated area and the rest gardens and waste land. (Table 5)

Table 5—Land Classification (acres)

Item	Dhanaura	Kamel-pur	Deengra	Khad-gujar	Kar-aundi	Total
1. Cultivated land:	11,225	22,681	16,184	16,150	19,464	85,704
i. Irrigated	2,274	2,142	3,593	2,008	8,160	18,177
ii. Unirri-gated	8,951	20,539	12,591	14,142	11,304	67,527
2. Waste:						
i. Cultur-able	187	3,347	292	255	699	4,780
ii. Uncul-turable	895	2,391	894	1,088	1,263	6,531
3. Gardens, Orchards	201	544	282	253	150	1,430
4. Others	844	6,798	788	752	870	10,052
Total	13,352	35,761	18,440	18,528	22,446	1,08,527

Kamelpur area alone accounts for about a third of the total area. Of the cultivated area less than 20 percent is irrigated and the balance unirrigated, while of the culturable waste of 4780 acres 75 percent is situated in Kamelpur area alone. There are no pastures in the Region Scope for land improvement lies in the provision of more irrigation facilities and reclamation of the culturable wastes, particularly in Kamelpur Area.

Land Distribution

Due to pressure of population, the per capita availability of cultivated land in the Region is small, being only about 0.84 acre. Data on the distribution of land among the population are not available for the Region; but the results of some local village surveys are significant. In Peli village of 153 families only 107 families (61 percent) own land, 44 of them owning less than 10 acres per family. Some 46 families (39 percent) are landless, particularly Jatava and Balmiks. Considering that 10 acres make an economic holding in the Region, some 90 families (60 percent of the village Peli) are sub-marginal in the farming occupation.

Crop Pattern

As mentioned already, the soil of Dhanaura Region suits the growth of all kinds of crops. Generally two crops are raised—the kharif and the Rabi; but in summer a small acreage is covered with crops. The Kharif crop which is mainly dependent on the monsoon (June to September) consists in paddy, bajra, jowar and maize under cereals, and moong, urd, etc. under pulses. Sugar cane is largely cultivated as Kharif crop. During Rabi, cereals like wheat and barley and pulses like peas and gram are grown. Fruit and vegetables are grown to some extent during both seasons. Groundnut, cotton, fodder, etc. also cover a sizeable portion of the land.

Table 6 explains that normally about 57,000 acres are covered during Kharif and 48,000 during Rabi seasons, the bulk of the area being covered with cereals, sugar cane and oilseeds.

Cereals and pulses, sugar cane and oilseeds are the back bone of the entire agricultural economy of the Region. Dhanaura Region is essentially a food producing tract with a surplus of production over standard requirements. About 41 percent of the Kharif

area and 97 percent of Rabi area are covered with cereals and pulses alone. Next in importance comes sugar cane which covers about 21 percent of the Kharif area. The value of this crop consists not only in its being a commercial crop but in its special virtue of flood resistance, The entire Region has experienced, particularly during four or five years past, water-logged conditions and flooding of large tracts. While other crops like cereals and pulses were badly damaged by these soil conditions, sugar cane has withstood damage and saved the farmers. Hence its increasing importance and popularity. The third important sector of agricultural production is oilseeds covering about 20 percent of the Kharif area. Groundnut and mustard are the two chief oilseed crops but due to commercial importance groundnut covers the bulk of the oilseed aereage.

Most of the crops are raised largely on unirrigated land, only sugar cane being an irrigated crop. Irrigation is still a problem of the Region. Even the tube wells available at some places, present to farmers various difficulties in the matter of obtaining an adequate and regular supply of water for the crops. In respect of the agricultural practices, there has been some improvement due tov arious factors like the efforts of the Intensive Area Scheme and development of co-operative movement. Improved strains of sugar cane, wheat and peas are used, while some manuring is done by the green manure, fertilisers and compost. A large ground is yet to be covered by agriculture in these respects.

Table 6—Crop Pattern of the Region (Acres)

Area	Irrigated / Unirrigated	Kharif: Cereals Pulses	Fruit Veget.	Sugar-cane	Oil seeds	Cotton	others *	Total	Rabi: Cereals	Pulses	Fruits veget.	Others	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Dhanaura														
	Irrigated	231	...	78	1229	...	11	2	1·541	1443	232	280	54	2009
	Unirrigated	1352	250	8	20	2110	12	1155	4·907	2970	506	218	30	3724
	Total 1	1583	250	86	1239	2110	23	1157	6,448	4413	738	498	84	5733
2. Kamelpur														
	Irrigated	44	...	...	1451	...	9	4	1508	1624	62	87	40	1813
	Unirrigated	8118	568	...	553	2948	45	1762	13994	10713	835	125	46	11719
	Total 2	8162	568	...	2004	2948	54	1766	15502	12337	897	212	86	13532
3. Deengra														
	Irrigated	8	1	2	2229	...	1	2	2243	2854	266	91	99	3310
	Unirrigated	2816	1298	6	187	1394	69	2008	7778	3755	1027	59	64	4905
	Total 3	2824	1299	8	2416	1394	70	2010	10021	6609	1293	150	163	8215

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
4. Khadgujar														
	Irrigated	28	...	9	2101	...	14	11	2163	1246	258	47	60	1611
	Unirrigated	3259	375	...	347	3394	43	1672	9090	5874	1215	73	41	7203
	Total 4	3287	375	9	2448	3394	57	1683	11253	7120	1473	120	101	8814
5. Karaundi														
	Irrigated	40	...	8	3654	...	5	2	3679	2691	330	35	239	3295
	Unirrigated	3886	1212	17	363	1214	74	2964	9730	5931	2460	185	261	8837
	Total 5	3926	1212	25	3987	1214	79	2966	13409	8622	2790	220	500	12132
Total 1-5														
	Irrigated	351	1	97	10624	...	40	21	11134	9858	1148	540	492	12038
	Unirrigated	19431	3703	31	1470	11060	243	9561	45499	29243	6043	660	442	36388
Grand Total		19782	3704	128	12094	11060	283	9582	56633	39101	7191	1200	934	48426

* Green fodder etc.

Problems of Agriculture

Two serious problems have been limiting the progress of agriculture in the Region :

1. **Water logging** : water logging and floods have become an increasingly serious threat to crops. Occuring first when the Kharif is to be cut and Rabi is to be sown, these aquatic disturbances damage the Kharif and delay Rabi sowing and bring loss to the farmers in both crops. This condition can be tackled only by improving the drainage of the Region.

2. **Lack of technical training** : Farming is carried on largely on traditional pattern by the peasants. It is still a gamble with Nature and not a scientific process. Though agricultural science bearing on soils. pest control, flood control, improved strains, improved methods like Japanese method of paddy cultivation and dibbling method of wheat sowing, composting, etc. has rapidly progressed, this new knowledge has not yet reached the farmers and imbued them with a new spirit of scientific farming.

To popularise this new knowledge, there is need for a band of workers trained in this science. These youngmen should be trained under rural education scheme with an agricultural bias. An agricultural school with a farm attached which may form the nucleus of a polytechnic and may eventually grow into a rural university will go a long way towards imparting the new knowledge of science to the peasant.

Animal Husbandry

The cattle population of Dhanaura Region is fairly large being 59,246 cattle, 3145 goats and sheep and 970 other animals as detailed in Table 7. Considering the extent of land available

Table 7—Cattle Population of Dhanaura Region

Area	Bulls	Unservic-eable bul-locks	Bull-ocks	Milch cattle	1 year cow calves	3 year cow calves	She Buff-aloes	Buff-alo calves	He buff-aloes	Sh-eep	Go-ats	Don-keys	Horses	Others (Pigs, camels etc.)
1. Kamelpur	10	139	7192	4517	2951	2531	2188	2221	226	474	799	135	62	62
2. Deengra	...	194	2972	1405	995	911	1243	1213	171	393	127	39	56	193
3. Dhanaura	1	57	2027	1350	933	899	1004	1110	91	101	287	37	22	56
4. Khadgujar	...	37	4359	2099	1464	1302	1547	1511	175	409	360	35	10	...
5. Karaundi	...	...	3198	951	1325	...	1283	1318	146	59	136	15	81	167
Total	11	427	19748	10322	7668	5643	7265	7373	789	1436	1709	261	231	478

and the population served, the cattle population is not excessive. For every 10 acres of land there is one yoke of bullocks while roughly, for every family there is a milch animal. But the quality of cattle is not good. Data available for village Peli in Deengra Area point that a cow yields about 4.5 B. mds. of milk per lactation period, and a buffalo about 20 B. mds. This roughly indicates the milk production of the Region.

Apart from poor quality of cattle the Region has two other problems. For one thing, due to the relatively higher milk yield of buffaloes, there is a general tendency to own buffaloes in preference to cows. This affects the local availability of bullocks for agricultural purposes and bullocks have to be imported periodically. Secondly there is a general shortage of fodder due to absence of pastures. Efforts have, therefore, to be directed towards improving the quality of cows and providing enough fodder for the cattle.

Non-Agricultural Occupations

Of about 17,000 families in the Region, some 4528 (about 24 percent) are artisan families engaged in village industries and about 400 families engaged in village services. Over 50 percent of the artisans are found in Kamelpur and Deengra, while about 57 percent of the artisans in the Region are engaged in the Khadi industry. Details of the Area-wise and occupation-wise distribution of these families are set out in Table 8.

Table 8—Artisans in the Region

	Occupation	Dhanaura	Kamelpur	Deengra	Khadgujar	Karaundi	Total
1.	**Khadi**						
	(a) Weavers	49	124	72	52	58	355
	(b) Carders	32	32	27	22	25	138
	(c) Spinners	239	716	580	151	581	2267
	(d) Dyers & Printers	...	14	12 4	... ...	14	40
	(e) Dari-makers	...	...			...	4
2.	**Leather**						
	(a) Shoe-makers	14	57	70	15	3	159
	(b) Flayers	4	20	17	2	2	45
	(c) Cobblers	3	30	...	5	...	38
3.	**Oil**						
	Oilmen	22	69	55	45	8	199
4.	**Bamboo**						
	(a) Chhaj makers	5	...	13	...	5	23
	(b) Basket, mat & pan makers	...	...	56	...	5	61
5.	**Fibre**						
	Rope-surki makers	17	141	22	2	...	182
6.	Carpenters	78	112	58	49	48	345
7.	Potters	21	33	29	44	45	172
8.	Black-smiths	26	...	31	30	37	124
9.	**Others**						
	(a) Tailors	21	43	34	44	37	179
	(b) Masons	37	57	12	15	7	128
	(c) Gold-smiths	14	19	20	...	16	69
	G. Total	582	1467	1112	476	891	4528

Village Industries

Though the Dhanaura Region is not very rich in industrial traditions, there are several village industries such as handspinning and weaving, oilpressing, leather tanning and shoemaking, pottery, carpentry and smithy, bamboo and fibre work, goldsmithy, tailoring and brick-laying, the most important industry being Khadi. Amber spinning has been recently introduced in the Region.

These artisans make use of raw materials which are either locally produced or imported and manufacture chiefly utility products. The equipment used is generally self-owned and of the traditional type except for Ambar Charkhas recently introduced.

The goods generally produced are khadi cloth and durries; leather shoes and agricultural requisites; mustard oil; date and bamboo baskets, toys etc.; ropes and twine; household earthen utensils and bricks; wooden furniture and agricultural implements and building materials of wood and iron. A considerable portion of the production, particularly cloth is for self-sufficiency, while the surplus is disposed of generally to the private dealers direct and to a small extent to consumers and cooperative societies.

Employment and Income :

Data available from a sample survey of the artisan families (377 families) (Table 9) show that village industries are generally full time occupation except in textiles like cotton spinning and fibre work where part-time employment is common. The number of days worked is less than 200 in a year except in a few industries like brick laying, goldsmithy, and weaving. The average daily wage per artisan family is about Rs. 1.5 except in flaying and

Table 9—Employment and Income in Village Industries (Sample Survey)

Industry	No. of persons	Full time	Part time	Days worked per worker	Hours per day	Daily wages	Per capita Income
1. Khadi							
i. Carding	19	6	13	135.9	6.4	1.82	250.9
ii. Spinning	151	13	138	165.0	5.0	0.38	72.8
iii. Weaving	71	51	20	216.2	6.0	1.38	317.0
iv. Dyeing &printing	6	3	3	188.3	11.0	1.33	198.3
2. Oil pressing	39	23	16	164.0	6.0	0.86	144.0
3. Leather							
i. Flaying	17	14	3	190.0	5.0	2.17	408.0
ii. Tanning	8	5	3	105.0	6.0	1.52	161.0
iii. Shoemaking	27	19	8	199.0	5.6	1.53	264.0
4. Pottery	27	19	8	197.0	5.5	0.87	176.6
5. Carpentry	48	35	13	187.0	6.6	1.75	350.2
6. Smithy	17	15	2	222.0	6.0	1.18	261.6
7. Bamboo	8	3	5	124.0	4.0	0.78	102.0
8, Chhaj making	6	5	1	194.3	7.0	1.06	199.3
9. Fibre	26	10	16	186.0	6.0	1.87	411.3
10. Goldsmithy	17	13	4	221.0	6.0	1.18	225.9
11. Brick laying	19	17	2	257.4	7.0	2.33	637.4
12. Tailoring	22	16	6	214.2	7.0	1.48	334.4

mason's work. Consequently the annual income per family is about Rs. 175 only except in industries like flaying. brick laying and weaving, primarily due to a longer period of employment,

Problems of Artisans :

The sample survey of artisans has indicated four major problems of village industries:

i. Raw materials : Much of the raw material has to be imported and consquently there is at times non-availability of material apart from high prices;

ii. Finance : For want of adequate owned capital most of the artisans borrow from private money lenders and merchants and hence they are unable to work as economic units;

ili. Equipment : The equipment used is of traditional type and hence productivity is low and income poor;

iv. Marketing : While a portion of the production is consumed by the artisans, the surplus has to be sold to private dealers mainly at low prices due to need for ready money.

Village Services

Of 400 families engaged in village services, 246 are hairdressers, 129 dhobies and and 25 sweepers. Results of the sample survey indicate that 80 percent of them are engaged fuli time and the rest part time. The dhobis work about 190 days in a year and earn about Rs. 231 per family while the hairdressers work about 225 days and earn about Rs. 195 per family.

General Condition of the Artisans

It is estimated that a rural family requires at least Rs 4 per day to have just the minimum standard of living. Viewed from this point, the sample survey indicates that village industries and

services alone are unable to bring adequate income to the artisans. Available data indicate that, of 377 artisan families surveyed, 216 families are engaged mainly in industries and 139 in farming or farm labour. More over 294 are employed the year through while 83 families have seasonal employment in industries. Consequently subsidiary occupations are essential to supplement the main source of income. Of 377 families 274 have some subsidiary occupation like farm work and service to add to their main source of income.

Even while subsidiary occcupations are pursued by a large majority of the families in the Region, the average income is too low in every artisan group. The problem of the artisans is the problem of accelerating the productivity per worker which alone can ensure larger earnings. A three-gear movement of the industrial machine is imperative to attain to the necessary level of productivity and earnings :

First there should be enough renumerative supplementary occupations. It does not suffice to have just one sub-occupation which is a time-consuming, poorly remunerative one. Most of the artisans surveyed have one small suboccupation. It is essential to have one or more suboccupations of a remunerative nature like hair oils and biscuits in the oil-pressing industry; slate pencil making in soap industry; and ready made garment manufacture in the tailor's trade.

Secondly there should be full utilisation of capacity among all the artisans. The sample survey indicates that very few artisans worked more than 200 days in the year and for 8 hours a day. Though weaving, oil-pressing, shoemaking, carpentry and smithy etc. can provide full employment to artisans, the actual work period in terms of man days is not more than 50 percent of capa-

city. Work to capacity where seasonal or other limiting factors do not occur will raise productivity per capita as well as per unit of time.

Thirdly, production technique should be improved appreciably. Technological improvement is the topgear which accelerates the productivity of the artisans. The production processes and equipment now in vogue in the Region are traditional ones with low productivity. The replacement of this equipment with improved ones and the training of artisans in these new skills will rapidly enhance the overall production and earnings of the workers. The replacement of traditional charkhas with Amber sets and of the traditional ghanis with wardha ones are instances in point.

Trade

Being an important producer of cereals and cash crops like sugar cane and groundnut and a consumer of factory-made goods like cloth, paper, tanned leather, matches etc., the Region has a large import-export trade. Dhanaura is the chief centre serving Dhanaura, Deengra, Kamelpur and Khadgujar Areas. Relatively smaller trade centres are the two border towns of Gajraula and Amroha which serve Khadgujar and Karaundi Areas respectively.

Few traders, however, live in villages and keep retail shops. They live in towns and carry on trade. Villages are generally served by fairs held at important villages once or twice a week.

Sunday: Karaundi, Mohiuddinpur, Basta;
Monday: Bachchrawan;
Tuesday: Dhanaura, Chandpur;
Wednesday; Amroha, Navgaon;
Thursday: Koral;
Friday: Gajraula, Chandpur;
Saturday: Amroha, Chuchela.

All and sundry— cloth, provisions, hides, vegetables, fruit toys, toilet goods, pots and trinkets— are sold at the fairs at prices varying with the supply and demand position of the day.

General Economic Condition of the People

Though the Intensive Area Scheme implemented in the Region since 1954-55 has helped improve the conditions of the people to some extent, the general condition of the people is still not satisfactory. The average income per family is low while the standard of living is rather poor.

Income: Data available from 350 families surveyed roughly show that some 255 families (73 percent) live below the minimum standard with less than Rs. 500 per family. Only 68 families (19.3) percent have income between Rs. 1001 and Rs. 2000, while 27 families (7.7 percent) derive income exceeding Rs. 2000 as set out in Table 10. Of the five Areas in the Region, Dhanaura and Karaundi have generally a higher average income than the others.

Table 10—Income Groups in Dhanaura Region (Families)

Name of the centre	Below Rs. 500	Rs. 501-1000	Rs. 1001-2000	Above Rs. 2000	Total No. of families
Dhanaura	19	17	14	10	60
Deengra	27	29	6	3	65
Karaundi	22	26	21	6	75
Kamelpur	43	28	15	4	90
Khadgujar	20	24	12	4	60
Total	131	124	68	27	350

Standard of Living

Due to low income, the standard of living is not satisfactory in respect of both food consumption and other consumer goods.

Food: Data available from the sample survey indicate that the food intake is not only inadequate but ill-balanced as shown in Table 11. The consumption of cereals is more than the standard requirement while that of the protective goods like milk, fruit and vegetables is too low.

Table 11—Food Consumption in Dhanaura Region

(Mds. per adult unit per year)

Item	Standard requirements	Actual
1. Cereals	4.00	4.65
2. Pulses	0.85	0.40
3. Vegetables	2.90	0.63
4. Milk	2.90	0.98
5. Fruit	0.85	0.38
6. Oil	0.60	0.07
7. Gur & Sugar	0.60	0.88
8, Meat, fish, eggs	1.10	0.09

Consumer Goods : The consumer goods generally in demand in the Region are cloth, footwear and other leather goods, soap, paper, pottery, fibre products, match boxes, furniture and luxury and toilet articles such as powder, bangles. crockery, watches and torch lights. Table 12 shows the per capita/per family consumption of some of the goods as seen from the sample survey. Though the Region is situated in the country in the Northern Zone,

Table 12—Consumption of Consumer Goods in the Region

Item	Per capita/ per family	Quality	
		Unit	Qty
1. Cloth	Per capita	Sq. yds.	18.5
i. Khadi	,,	Sq. yds.	3.1
ii. Mill	,,	,,	14.0
iii. Handloom	,,	,,	1.4
2, Footwear	,,	Pairs	0.9
3. Soap	,,	Lb.	3.0
4- Matches	Per family	Boxes	28.0

where the cloth consumption is generally larger than elsewhere in India, the per capita consumption is only 18.5 sq. yds, of which about 3 yards are Khadi cloth locally produced. The consumption of footwear is one pair per capita which is higher than in the other parts of the country. The use of soap is considerably larger than the average for the country (1.5 lbs.) but it is lower than in other rural regions like Kerala. So also while it is expected that a family need 72 match boxes a year, the consumption is only 28 boxes. Raising the consumption levels in these consumer goods implies a rise in the general standard of living of the people.

Housing

The housing conditions in the Region as explained in detail in Chapter Two, are far from satisfactory. Entire villages were ill-planned and construction of houses and laying of passages was done in accordance with exigencies of times and occasions. The crowding of houses and perching of villages on small sites in the Region was the outcome of a general need of security and the gradual expansion of agriculture where possible. Houses are of two grades—houses of the well-to-do and those of the poor, the latter forming the bulk of the inhabited space. Buildings generally had mud or mud-and-brick walls and tiled, terraced or thatched roofain accordance with the economic condition of the owners.

During recent years there has been a general appreciation of the need for proper housing on the part of the people for various reasons : for apart from the congestion and danger from fire, the damage to houses from excessive rainfall and to whole villages due to water logging and flooding of low-lying areas in the Region have made it essential to improve housing so as to meet the new conditions. The earnestness of the people to improve housing is indicated by the sample survey: Of 350 families interviewed, some 145 (41 per cent) desired to have new houses while 136 (39 percent) wanted to have houses repaired, just because they were at present unable to find resources for building new houses. There is thus a need for a large scale housing programme in the Region, consisting not only in erecting new houses but in remodelling villages.

Health

Due to poor living conditions and ill-balanced food of the people, public health in the Region is poor. Ill-health due to seasonal conditions and deficiency diseases are common among the people, while maternity aid is seldom available to women. Medical aid to a little extent is available from various medical systems. Data available from the survey indicate that over two-thirds of the people go in for alleopathic treatment and one-fourth for ayurvedic treatment. Treatment from private doctors is too expensive. There is, however, a central hospital at Dhanaura with a few dispensaries in certain Areas. These medical institutions provide treatment and advice to people under a health scheme as detailed in Chapter Three. The need for expansion of medical facilities so to cover the entire Region under the health scheme is one of the prime needs of the Region.

APPENDIX

Rainfall Distribution in Dhanaura

Month	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56
June	6·77	·11	·86	·50	·80	·30	2·59	3·13	·66	3·02
July	17·04	3·02	13·90	11·35	11·50	5·92	7·85	14·09	6·96	5·88
August	10·77	9·04	20·55	7·47	9·30	5·04	17·16	6·33	5·66	
September	2·30	7·49	10·23	2·78	5·27	7·77	·27	1·99	2·25	
October	1·20	...	·48	...	...	...	..	...	7·32	
November	·08	...	...	...	...	1·03	...	...	...	
December	·20	·33	...	...	...	...	·17	...	...	
January	·26	1·25	·02	·90	·73	·21	3·04	1·33	3·11	
February	·98	1·61	3·02	·25	·03	·51	...	3·61	...	
March	1·89	·61	·50	1·44	1·83	1·86	...	·80	·12	
April	...	...	·15	·02	·58	...	·63	...	·30	
May	...	·30	·13	...	·16	·17	·66	...	...	
Total	41·49	21·76	49·84	24·71	30·20	22.81	32·37	31·28	26·38	

CHAPTER TWO

HOUSING PROGRAMME

Present Condition

It has been reported that about 75 per cent of the rural houses need to be reconstructed at a cost of several hundred crores of rupees. The Dhanaura Region covering some 245 villages and a population of about a lakh is typical of rural housing in the country.

Political as well as socio-economic factors have reduced the Region to its present state of congestion and stunted growth. Its nearness to the "cock pit of India" exposed it to political dangers through centuries and created in the people a craving for security of person and property. Whole communities were thus probably knit together into crowded villages regardless of health consideration. Through decades while population increased, the residential area did not keep pace with it ; but house extensions were made indiscriminately within the circumscribed village site. Another cause of this excessive density of population has been the pressure on cultivated land for instance in Dhanaura Intensive area (with about 21,000 population), of 6380 self-supporting persons, some 5048 depend on agriculture. The villagers have therefore sought to get the best out of their land by foregoing comforts of living and have brought every inch of cultivable land under the plough. The prospects of commercial crops like sugar cane and groundnut have only aggravated the situation and rendered the farmers averse to cutting of cultivated area for residential purposes.

Entire villages are therefore ill-plnaned, construction of houses and laying of passages being done in accordance with exigencies of times and occasions. Houses, generally are of two grades-houses of the richer classes like big land lords and those of the poorer sections of the population like small peasants, artisans and labour classes. The bigger type houses are premises walled on all sides with a courtyard in the centre and some four or five rooms around it. They have walls of mud of mud-and-brick, while the roofing is generally a terrace of rafters covered with brick and mud. The smaller houses have a suite of some two rooms with mud walls and thatched roofs, a few houses having brick-and-mud roofing. All types of houses have few windows for reasons of security as well as segregation of women. No planned roads are laid, the whole village being a maze of foot paths and blind lanes. The map of peli village in Deengra Intensive Area presents a picture of the congestion in a village where about a third of the families are landholders of some status. Of about 150 hauses, some fifty are fairly large while the others are small ill-shaped ones. Most of the houses are insside a ring road and line up on both sides of a maze of blind lanes. Considering that most of the villages in the region are not as rich as peli the condition of houses in these villages must be worse than in Peli.

Need of Housing Programme

Several factors make it imperative to rebuild houses : Primarily, their crowded situation and generally thatched roofing expose the village to dangers of fire. Secondly, though most of the house are owner-occupied (tenants being very few), they are incommodious to growing families and admit of no planned expansion. Apart from these general factors, new factors necessitate an early rebuilding of villages: first a change in the meteorological conditions of the region. Against a normal rainfall of below 40", the region

has, since four years, about 60 to 85 inches of rain annually. Consequently the mud walls and roofs melt away and cause house collapse or heavy damage. Secondly, waterlogging and defective drainage. Some villages are situated in low-lying areas which form a natural waterway for flood and rain water. These villages are often water-logged and houses are damaged.

House construction on a large scale in the region is therefore imperative. The magnitude of the need is revealed by the survey. Of the 350 families interviewed during the survey some 145 (41 per cent) want to have new houses while 136 (39 per cent) want to have their houses repaired, just because they are at present unable to finance new housing projects. On the basis of this sample survey it may be estimated that of the 19,000 families in the Region about 40 per cent or about 7500 families desire to have new houses while most of the others try to manage with some repairs at present and build houses in course of time.

House building on such a large scale can be done by a planned housing programme, consisting in a two-fold line of development. First the construction of well-ventilated and strong-roofed houses with kitchen garden and essential amenities; and secondly, village-remodelling with a good drainage, high level house sites, and inter-spacing of house steads.

Conditions are favourable for such a project; for under the U. P. Consolidation of Holdings Act now in force, the entire Moradabad district is expected to be covered within some three years; and the farmers generally appear desirous of finding abodes in or near their farms. The institution of a housing programme will help enlist gradually the cooperation of the entire farming community. The survey points out that out of 350 families in the sample, some 220 families agreed to join the housing scheme while many families hesitated to join chiefly for want of enough financial resources.

The Programme for 1959-60

Mention has been made of the need for some 7,500 houses for Dhanaura Region on the basis of the present economic condition of its people. Eventually when the economic position of the people improves, several families which at present propose to manage with or without repairs to their present houses may desire to have better housing. The housing needs of the Region therefore tend to expand over a period. It is obviously not possible to reconstruct whole villages during a few years. Housing programme is a long term one for a Region and is likely to spread over a decade.

During 1959-60 the programme will consist in the construction of one thousand houses in the Region at some two hundred houses in each of the five Areas. In a programme of large scale housing, it is ideal to have construction done on village remodelling basis. Where houses are built by individual families on their own, it is likely that proper planning of the houses as well as the locality where the houses are built will not receive attention. Houses may be constructed as incommodious and ill-ventilated structures and the locality may be shaped into an Area of congested and crowded life of men and animals. But on the other hand, if construction is done on village remodelling basis there in ample scope for bringing in ideal conditions in respect of houses and residential areas. Village remodelling consists not in mere extension of housing accommodation or expansion of existing residential quarters in accordance with exigencies of time and occasion, but in planned utilisation of available habitable area. The village site is surveyed and a map of a remodelled village is prepared. Lay-out plans are made by technically qualified people with a view to providing ideal

living space with well-laid roads and passages and inter-spaced houses perched on neatly planned sites with flower and kitchen gardens to make life human. Such remodelling of villages cannot be done by individuals but by the cooperative efforts of the community. It is the chief objective of this programme to provide housing in remodelled villages within a measurable period of time. As it is not possible to embark on complete village remodelling during the first year itself, efforts will be made to combine village remodelling with individual house building projects. In other words, some houses will be built on village remodelling basis by extending present village sites and/or joining hamlets with the main village, while the others will be built on the existing house sites provided with some amenities. It is expected that roughly about 500 houses will be built on village remodelling basis in 25 villages (5 in each Area) and the others on the basis of individual preferences.

The programme will be confined to construction of new houses and will not cover house repairs. For it is expected that as the repairs are just a stop gap, until better economic conditions enable owners to build new houses, these repairs require only katcha materials. The families will be able to procure these katcha materials (mud, bamboo, thatch, etc.) from out of their own resources without need for assistance from the Saghan Kshetra Samiti or any other external source.

Sites and Type Designs

To meet the requirements of the families of different socio-economic strata, houses of 3 grades—A, B & C will be constructed at an approximate value of Rs. 5,000/-, Rs. 3,000/- and Rs. 2,000/- respectively. Of 1000 houses constructed during the year about 300 will be of 'A' grade, 450 of 'B' grade and the remaining 250 of

'C' grade, 'C' grade being generally meant for Harijan families. The plinth area of houses will be approximately 700 sq. ft, 450 sq. ft and 300 sq. ft respectively for the three grades. The average plinth area will be about 450 sq. ft and the average cost about Rs. 3,700/-. In each grade there will be some four or five type designs from which to choose the plan of the building. The designs will be in accordance with modern climatic and economic conditions. For instance unlike the present flat roof structure there will be sloping roofs of cement or tiles to avoid leakage during rains which have become unusally heavy during recent years. Provision will also be made for electric installation where required as over head lines now run through many of the villages in the Region. Additions to the proposed structures will have to be made by the owners themselves on their own. Each house site will be about 1/4th of an acre and will provide for a house, a kitchen garden and sheds, etc.

While some families own sites either in the village or in the proposed extension, others have to procure sites by exchange or outright purchase from present owners. Roughly, about 250 houses will be built on own sites while 500 will be built on sites obtained by mutual exchange among land owning farmers. Some 250 families buy sites against cash at an average price of about Rs. 250 per quarter acre of land.

Institutional Agencies

Rural housing has suffered not only from neglect of repairs and upkeep but also suffered from ill-planned construction which always has serious repercussions on rural life and health. The chief cause of this defect is not so much the paucity of finance in the countryside as the absence of organisation. Villagers spent money in construction or repairs of their buildings but have failed to get the

best out of their resources for want of organisation which consists in the procurement and distribution of materials, economic utilisation of labour and technical advice and supervision of work at every stage. Work was often done desultorily as and when funds were forthcoming, while artisans and labourers worked in-efficiently. Work period was prolonged and costs mounted.

It is one of the greatest discoveries of this century in the economic field that organisation is more important than finance for economic development. In housing programmes this organisation consists in assigning sites, purchase of raw materials, production and distribution of basic materials like bricks and hardware, employment of labour, mobilisation of financial and other resources, offer of technical advice and supervision of work. The Dhanaura Region will make efforts to press into service the organisational aspect of economic activity in implementing the housing programme. But as it will not be able to attend adequately to these details of the housing programme, it is proposed to organise a Co-operative Housing Society to shoulder a part of the responsibility and to assist the Kshetra Samiti in its multi-sided work.

Co-operative Housing Society

The chief objectives of the Society will be (i) to procure and supply to members some of the raw materials necessary for house building; (ii) to provide technical advice and supervision at every stage of construction work; and (iii) to promote co-operative endeavour and corporate life among the villagers. Membership will be open to all families in the Dhanaura Region who join the housing scheme. There will be in the first instance 1000 shares of Rs. 100 each, the admission fee for membership being Rs. per share. Every member may buy one or more shares, the maximum limit per member being three shares. The share capi-

tal will be deposited with the Co-operative Central Bank, Moradabad from which funds will be borrowed from time to time to carry out business of the Society. The Society will be managed by an Executive Committee with a President, Honorary Secretary and Honorary Treasurer. It is expected that at least 1000 families will join the Cooperative Society during the year.

Materials for Building Work

(a) Raw Materials: The raw materials required for the work are flat iron bars, iron sheets, teakwood, sal wood, countrywood, oils and chemicals for paints, coal, lime stone, and firewood. It is expected that about Rs. 5.66/- lakhs worth of these materials of which timber alone will be as high as 37 percent of the total, (Table 1) will be required for processing into basic materials.

Table 1—Raw Materials Required to Process Housing Materials

	Item	Quantity	Value (Rs.)
1.	Iron Bars (Flat)	1300 Cwt.	28,600
2.	Sheet Iron	25000 Cwt. / 112	5,357
3.	Lime Stone	140000 Cft.	84,000
4.	Coal for Bricks	5600 Tons	1,40,000
5.	Brick Bats	250000 cft.	75,000
6.	Saal wood	11,000 cft.	66,000
7.	Teak Wood	104000/8	1,04,000
8.	Country Wood	54000/8	23,625
9.	Oils & Chemicals		
	Linseed oil	950 lbs.	
	White lead	950 lbs.	
	Verdigris	450 lbs.	3,000
	Turpentine	650 lbs.	
10.	Fire Wood	5000 Mds.	1,000
11.	Coal for Lime	28,000 cft.	35,000
			5,65,582

These materials will be procured by the Kshetra Samiti and the Cooperative Society from appropriate sources and stocked in a central godown for use as and when required.

(b) Production and Distribution of Basic Materials:—

The basic materials required for the construction work are fabricated iron parts, bricks, cement, mortar, doors and windows and paints, etc. It is estimated that about Rs. 22.66 lakhs worth of these building materials will be required during the year for the 1000 houses. Table 2 sets out details of the requirements.

Table 2—Total Housing Materials Required

		Quantity	Value (Rs.)
1.	Iron Bars	8250 Cwt.	2,14,500
2.	Hold Fast etc.	1250 Cwt.	50,000
3.	Fittings	...	2,000
4.	Cement	46500 bags	2,32,500
5.	Brick Ballast	3,00,000 Cft,	48,000
6.	Lime	125000 Cft.	1,87,500
7.	Surkhi	244000 Cft.	1,32,000
8.	Bricks	2,50,00,000 Nos.	8,50,000
9.	Door Frames	10,000 Cft.	8,00,000
10.	Door Shutters (Teak)	1,04,000 Sft.	2,99,000
11.	Door Shutters (Country)	54,000 Sft.	1,01,250
12.	Paints	3000 lbs.	9,000
13.	Tiles	2, 15,000 Nos.	2,150
14.	Sand	2,40,000 Cft.	48,000
			22,65,900

Of these materials iron bars, cement and sand need only to be procured and used as such, while the other materials are to be fabricated or manufactured and supplied to consumers. As the cooperative society cannot instal manufacturing equipment at present, the Society will confine its activities to the purchase and distribution of iron bars and cement, which together amount to about Rs 4.5 lakhs; and the consumers themselves will arrange to obtain and use sand valued at about Rs 0.5 lakhs.

The Kshetra Samiti will undertake to produce and distribute the other basic materials during the year.

The Samiti will have the materials manufactured in its workshops and village industries units. A well-equipped central workshop at Dhanaura and five area workshops located in the five areas will share between them the work of fabrication of iron parts, timber work, and paint manufacture; while the village industries units will produce the other materials. The building material units and the pottery units of which there will be one each in each of the five areas will produce bricks and tiles to their capacity; while some 10 units at two in each area will manufacture lime.

The workshops will be equipped with necessary machinery like saw mill, lathe drill, welder, etc.; while the villags industries units will be provided with moulds, kilns and other equipment.

As the demand for bricks and tiles exceeds the supply possible from the proposed building material units and pottery units, arrangements will be made with contractors to produce and supply these materials to the Samiti at reasonable rates. The Samiti,on its part will supplly coal dust for the brick kiln,and decide the location of the kilns and other terms of contract. It is expected that five private kilns each producing 25 lakh bricks and 21,500 tiles in a year of five charges will be able to supplement the production of the Samiti's production units.

To stock and distribute the materials it is proposed to set up a central godown at Dhanaura and one area depot in each of the five area. The materials of both the Samiti and the Society will be handled by these depots. The consumers will obtain their requirements from their area depots and transport them to work spots in their own or hired bullock carts.

(c) **Labour:** It is estimated that the labour involved in the construction work will amount to Rs 14.25 lakhs. About 1700 artisans and labourers like mistries (master masons), brick layers, carpenters and smiths, painters, baildars (cement or mortar mixers) bhistis and coolies, earning daily wages at rates ranging from Rs. 1.25 (for coolies) to Rs. 5/- (for the master masons) will put in about 5.45 lakh mandays at about 550 mandays of all types of labour per house. Table 3 presents details of types of workers,

Table 3—Employment and Earnings Under the Programme

	Service	Mandays required	Rate	Wages
1.	Mistries (Master Masons)	5,000	Rs. 5/00	Rs. 25,000/-
2.	Masons	1,38,000	4/50	6,21,000/-
3.	Carpenters	37.000	4/00	1,48,000/-
4.	Blacksmiths	10,000	4/00	40,000/-
5.	Painters	14,000	3/50	49,000/-
6.	Baildars (Masala Mixers)	90,000	1/50	1,35,000/-
7.	Coolies	1,98,000	1/25	2,47,500/-
8.	Bhishties	53,000	3/00	1,59,000/-
	Total	5,45,000		14,24,500/-

wages rate and manpower required for the work. Apart from this manpower, transport of materials by bullock cart will cover about 40,000 mandays involving a wage bill of about Rs. 4 lakhs.

Of 5.45 lakh mandays, skilled labour namely bricklaying, carpentry, smithy and wood painting cover about 2 lakh mandays and manual labour, namely mixing mud and cement and mortar, digging and carrying head leads of materials and watering occupies about 3 5 lakh mandays at about 350 mandays per house. This unskilled work will chiefly be done by the owners themselves under self help or self service or by neighbours under mutual help. The rest of the labour, mainly skilled labour will generally be paid.

The artisan survey conducted in the Region shows that there are about 600 carpenters, smiths and masons in the Region as detailed in Table 4.

Table 4—Artisans in the Dhanaura Region

Class	Dhanaura	Deengra	Kamelpur	Kar-aundi	Khad-gujar	Total
1. Carpenters	78	58	112	48	49	345
2 Smiths	26	31	2	37	30	126
3. Masons	37	12	57	7	15	128
Total	141	101	171	92	94	599

Against this availability, the skilled work covering about 2 laksh mandays requires about 700 full time workers, while every effort will be made to press into service most of these artisans found in the Region, there will be a demand for more masons and for some 40 wood painters. In view of the delay entailed in training persons in these trades and absorbing them in the work, arrangements will be made to import labour in necessary lines from the bordering villages of Chandpur, Amroha, and Hasanpur for the first year's work. Efforts will be made during the year to train artisans for coming years.

Construction of each house is expected to take roughly two to three months. Building work will be carried out almost throughout the year except during rains. A vital feature of the scheme is self help and mutual help. While the owner and his family do self-service, the neighbours will lend service to the extent possible so that mutual help will contribute a sizeable part of the labour involved. It is expected that every family will contribute about 350 mandays labour in the erection of its own and some neighbour's houses. This labour will be forthcoming from all families except during sowing and harvesting periods when field labour engages all families.

Since the proposed large-scale building programme requires vast manpower, efforts will be made to mobilise it and switch it on to this work. To enable interested skilled and unskilled workers to participate in the various activities, a register will be maintained showing manpower availability and direct the proper utilisation of the pooled labour. Stipulation will be made even with kiln contractors to entertain labour from this pool normally where advance intimation is given to them. Payment for this labour will be ready or deferred and in cash and or kind and entries will be made in bcoks.

(d) Training Programme : Mention has been made earlier that while imported labour will be employed during 1959-60, efforts will be made to train skilled labour for coming years. Of this skilled work, masons generally need little special training as coolies working with brick-layers automatically get properly apprenticed and trained. Formal training is, however, necessary in carpentary, blacksmithy, wood-painting, brick and lime burning and brick and tile moulding. About 100 persons will be trained in training centres attached to the production centres for one to three months on a monthly stipend to be met from grants to various industries as shown in Table 5.

Table 5—Training Programme

Course	Duration (months)	No. of Persons	Monthly Stipend (Rs.)	Total Rs.
1. Carpentry	3	15	30	1,350
2. Smithy	3	15	30	1,350
3. Wood-painting	1	15	30	450
4. Brick & tile moulding	2	30	30	1,800
5. Brick burning	1	15	30	450
6. Lime burning	1	10	30	300
	...	100	...	5,700

These artisans will replace the imported labour to an appreciable extent as and when their training is completed.

(e) General Organisation of Work: Supervision and Administration :

(a) General Administration : The Kshetra Samiti will be in overall charge of administration and supervision of the work of all institutions— the co-operative society, workshops, godowns and depots—normal routine and activities being left to them. The Samiti will also be in charge of purchase of materials like coal, timber, iron and steel, fire-wood etc. in bulk from appropriate sources and distribution to institutions and contractors according to their needs.

(b) Cooperative Housing Society : The Society will be in charge of the purchase and distribution of iron bars, cement etc. It will have an Honorary Secretary and Honorary Treasurer to manage its affairs, while its establishment will consist of an office secretary, a clerk and a peon.

(c) Technical Staff : To supervise and guide the lay-out work and actual building activity, there will be a team of

technicians consisting of one engineer; one draughtsman; and 5 overseers (at one for each area). A typist-clerk will assist the team in carrying on office routine. It is proposed to request the Housing Ministry to lend the services of these technicians for one year in the first instance free of cost. This team will work under the Samiti and help implement the building part of the programme properly.

(d) Godowns & Depots : The Central Godown and area depots will each be staffed with a manager and accounts clerk to attend to the day-to-day transactions and routine.

Table 6 gives an estimate of the cost of establishment of the society, godown and depots and technical department:

Table 6—Estimated Cost of Administration and Supervision

Department	Post/Item		Salary Rs. P. M.	Cost for one year Rs.
1. Cooperative Housing Society	(a) Office Manager	(1)	100	1200
	(b) Typist-Clerk	(1)	60	720
	(c) Peon	(1)	50	600
Total	...		..	2520
2. Technical Staff				
	(a) Engineer	(1)	300	3600
	(b) Draughtsman	(1)	125	1500
	(c) Overseers	(5)	150	9000
	(d) Typist-clerk	(1)	100	1200
Total	...		...	15,200

3. Central Godown and Area Depots.	(a) Godown Manager	(1)	150	1800
	(b) Typist-clerk	(1)	100	1200
	(c) Issue Clerk	(1)	100	1200
	(d) Peon	(1)	50	600
	(e) Contingencies of godowns	.....	.....	1000
	(f) Depot Managers	(5)	100	6000
	(g) Depot Clerks	(5)	75	4500
	(h) Contingencies			4500
Total	...		...	14,800
GRAND TOTAL	...		...	32,520

Estimated Cost of the Programme

(a) Gross cost : The gross cost of programme inclusive of materials, labour and supervision is estimated at about Rs. 37 lakhs of which the bulk of the expenditure is on materials as seen from Table 7.

Table 7—Estimated Gross Cost of the Programme

Item	Cost	2 as % of Total
1	2	3
1. Materials	22,65,900	61.0
2. Labour	14,24,500	38.2
3. Supervision	32,520	0.8
Total	37,22,920	100.0

(b) Economics and net cost: The average cost of a house of about 450 sq. ft. plinth area is estimated at about Rs 3700 at current C. P. W. D. rates, details of which are contained in Appendix I A & B. This estimate includes (i) contractor's margin both in the purchase of raw materials and manufacture of them into basic materials— about Rs. 3 lakhs in the former and about Rs. 4 lakhs in the latter; and (ii) payment for all labour put in. It is considered that the elimination of the contractor by the cooperative society and Government's technical assistance will result in a net reduction of about Rs. 700, while the self-service of the villages in non-skilled items of labour to the extent of about 350 mandays per house will result in further economy of about Rs 400 per house. The net cost of a house is therefore expected to be about Rs. 2600 which means a cost of Rs. 5.8 per sq. ft Where, however, the owners prefer tiled roofing to terracing, a saving of about Rs. 118 (roughly Rs. 120) is expected. On tiled roof structures the cost per sq. ft. will be about Rs. 5. 5. The net cost of the programme at Rs. 2600 per house will be Rs. 26 lakhs.

(c) Financial Resources for the Programme : One distinguishing feature of the programme is the neglegible dependence on external resources. The programme is sought to be financed almost entirely from local resources. Houses will be built during the year only by families which have ready fluid resources. External aid will be recieved only for Harijan housing (Rs. 2.25 lakhs) at Rs. 900 per house from the Commission for Sheduled castes ; training programme (Rs. 5,700 from the Khadi Commission); and technical staff (Rs. 15,200 in the form of loan of services from Central Housing Ministry), the entire aid amounting to about Rs, 2.46 lakhs.

While the labour costs in actual building work will be reduced by the elimination of middleman's margin and promotion

of self-help, the cost of materials required is not likely to decrease perceptibly. As mentioned already the value of materials required will be some Rs. 20 to 22 lakhs of which about Rs. 5.66 lakhs will be raw materials and the balance processing and distribution charges.

The production of building materials requires capital equipment and working capital. This equipment will be provided by the Khadi Commission to the Region for the workshops, building material units, pottery units, etc. It is estimated that the capital equipment available for the Region will be about Rs. 26 lakhs as shown in Table 8.

Table 8—Capital Provided for the Various Units (Rs.)

Unit	No. of Units	Fixed Capital for equipment, sheds etc.	Working capital etc.	Total
1. Central workshop	1	50,700	25,000	75,700
2. Area workshops	5	45,000	15,000	60,000
3. Building Materials Units	10	1,50,000	1,32,600	2,82,600
4. Pottery Units	5	15,500	14,500	30,000
Total		2,61,220	1,87,100	4,48,300

The brick contractors and others will instal necessary equipment on their own.

The working capital required for the work is, however, appreciable considering that for a turn over of about Rs. 20 to 22 lakhs worth of materials, a third of the value on the whole is necessary

towards working capital, the working capital requirements may stand at Rs. 6.5 lakhs to 7.0 lakhs.

The working capital is to be shared by the co-operative Housing Society and the Kshetra Samiti. As the Society's business in iron bars and cement will be about Rs. 4.5 lakhs, working capital not exceeding Rs. 2.5 lakhs is expected to suffice, while to enable the Kshetra Samiti to produce and supply materials worth about Rs. 18 lakhs, a working capital of about Rs. 4.5 lakhs will be required. The Housing Society which will have a share capital of Rs. 1 lakh will find accomodation to the extent required from its District Co-operative Central Bank on the strength of its share capital deposited with the Bank; of Rs. 4.5 lakhs required by the Samiti, about Rs. 2 lakhs will be found from the working capital provided by the Khadi Commission for various production units set up (Table 8). The rest will be obtained as cash advances or earnest money from the house building families at about Rs. 250 per house on an average. Table 9 summarises the working capital requirements for the production programme:—

Table 9—Working Capital Requirements (Lakh Rs.)

Institution	Amount required (lakh Rs.)	Source	Available (lakh Rs.) Internal	External	Total	4 as % of 6	5 as % of 6
1	2	3	4	5	6	7	8
1. Kshetra Samiti	4.5	(a) Khadi Commission	...	2.0	4.5	44.5	55.5
		(b)Advances from families	2.5	...			
2. Housing Coop. Society	2.5	Coop. Bank	...	2.5	2.5	...	100.0
	7.0	...	2.5	4.5	7.0	36.0	64.0

The total financial resources required for the programme will be about Rs 30 lakhs of which Rs. 23.5 lakhs are cash to be found internally and Rs. 2.5 lakhs cash to be obtained from the Commissioner of Scheduled Castes and Rs. 4 lakhs labour put in by the house-owning families themselves. That is to say, of the total cost of the programme about Rs. 27.5 lakhs or 92 percent will be from internal resources and only Rs. 2.5 lakhs or 8 percent from external sources.

Impact of the Programme

It is expected that the impact of the programme on the Region will be wide as well as significant. The conservatism of the people regarding house planning will be broken. Secondly a beginning will be made in house building on planned basis where community interests prevail and individual comfort will receive due consideration. Thirdly rural health and hygiene will be developed by the provision of civic amenities like drainage, lighting, water supply etc. Fourthly a sense of co-operative action with a view to having common benefits and common economies in build-work will be developed. Fifthly a new type of house designing which meets the present climatic and economic conditions will be evolved. And sixthly a nucleus for rational use of manpower in the form of a labour pool from which labour is channelled to building work on exchange or ready deferred payment basis will be formed in the various villages.

APPENDIX I-A

Abstract of Material and Cost per House

Sl. No.	Details	Quantities	COST			MATERIAL					
			Unit *	Rate	Amount	No. Bricks	B.Concrete	Lime	Cement	Sand	Surkhi
1.	Earth Work excavation	630 cft.	% o cft.	18.00	11.34	...	...	...	...	...	...
2.	L.C. in foundation	315 cft.	% cft.	80.00	252.00	...	300 cft.	48 cft.	...	...	96 cft.
3.	Lime Masonry in foundation	411.5 cft.	% cft.	90.00	369.00	5500	...	50 cft.	...	...	100 cft.
4.	Mud Masonry in Super	1128 cft,	% cft.	70.00	789.60	14500	...	...	...	...	...
5.	Earth filling in plinth	396 cft.	%o cft.	27.00	10.80	...	...	...	...	...	...
6.	Wood work										
(a)	chokhat	9.75	per cft	11.00	107.25	...	...	...	...	...	...
(b)	Shutters	103.74	per sft	2.87	298.25	...	...	...	...	...	...
(c)	Batten doors	54.00	,,	1.87	101.25	...	...	...	...	...	...
7.	R.B. Lintal	240.6	% cft.	175·00	421.05	3120	...	...	27bags	% cft.	...
8.	L.C.Over roof	149 cft.	% cft.	108.00	160.92	...	120 cft.	24 cft.	...	...	48 cft.
9.	I.C.C.Flooriz	396.0	% cft.	50.00	198.00	...	s.30 cft.	...	...	...	...
10.	Hold Fast	33/38 cwt.	cwt.	40,00	32.85	...	60 cft.	...	...	...	...
							...	...	...	...	...

Sl. No.	Details	Quantities	COST			MATERIAL					
			Unit*	Rate	Amount	No. Bricks	B.Concrete	Lime	Cement	Sand	Surkhi
11.	Iron bars	8/ 7 cwt.	cwt.	40.00	45.71	...	...	...	...	...	...
12.	Painting	699 sft. 31 lbs.	sft.	5.50	38.44	...	...	...	...	...	...
13. (a)	C, Plaster 1 : 6	3297 sft.	% sft.	11.00	362.67	...	...	...	27bags	...	200cft.
(b)	C. Plaster 1:2	443.25 sft.	% sft.	18.75	83.11	...	...	...	8bags	...	20 cft.
14.	White Wash										
15.	M.S. Reinforcement	517 cwt. 56	cwt.	350.0	323.12	...	...	...	..	...	...
16.	Fittings	L.S.	...	...	50.00	...	...	...	...	...	...
					3656.26	23120 Nos.	542 B.	30 cft.	62 bags	320 cft.	244 cft.

* %o cft. means 1,000 cft ; % cft means 100 cft.

APPENDIX I B

1	**Earth work excavation**		
	allround walls	$=1\times89'-0''\times2'-6'\times2'-0''$	$=445$ cft
	Cross Wall	$=1\times8'-7\frac{1}{2}''\times2'-6''\times2'-0''$	$=43.1$ cft.
	,,	$=1\times10'-7\frac{1}{2}''\times2'-6''\times2'-0''$	$=53.1$ cft.
	,,	$=1\times17'-9''\times2'-6''\times2-0$	$=88.75$ cft.
			629.95
2	**L. C. in foundation**		
	allround wall	$=1\times89'-0''\times2'-6''\times1'-0''$	$=222.5$ cft.
	Cross Wall	$=1\times8'-7\frac{1}{2}''\times2'-6''\times1'-0''$	$=21.5$ cft.
	,,	$=1\times10'-7\frac{1}{2}''\times2'-6''\times1'-0''$	$=26.5$ cft.
	,,	$=1\times17'-9''\times2'-6''\times1'-0''$	$=44.5$ cft.
			315.00
3	**Lime masonry in foundation of 1st class bricks**		
	allround wall	$=1\times89'-0''\times1'-6''\times2'-0''$	$=267.0$ cft.
	Cross Wall	$=1\times9'-7\frac{1}{2}''\times1'-6''\times2'-0''$	$=29.0$ cft.
	,,	$=1\times11'-7\frac{1}{2}''\times1'-6''\times2'-0''$	$=35.0$ cft.
	,,	$=1\times18'-9''\times1'-6''\times2'-0''$	$=56.55$ cft.
	Partition Wall	$=2\times8'-0''\times0'-9''\times2'-0''$	$=24.0$ cft.
			411.5
4	**Mud masonry in Super.**		
	All Wall	$=1\times113'-0''\times1'-1\frac{1}{2}''\times10'-0''$	$=1271.5$cft.
	Cross Wall	$=2\times8'-0''\times0-4\frac{1}{2}''\times10'-0''$	$=60.0$cft.
	Over Pillars	$=1\times16'-9''\times0-9''\times3'-0''$	$=37.5$cft.
	Pillars	$=1\times0'-9''\times0-9''\times7'-0''$	$=4.0$cft.
			1373.0
	Deduction:—		
	Doors	$=2'\times4'\times7'\times1'-1\frac{1}{2}''$	$=63.0$ cft.
	,,	$=5'\times3'\times6'\times1'-1\frac{1}{2}''$	$=101.5$ cft.
	Window	$=6'\times3'\times4'\times1'-1\frac{1}{2}''$	$=81.0$ cft.
			396

5. Earth filling in plinth

Rooms	$=2\times10'\times12'\times1'-0''$	$=\frac{480}{2}$ cft.
Verandah	$=1\times10'\times\ 6'\times1'-0''$	$=\frac{120}{2}$ cft.
Smallrooms	$=3\times\ 4'\times\ 8'\times1'-0''$	$=\frac{192}{2}$ cft.
		396

6. (a) Indian Salwood

Chokhat

Doors	$=2\times18'\times\frac{1}{4}\times\frac{1}{3}$	= 3.00cft.
,,	$=2\times15'\times\frac{1}{4}\times\frac{1}{3}$	= 2.50cft.
Windows	$=3\times17'-0''\times\frac{1}{4}\times\frac{1}{3}$	= 4.25
		9.75

(b) Shutters full

Pannelled

Doors	$=2\times6'-7''\times3'-7''$	=47. 2
,,	$=2\times5'-7''\times2'-7''$	=28.84
Windows	$=3\times3'-7''\times2'-7''$	=37. 7
		103.74
Batten Doors	$=3'\times3'\times6'$	=54. 0

7. R. B. Lental Over

roof	$=1\times25'-6''\times21'-6''\ \times0-1\frac{1}{2}''$	=205.5
Verandah	$=1\times16'-9''\times\ 0'-9''\ \times0-\ 9''\times0-9''$	= 9.5
Doors	$=2\times\ 5'-0''\times\ 1'-1\frac{1}{2}''\times0-\ 6''$	= 7.5
,,	$=8\times\ 4'-0''\times\ 1'-1\frac{1}{2}''\times0-\ 6''$	= 18.0
		240.6

8. Lime Concrete over roof $= 1 \times 26' - 6'' \times 22' - 6'' \times 0 - 3'' = 149$

9. 1" TK. C. C. Flooring over 3" L. C.

Rooms	$=2 \times 12' \times 10'$	$=240$
Varandah	$=1 \times 10' \times 6'$	$= 60$
Small rooms	$=3 \times 8' \times 4'$	$= 96$
		396

10. Hold Fast $= \frac{66 \times 2}{112}$ Cwt. $= \frac{33}{28}$ Cwt

11. Iron bars $= 6 \times 4 \times 8 \times \frac{4 \times 4}{24} \times \frac{1}{112}$ $= \frac{8}{7}$ Cwt.

12. Painting

Doors	$=2 \times 4' \times 7' \times 2 \times 3/2$	$=168$
"	$=5 \times 3' \times 7' \times 2 \times 3/2$	$=315$
Windows	$=6 \times 3' \times 4' \times 2 \times 3/2$	$=216$
		699

13. (a) C. Plaster outer

1 : 6	$=1 \times 122' \times 13'-0''$	$=1586$
Verandah	$=1 \times 18'-6'' \times 6'-0''$	$= 111$
inside rooms	$=2 \times 2(12+10) \times 10$	$= 880$
Small Rooms	$=3 \times 2(4+8) \times 10$	$= 720$
		3297

(b) 1 : 2 ceiling

Rooms	$=2 \times 10' \times 12'$	$=240$
Small Rooms	$=3 \times 4' \times 8'$	$= 96$
Verandah	$=1 \times 10' \times 6''$	$= 60$
Pillars	$=3 \times 2'-3'' \times 7'-0$	$= 47.25$
		443.25

14. White wash as item Nos. 13 a, b.
15. M. S. Reinforcement 3 Lbs./Cft.
16. Filling L. S. $=$ Rs. 50/-.

CHAPTER THREE

CONTRIBUTORY HEALTH SCHEME

In the overall plan for raising the living standard of the people, provision of medical facilities occupies an important place. Raising the health standard involves both prevention and cure of the disease; the first is linked up with the development of the economy of the Region for providing increased opportunities of employment at higher levels of income ; the second points to the need to undertake a programme of extending health services in the Region.

The emergence of the regional health scheme in its present form and courage was preceded by a small experiment of providing medical facilities in a village. Kamelpur with a population of 500 launched a social security programme which covered the provision of medical facilities to the people by pooling resources in the village. All the families contributed 1/40 of their total produce to the Social Security Programme Fund of the village. A dispensary with one qualified and experienced medical practitioner in charge was started in the village and free medical advice and treatment was provided to the people. The programme was initiated in 1956-57 and continued during 1957-58.

The experience gained in Kamelpur has paved the way for undertaking an ambitious health scheme covering the whole Region. The scheme consists in a well-equipped central hospital with a chain of dispensaries in each of the five areas forming the Region. The building of the central hospital has been built at a

cost of about Rs. one lakh which was met mainly from the earnings of the Kshetra Vikas Samitis from out of the Khadi production subsidies and partly from donations from the District Board, the District Planning Committee, the Cane Union Ltd., Amroha, the Town Area Committee, Dhanaura and some individuals.

The foundation stone of the hospital building was laid by Shri Morarji Desai, Minister, Govenment of India on 26th January, 1957. Construction of the hospital building was started in September, 1957. An engineer of the C. P. W. D., New Delhi was kind enough to assist the Committee in the actual construction of the building in a short period of 5 months, in spite of the difficulties arising out of the shortage of building materials.

To the north of the town Mandi Dhanaura, on a 3—acre plot donated by a resident of the town, the hospital building has been constructed. The building provides accommodation for 24 beds, an operation theatre, a labour room and a dental treatment room besides an out-patient department, a kitchen, a doctor's room and a office. The lay out of the hospital provides enough scope for extention of the hospital building to cope with the demand for additional facilities for treatment.

In view of the enthusiasm and eagerness with which the people had welcomed the idea of the health scheme for the Region, the need for giving a concrete shape to the idea had become urgent and a beginning was made by taking a building on hire from April 1957. A qualified dental surgeon was moved in to take charge of it and the beginning was made with the provision of facllities for treatment of dental diseases. For some months a surgeon from Delhi used to visit Dhanaura every Sunday and was available for free consultation.

The initial arrangements regarding consultation by an eminent doctor and facilities of treatment of dental cases created a

very favourable background for the future working of the scheme in the Region. One M. B., B. S. doctor was appointed in January 1958 and from the hired building the team of 2 doctors and 1 compounder shifted to the hospital building in January 1958. With the addition of one more compounder in February the strength of the staff was raised to 4. Thus before the close of the year 1957-58, the hospital building was constructed and facilities for consultation as well as supply of medicine were organised.

Table 1 sets out particulars of funds received and expenditure incurred by the end of March 1958.

Table 1—Income and Expenditure on the Hospital (Rs)

Item	Receipts	Item	Expenditure
1. Contributions from individuals	18,964.24	1. Building	73,989.18
2. Contribution from Institutions: District Board Moradabad	5,000.00	2. Medicines and others	8,156.65
3. Hospital Charity Box	73.14	3. Pay and T. A.	5,490.42
4. Contributions of the 10 Intensive Area Centres of Distt. Moradabad			
(a) Janseva fund	1,103.65		
(b) Artisans welfare fund	3,699.89		
5. Balance of expenses from the earning of 10 Intensive Area Centres of Distt. Moradabad	58,795.33		
Total	87,636.25	Total	87,636.25

Progress during 1958–59

The year 1958-59 witnessed the consolidation of the work done during the preceding year. With the passage of time the flow of patients increased and two more compounders were recruited to assist the doctors in the discharge of their duties. The operation theatre was equipped and surgical cases were admitted. The hospital has earned a good reputation for surgical operations.

With the strengthening of the staff and procurement of beds and other equipment, the hospital started admitting in-patients. There are two wards, one for males and the other for females, each having 12 beds. There are thus 24 beds for a population of 1,00,000, which means 0.24 beds per 1,000 population.

The hospital is in urgent need of a lady doctor and proposes to start the maternity and gynaecological ward when one is recruited.

The following Table shows the number of persons who have taken benefit of the hospital by the end of September 1958.

Table 2—Cases Treated at Hospital (1958)

S.No.	Month	No. of Patients
1.	January	177
2.	February	972
3.	March	1,597
4.	April	1,914
5.	May	2,231
6.	June	1,047
7.	July	902
8.	August	476
9.	September	562
	Total (9 months)	9,878

The Table shows a gradual increase in the number of patients coming to the hospital since it began working in January 1958, which is indicative of the popularity of the hospital. The number of patients in the rainy season was naturally low. The following Table sets out the estimated expenditure and the receipts during 1958-59.

Table 3—Estimated Expenditure in 1958-59 (Rs.)

Item	Receipts	Item	Expenditure
1. Cane Union Ltd., Amroha	15,000.00	1. Medicines & Others.	20,000.00
2. Red Cross	500.00	2. Pay & T.A. of the staff.	12,500.00
3. Membership	24,000.00	3. Contingency	3,000.00
4. Income from patients	2,000.00	4, Equipment	5,000.00
		5. Hospital Bldg Maintenance	1,500.00
5. From different Kshetra Samitis	25,000.00	6. Reserve fund.	34,500.00
6. Individuals	10,000.00		
Total	76,500.00	Total	76,500.00

The receipts from members of the Scheme from the Institutions such as the Cane Development Union, Ltd., Amroha and from the Department of the State Government are expected to be substantial during 1957-58. The money thus received will considerably strengthen the financial position and a reserve fund will be created to meet the expenses on the expansion of the scope of the health services in the coming years.

Membership

Contributions :

As per rules framed by the Health Committee, no single individual person of a family, but the family as a whole has to enrol itself as member. The rate of membership fees is fixed at 12 hanks of handspun yarn per capita per annum. In the case of families who cannot make payment in the form of yarn, annual contribution is fixed at Rs. 2/- per head. The full amount of contribution has to be paid in one instalment. Only in the case of artisans who are connected with the Kshetra Vikas Samitis the contribution can be paid in instalments. The families of carders, spinners, weavers and other artisans as well as the employees of the Kshetra Samitis, from whom the Samitis can recover the dues without difficulty will be given this facility. Family members will be given cards in which will be entered the name and other particulars of every member of the family. In the case of sickness of any of the members of the family, the ailing person will be entitled to have the benefit of treatment offered under the Scheme through the area dispensary or the central hospital.

During 1958-59, some 2,000 members are expected to be enrolled. It is proposed to increase membership to 4,000 in 1959-60, When this target is reached, 4,000 families out of 17,081 families i.e. 23.5 per cent of the total will be associated with the Scheme as members. The contributions by way of membership fees will then form the predominant source of revenue and the people from all walks of life will have the sense of partnership in a co-operative endeavour for the fulfilment of one of their most urgently felt needs.

In the drive for enrolling 4,000 families as members, all sections of population will be approached. Of particular significance is the contribution which the extensive Ambar Charkha programme will make to the successful implementation of the Scheme. The

plan for Khadi envisages the distribution of 3,250 Ambar sets in the Region by the end of 1959-60. Of the 3,250 families which will take to Ambar spinning 2,500 will be enrolled as members of the Scheme by the end of 1959-60. To facilitate spinners joining the scheme, it is decided to accept contributions in the form of yarn. Thus a large section of the population will be enabled to enjoy the services offered under the Scheme by utilising a part of their increased production and income for the payment of membership fees.

The carders and weavers who will get increased employment and income under the programme are also expected to become members in large numbers. Out of 400 weavers who will be benefited under the programme of Khadi as many as 200 will become members. Similarly in respect of carders, out of 23 families 15 will join the Scheme. All these artisans today contribute one anna in a rupee of their wage income to what is called "Janseva" fund created by the Institutions by deduction from the amount which is due to them as their earnings. The amount of "Janseva" fund will be made available to the Kshetra Samitis to meet its expenditure on health and all those who contribute a part of their income to the "Janseva" fund will, by virtue of this contribution, automatically become members of the Scheme. Unlike the spinners who can pay the contribution in hanks and the carders and weavers in respect of whom the deduction of the amount of contribution will be made at the source, the other artisans will pay their contribution in cash.

One significant point regarding membership : The scheme seeks to extend the benefits of medical services to the people of the Region largely through the development programme it has undertaken for the Region. Of the 4,000 families which are expected to become members of the Scheme as many as 2,500 families will have taken to Ambar Charkhas and 250 families will be from among the other artisans engaged in Khadi and 250 from the families engaged in other village industries. Thus out of 4,000 some 3,000 families,

i.e. 75 per cent of the total, will be from among those who will benefit directly by the development programme. Village industries will thus make a substantial contribution to the provision of health services to the people of the Region.

It should not be understood, however, that the health scheme seeks to serve mainly one class of people in the Region. The spinners who are expected to join the scheme in bulk belong to all the socio-economic groups in the Region. The health programme will thus reach out to all the sections of the people, most of whom will be helped to find resources for becoming members by employment opportunities through the development of industries, especially Khadi.

Extension of Health Services :

The area covered under the Scheme comes to more than 200 sq. miles, the farthest villages being as far off as 15 miles from Dhanaura. To serve all the distant villages, therefore, it is proposed to set up 4 dispensaries at convenient places in the Region. Each of the dispensaries will be in charge of one qualified medical practitioner who will work under the supervision and guidance of the Superintendent of the hospital at Dhanaura. Cases of minor ailments will be treated at the dispensary. The hospital will treat serious cases referred to it by the dispensaries as also cases coming directly to it from the surrounding villages.

During 1959-60 it is proposed to strengthen the various departments of the hospital. Mention has already been made of the need to start maternity and gynaecological ward when the lady doctor joins the hospital. The operation theatre which is well-equipped for minor operations will be provided with equipment for anasthesia required to take up cases of major operations. The Dental department has already undertaken to supply dentures. It is proposed to instal X-ray equipment to facilitate better diagnosis. The hospital may also be equipped for testing eyesight of patients. Manufacture

of Ayurvedic medicines has already been undertaken and will be further strengthened during the year.

The rules and regulations framed by the Health Committee give details relating to the administration of the services. While consultation and examination will be completely free for members, administration of other benefits of the Scheme are subject to rules framed for the purpose. In respect of minor ailments, consultation as well as medicines will be free. For other services such as hospitalisation, operations, supply of dentures as distinguished from treatment of dental diseases, hospital care during confinement as distinguished from ante-natal and post-natal examination and advice, will be provided on payment of fixed charges.

The specialist services and facilities of hospital care and treatment will be provided to patients coming to the hospital in the normal course. In addition to this, the group of doctors working in a single establishment will make it possible to provide round-the-clock services to people in emergency cases. Also the doctors pay home visits in cases of need on payment of prescribed fees and actual transport charges.

The dispensaries and the hospital cater to the needs even of non-members on payment of full charges. Members also are charged for special services though at concessional rates.

The financial position of the Health Scheme during 1959-60 is expected to be as follows :—

Table 4—Estimated Cost of Health Scheme 1959-60

Receipts		Expenditure	
Sources	Amount (Rs)	Item	Amount (Rs)
1. Membership fees from 4,000 families.	48,000	1. Non-recurring Expenditure on equipment :	
2. Contribution from individuals at the time of social function.	5,000	a) X-ray plant.	12,000
		b) Microscope	1,800
		c) Anasthesia	2,000
		d) Oxygen Cylinders	500
		e) Boiler	250
3- Donations from Individuals.	2,000	f) Dental Chair	1,000
		g) Gynaecological & Surgical equipment	1,000
		h) Eye Dept. equipment	1,500
		i) Miscellaneous	2,000
4. Contribution from Institutions :			
A) Kshetra Samitis.	15,000	2. Recurring Expenditure :	
		a) Medicine	20,000
		b) Contingency	5,000
B) Cane-Development Union Ltd. Amroha	15,000	c) Salary of staff	25,000
5. Receipts from patients.	5,000		
		3. Excess of Receipts over estimated expenditure to be transfered to reserve fund.	18,450
Total	90,000	Total	90,000

Dhanaura is a pioneer in undertaking a contributory healt scheme in a rural area. It is no doubt an ambitious project. It is so in more than one respect. First of all the Scheme envisages a big expenditure judging from the levels of income of the people in rural areas. With the pronounced tendency of qualified personnel to gravitate towards cities, the problem of recruitment presents serious difficulties. Credit is of course due to the present staff for making the Scheme popular. No less deserving is the courage and determination which the local leaders have shown in mobilising popular support for the Scheme. All these are promising signs so necessary for the gradual emergence of a comprehensive health scheme to extend service unto the last man in the Region.

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CHAPTER FOUR

DEVELOPMENT OF KHADI

Regional Background

In the context of the adverse forces which have been in operation for several decades and which have brought about a decline in this important village industry, planned efforts become essential to re-suscitate it and enable to it occupy its proper place in the economy of the Region. Revolutionary changes have taken place in the techniques of the different processes of the textile industry such as carding, spinning, weaving and printing. The new knowledge underlying these changes should be utilised in the existing structure of the Khadi Industry of the Region with a view to imparting it the strength it needs to survive under the present conditions. The powerful support which Khadi enjoyed as a symbol around which rallied the fighters of freedom has not only given it the much-needed lift but also built a sentimental value for it in the nation. Khadi has received fresh impetus during the two Five-Year Plan. On the whole, however, the approach to Khadi has been one of sympathy for the poor under-employed. If, instead of remaining as a relief measure Khadi has to attain a place of pride in the economy of the nation, the 'sympathy' approach should give place to the " scientific " approach. Instead of the static economiy conditioning techniques, productivity has to be raised with the aid of mechanical power consistent with the needs of full employment to provide workers a living wage. Under the Dhanaura Regional plan, Khadi will be developed in course of time from the point of view of the scientific approach.

The Dhanaura Region offers a suitable environment for the development of Khadi. Even to this date it continues to be an important handicraft in the Region. Inspite of serious inroads made by the mill made cloth, the artisans engaged in the processes such as carding, spinning, weaving, dyeing and printing have shown tenacity to stick to their ancestral occupations. They have now shown willingness to adopt better techniques of Khadi production. The Kshetra Samitis sponsored by the Intensive Area Scheme have gained considerable experience of Khadi work during the last three years They have built up a cadre of experienced Khadi workers. As for the people of the Region adversity has been their great teacher. Continuous bad seasons have vividly brought to their mind the importance of balancing agriculture with Khadi and Village Industries. They are taking to Ambar Charkha with a new zeal.

This background makes it possible to undertake a fairly ambitious plan for the development of Khadi in the Region. Prior to the formulation of the plan, a random sample survey was conducted and data regarding the working of the artisans engaged in the processes of Khadi were collected. Along with it were collected the data regarding the consumption pattern of cloth in the Region. On the basis of these data and considering the progress of Khadi till the end of the year 1958—59, the development plan was formulated for 1959—60.

The survey shows that the number of families engaged in the different processes of Khadi in the Region during 1957—58 were as follows:

Table 1—Employment in Various Khadi Processes

S. No.	Item	No. of families	Percentage of total artisans
1.	Carding	138	3.30
2.	Spinning		
	(a) Traditional charkhas	3615	81.20
	(b) Ambar Charkhas	295	6.60
3.	Weavers	355	8.00
4.	Dyeing & Printing	40	0.90
	Total:—	4,443	100.00

Evidently none of the processes of Khadi has been completely wiped out in the Region which continues to command the resources in personnel required for the production of Khadi. The number of families having Ambar Charkhas which is fairly large is an indication of the changes taking place in the industry through the efforts of the Intensive Area Organisation for the revival of Khadi in the Region.

Carders: The survey gives the number of persons engaged in carding in the Region as follows:

Table 2 –Employment in Carding (Areawise)

S. No.	Name of the Area	Total No. of carders families	No. of carders families surveyed
1.	Dhanaura	32	4
2.	Deengra	27	4
3.	Kamelpur	32	3
4.	Karaundi	25	2
5.	Khadgujar	22	2
	Total	138	15

In the 15 families surveyed, there are 19 male members who are engaged in carding work. PracticalIy all the spinners on traditional charkhas do the work of spinning of " Ruvad " and carding of cotton for spinning themselves; and the professional carder's services are utilised for carding of cotton required for preparation of beddings. The demand for the latter is spread from October to February.

The income of the 15 families from carding came to Rs. 4,770/- during 1957—58. This gives an average of Rs. 318.00 per family. The return to the persons employed in carding work comes to Rs 1.05 per person per work day. The average production comes to 2.59 seers per work day. The charges for carding thus work out at Rs. 0-3-6 per seer of carded cotton.

Spinners: Out of about 17,000 families in the Region 10,000 families may be safely assumed to be working on traditional charkhas. The survival of the spinning wheel on such a scale in the face of the competition of the mills needs an explanation. According to the time-honoured custom in the Region, the cotton from the **lihafs** is replaced every year in most of the cases and in other cases the replacement is done once in two years. On an average every year about 5 to 6 seers of used cotton becomes available for spinning. to a family. The cotton which thus becomes available for spinning is locally known as " Ruvar " and is invariably of low counts. It is utilised for the weaving of rough cloth, such as Daris, Chaddars, etc. A part of the "Ruvar" yarn of comparatively better quality is utilised for the weaving of shirting cloth also.

The cotton which goes waste in the mills is sold in the market. The traditional charkha spinners buy such cotton and sell the yarn to weavers who use it in combination with the mill yarn. The practice of spinning mill waste cotton is fairly widespread in the area.

Prior to the functioning of the Intensive Area Organisation the spinners dealt directly with the weavers. Difficulties were experienced under this system of direct dealing between the spinners and weavers. The Kshetra Samitis regularised this work excepting of course the dealings between the mill waste cotton spinners and weavers. Also they began organising the production of better Khadi by supplying cotton and new charkhas to spinners and providing them the necessary training. In 1957—58 it started parishramalayas for Ambar training and distributed Amber Charkhas on hire purchase system. At the end of 1957—58 the number of trained spinners was as follows:

Table 3—Trained Spinners in 1957—58

S. No.	Item	Number
1.	Traditional Charkha spinners	3615
2.	Ambar Charkha spinners	295
	Total	3910

Ambar charkhas have raised the quality of yarn produced in the Region. Yarn ranging from 16 to 30 counts is being produced on Ambar Charkhas as compared to the considerably lower count of traditional yarn.

With the production of higher grade of yarn, it has become possible to undertake production of a wide variety of cloth which was not possible before. With the lower grade of yarn only a limited range of varieties of cloth viz. Chaddars, Towels, rough shirting could be produced. The lower grade yarn was not fit for the production of dhotis, saris and finer varieties of shirting. The Ambar Charkhas have created the possibilities of production of these varieties and the Region is now in a position to undertake a more diversified pattern of Khadi production.

Weavers: Handloom weaving is a major cottage industry of the Region capable of giving full-time occupation. Unlike

other artisans such as spinners, oilmen, carpenters, blacksmiths, most of the weavers are landless.

(a) **Ruvar Yarn Weavers:** Of the 355 families of weavers 33 families were selected and information regarding their working during 1957-58 was collected. Of the 33 families 19 are engaged in the weaving of 'Ruvar' only. The following Table shows the production of these families during 1957–58.

Table 4—Production

S. No.	Item	No. of Pieces	Sq. yds.
1.	Than	1,899	17,190
2.	Dutai	98	860
3.	Dobarra	104	1,560
4.	Khes	43	175
5.	Dhoti	40	100
6.	Dari	137	520
	Total	2,321	20,405

The Ruvar yarn weavers are able to weave 9 sq. yds. of cloth a day. Practically all of them have pit looms with fly-shuttle.

The pit loom with all its accessories costs about Rs. 100/- All the parts of the looms are available in the near-by towns such as Amroha and Chandpur, which are on the border of the Region and are easily accessible.

The pit looms are as good as the frame looms in point of technical efficiency. Due to heavy rains during monsoon, some times the subsoil water level rises and the pits are filled with water rendering it impossible for the weavers to work. Installation of frame looms can overcome this difficulty but the limitations of living space and finance present difficulties in adopting such looms.

These 19 families of Ruvar yarn weavers come under the following income groups :

Table 5—Income Groups among Ruvar Weavers

S. No.	Income group (Rs.)	No. of families	Percentage to the total
1.	Below 100	...	...
2.	101 to 200	3	15.80
3.	201 to 300	3	15.80
4.	301 to 400	9	47.40
5.	401 to 500	2	10.50
6.	501 to 600	2	10.50
Total		19	100.00

Thus 31.00 per cent families had an income below Rs 1/- per day, 58 per cent above Rs. 1/- per day, only 10.50 per cent being in the highest income group of Rs. 500/- to 600/- per annum. Actual income of these two families was Rs 520/- and Rs. 535/- per annum. A 'Ruvar' yarn weaver is able to produce 9.00 sq. yards of cloth in a day. At the Rate of As. /4/- per sq. yd. the present equipment of the weavers can yield an income of Rs. 2.25 per day. Actual earnings of the weavers fall short of this on account of shortage of yarn which leads to an under-utilisation of the available equipment.

The production and supply of traditional and Ambar yarn effectively solve the problem of 'Ruvar' yarn weavers. Given sufficient training, the ruvar yarn weavers can produce 8 sq. yds. of traditional as well as Ambar Khadi. The rates of weaving of traditional and Ambar Khadi compare favourably with those for 'Ruvar' yarn. The weaving charges are As. /6/- per sq. yd. in respect of traditional Khadi and As. /8/- in respect of Ambar Khadi. Thus the wages of 'Ruvar' yarn weavers can be raised to Rs. 3/- per day through the supply of traditional yarn and to Rs. 4/- per day through the supply of Ambar yarn.

ii. **Mill yarn Weavers** : Out of 33 families surveyed, 14 families are weaving mill yarn. Of these, 2 families are using only mill yarn and the remaining 12 use a mixture of mill yarn and handspun mill waste cotton. The mill yarn is used in the warps and the handspun cotton waste yarn in the wefts.

The production of the 14 families during 1957-58 was found to be as follows :

Table 6—Production of some Mill Warn weavers (1957-58)

S No.	Item	Thans	Sq. Yds.	Value Rs
1.	Mill & Cotton Waste yarn	12,795	11,5,155	53,580
2.	Mill yarn	1,285	11,565	8,675
	Total	10,480	1,26,720	62,255

Of the 14 families surveyed 3 have got the tana machine. The average cost of a tana machine is about Rs. 150.00 It is a hand operated implement which is owned by an individual weaver but is used in common by a group of families. The use of this implement adds considerably to an increase in the productivity of the mill yarn weavers.

(a) **Mill-Cum-Cotton waste yarn weavers:**

The following Table shows the cost structure of one **than** (piece) woven by the mill-cum-cotton waste yarn weavers.

Table 7—Cost of production of mill yarn piece

S. No.	Item	Qnt. (per than)	Value (Rs)
1	Mill yarn	0.75 lbs	1.25
2	Mill waste cotton yarn	2.50 lbs	1.75
3	Other expenses	...	0.25
	Total	...	3.25

Thus more than 3/4 of the total yarn required per than is the cheaper waste cotton yarn. This enables the weavers to reduce considerably the cost of the cloth produced by them,

The cost of one than 12 yds. ×27″ of cloth produced comes to Rs. 3.25. The price at which the weaver is able to sell his cloth ranges from Rs 4 to Rs 4.5 per than which leaves a surplus of Rs 0.75 to Rs 1.25 per than. On this basis the daily earnings of the weavers who are able to produce 3 thans come to Rs 2.25 to Rs. 3.75. The actual income of the 12 families came to Rs 11,995/- during 1957-58 giving an annual and daily income per family of Rs. 999.58 and Rs 3.33 respectively.

(b) **Mill Yarn Weavers:**

The purely mill yarn weavers are able to produce 2 thans of cloth every day, as compared to 3 thans in the case of mill-cum-cotton waste yarn weavers. The average width of the cloth produced by the mill yarn weavers is 32″ as compared to 27″ in the case of mill-cum-cotton waste weavers. Also the texture of the pure mill yarn cloth is better. Because of these factors, the production of mill yarn weavers comes to 2.1 thans a day as compared to 3.5 thans of the mill-cum-cotton waste yarn weavers. In terms of sq. yds. the production of the former comes to 21 sq. yds. a day as compared to 31.5 sq. yds of the latter.

The average cost of production of one than comes to Rs 5. The selling price obtained by the weavers is Rs 6.50 per than, that is, Rs 65 per sq. yd. The earnings of the two mill yarn weavers who produced 1285 thans during 1957–58 amounted to Rs 1930 which gives an annual and daily income of Rs 965 and Rs 22 respectively.

We have reviewed the working of the ruvar as well as mill yarn and cotton wast yarn weavers. It is seen that as far as the technique is concerned the weavers in all groups have the same

type' of equipment, viz pitloom with fly shuttle. However, there is one significant difference between the handspun ruvad yarn weavers and the mill-cum–cotton waste yarn weavers. The latter group is able to make warps of the length of 600 to 700 yds on the tana machine.

There is an urgent need for increasing the production and income of the 'Ruvad' yarn weavers by providing them better quality of handspun yarn. The programme of Khadi which the Intensive Area Scheme has undertaken can fully meet the needs of this group of weavers and enable them to obtain whole-time work all the year round. With the successful implementation of Ambar programme and the gradual improvement in the quality of Ambar yarn, it will also become possible to convert an increasing number of mill yarn weavers to the weaving of handspun yarn.

Dyers and Printers

The dyeing and printing work is associated with a section of Muslim community who are locally known as Chhipis. As in weaving, this work has also assumed the character of a family occupation. Women of the Chhipi families help in the making of colours and the upkeep of the chhapas and cloth. The skill required for the work is transmitted by the elders of the family to the youngsters who are associated with the work from an early age.

Owing to the competition of the organised sector of the cotton textile industry, this group of artisans has suffered very considerably. The decline in handspinning and hand–weaving has led to a shrinkage in the demand for the skill of the local Chhipis. Large numbers of them are compelled to seek alternate avenues of employment to supplement their income from their hereditary occupation.

Of the 40 families of Chhipis in the Region, 3 were selected for the purpose of survey. Of these one is engaged in this work all the year round and the remaining two have to take to other vocations as supplementary sources of income.

The Chhipis of the Region are left with only one type of work, viz. printing of Lihafs and Gaddas. In actual working the Chhipis purchase the Lihafs from the local weavers and sell them to traders after printing work is done. They also work for wages on behalf of the traders and consumers. In the first case the Chhipis have to invest their resources for the purchase of cloth and in the later, they only perform a service.

The aggregate income during 1957-58 of the three families from whom information was collected came to Rs 1200 Of the three families one which was engaged throughout the year, earned Rs 750 and the remaining two earned Rs 310 and Rs 140 each. Only one out of the three families, has earned an average income of Rs 2.5 per day. The daily earnings of two out of three families were below Re 1 per day, the lowest income recorded being as low as Re 0-7-3 per day.

The low earning of these families is a measure of the sad plight which has overtaken the Chhipis of the area. The limited range of work done by them and their need to seek supplementary sources of income during the greater part of the year, have very adversely affected their skill. Their technique of preparation of colours is crude, their blocks are out-moded, and the use of improved implements such as spray-gunsits is conspicuous by its absence. These factors lead to a decline in the standard of their work which in its turn affects their employment and income. There is thus a vicious circle which can be broken only by a comprehensive programme designed to promote the production of Khadi and create the necessary conditions for the development

of dyeing and printing work in the area. Simultaneously efforts will have to be made to raise the skill of the artisans by affording them opportunities to work under a suitably trained person in a well-equipped dyeing and printing unit.

II

Consumption Pattern

The consumption pattern in respect of different varieties of cloth was studied for a sample of 100 families whose size and composition are shown in the Table below.

Table 8—Cloth Consumption Pattern (sample survey)

S. No.	No. of families surveyed	No. of persons in the family			
		M	F	C	Total
1	100	210	167	272*	649

*Below 14 years

With a total number of 17,081 families in the Region the average size of the family is 6.49.

The following Table shows the consumption of cloth of 100 families during 1957–58.

Table 9--Consumption of Cloth sq. yds. count Wise

S No.	Item	1–10	10–14	14–18	18–20	20–30	above 30	Total
1.	**Mill**							
	i Cotton	9	1150	1178	2163	3274	910	3684
	ii Silk	17	...	4	84	59	165	349
	iii Woollen	39	41	29	2	20	...	128
2.	**Khadi**							
	i Cotton	1272	361	53	96	171	...	1953
	ii Silk	...	...	...	...	...	...	...
	iii Woollen	64	...	...	...	...	...	64
3.	**Handloom**							
	i Cotton	425	137	93	198	32	...	865
	ii Silk	...	...	...	...	6	...	6
	iii Woollen	...	...	...	...	...	...	...
	Total	1826	1689	1357	2543	3562	1075	12069

Total consumption of cloth of the 100 families is 12069 sq. yds. The per capita consumption of cloth comes to 18.59 sq. yds. The annual expenditure on clothing comes to Rs 19.53 per capita and Rs 126.61 per family. The value of cloth consumed in the Region roughly comes to Rs 1/– per sq. yd.

The mill made cloth accounts for 75.9 percent of the total consumption of cloth in the Region, 87 percent of which is below 30 count, only 13 percent being of higher counts. Cotton cloth represents 94.8 of the total consumption of mill made cloth, silk and woollen constituting 3.8 aud 1.4 percent respectively. Inspite of the severe cold of the winter the consumption of woollen cloth is low because of the low purchasing power of the people.

Khadi accounts for 16.7 percent of the total consumption of cloth of which woollens account for nearly 3.2 percent. These are mostly **Kambals** which can compare favourably with the mill made products of equivalent quality and price range.

The consumption of handloom cloth comes to 7.4 percent of the total cloth consumption of the Region. Most of this is cotton cloth.

As seen above Khadi accounts for 16.7 percent of the total consumption in the Region which is due to the tradition of ruvar spinning and weaving. The ruvar yarn is utilised for shirting, towels, daris and beddings. After the starting of the Intensive Area Scheme in the Region, the consumption of Khadi of better variety is rising and the people have taken to wearing Khadi Dhotis, Saris, Coats, etc., and the introduction of Ambar Charkhas is expected to make a significant contribution in this respect.

In the sphere of consumption of handloom product, Lihafs and other bedding cloth and to a certain extent hosiery, long cloth

and shirting are important. 1569 sq. yds of cloth has been consumed for bedding purpose which is 58.2% of the total handloom cloth. (See appendix I. C.). Fine handloom cl th has not yet made much headway in the Region. Hosiery products are also important in the sphere of handlooms. This and other finer varieties of handloom cloth are imported from outside.

The present level of consumption of the different varieties of cloth as detailed in Table 9 sets out the scope for the development of khadi in the Region. The position of khadi is quite strong as far as inferior varieties such as Beddings, Daris, Long cloth and shirting are concerned. The production of "Ruvar" Khadi organised on the bassis of swavalambana has already carved out its place in the economy of the Region.

With the help of traditional charkhas, yarn upto 12 counts was produced upto now. The introduction of Ambar Charkhas has made it possible to produce yarn upto 30 counts on a sufficiently large scale. As shown in Table 9, 89.5 percent of the mill cloth consumed in the Region is of counts below 30. There is thus scope for meeting this requirement by implementing the Ambar Charkha programme in the Region.

Khadi Production In 1958–59

We have reviewed briefly the position of different groups of artisans engaged in Khadi Industry in the Region during 1957-58. It would be useful to get an idea of the targets achieved in Khadi production during 1958-59 before formulating the programme for 1959-60.

The Ambar Charkha programme was undertaken by the Intensive Area Organisation in 1957-58. By the end of March 1959 Ambar spinners will be trained as follows :

Table 10—Ambar Training Programme

S.No.	Item	No.
1	No. of Spinners trained by 31-3-58	310
2	No. of Ambar Charkhas Distributed by 31-3-58	295
3	No. of Spinners trained from 1-4-58 to 30-9-58	515
4	No. of Charkhas distributed 1-4-58 to 30-9-58	502
5	Total No. of Ambar Charkhas working by 30-9 58	797
6	Expected No. of Spinners to be trained from 1-10-58 to 31-3-58	1,220
7	Expected No. of Ambar sets to be distributed from 1-10-58 to 31-3-58	1,203
8	Total No. of charkhas to be distributed by 31-3-59	2,000

The following Table shows the production of different varieties of yarn during 1957-58 and 1958-59.

Table 11—Production of Yarn (Mds)

S. No.	Item	1957–58	from 1-4-58 to 30-9-58 actual	from 1-10-58 to 31-3-59 estimated	Total estimated yarn production during 1958-59
1	Ruvar	1,520	900	700	1,600
2	Yarn on traditional charkha	443	200	200	400
3	Ambar Yarn	55	82	300	382
	Total	2,018	1,182	1,200	2,382

The Table shows that the production of Ruvar and yarn on traditional charkha will practically remain steady with a marked rise in the production of Ambar yarn. As seen above the programme for the training of spinners and distribution of Ambar

Charkhas is rapidly expanding, leading to an increase in the production of yarn. The rise in the production of Ambar yarn is expected to be achieved through increasing the number of charkhas distributed from 295 in 1957-58 to 797 in the first half of 1958-59 and to 2000 by the end of 1958-59. The production of yarn per charkha is also expected to rise from 2 hanks to 4 hanks per day per charkha during second half of 1958-59.

The production of Khadi during 1957-58 and 1958-59 is shown below.

Table 12—Khadi Production (1957–58 & 1958–59)

Sl. No.	Item	sq. yds,	Total
1	**Production during 57-58**		
	(i) Traditional Khadi	2,28,610	
	(ii) Ambar Khadi	9,057	
			2,37,667
2	**Production from 1-4–58 to 30-9-58**		
	(i) Traditional Khadi	1,34,266	
	(ii) Ambar Khadi	24,653	
			1,58,919
3	**Estimated Production during 1958–59**		
	(i) Traditional Khadi	3,10,266	
	(ii) Ambar Khadi	1,32,653	
			4,42,919

The production of Ambar Khadi has recorded a significant increase during 1958-59. Already the production of Ambar Khadi has risen from 8057 sq. yds. in 1957-58 to 24,653 sq. yds. in the first half of the year 1958-59. With the gradual strengthening of the machinery for the implementation of the Ambar

programme the rate of production of Ambar Khadi will increase still further. The number of Ambar Charkhas is expected to rise from 797 in September, 1958 to 2000 by the end of 31st March 1959. The production of Ambar Khadi will increase from 9057 to 1,32,653 sq. yds. by March 1959.

Checks against adulteration of yarn :

Besides gearing up its organisation and resources to raise the production of Khadi, the Intensive Area Organisation has planned to tighten up its machinery to exercise more rigorous checks to prevent the mixing of mill yarn with handspun yarn. The following measures are taken for the purpose—(1) Application of specific colours to a part of all the hanks of yarn before supplying it to the weavers. (2) Appointment of supervisors who pay frequent surprise visits to the places of weavers. These supervisors help the weavers in improving the standard of workmanship and exercise supervisoion and checks to prevent the mixture of yarn.

A more radical measure was introduced from 1-10-58. All the spinners have been instructed to give reverse twists to the yarn. This distinguishes the handspun yarn from the mill yarn and operates as a fool-proof method of guarding against the malpractices by the spinners and weavers.

Quality control Measures :

Till the end of 1957-58, the five Intensive Areas in the Region had their seperate arrangements for the weaving of yarn produced in their respective areas. From 1958-59, a central unit is set up which collects the yarn sorted according to counts from the areas and makes arrangement for weaving. The experienced and more efficient workers from areas are pooled and placed in charge of the work of the unit.

These workers carefully ascertain the suitability of yarn for different varieties of Khadi and thereafter supply the yarn to weavers. The central unit has appointed weaving supervisors who periodically visit the weavers at their homes and provide them guidance, besides exercising checks against the mixture of yarn. The emergence of this unit facilitates the allocation for different categories of Khadi in the light of the overall needs of the Region for different varieties of cloth.

IV

KHADI PROGRAMME FOR 1959-60

1. Spinning

In the programme of handspinning, Ambar Charkhas have created significant possibilities of increasing and diversifying the production of khadi in the Region. The number of Ambar charkhas distributed and the quantity and quality of the yarn produced have operated as decisive factors in determining the wages of the artisans engaged in the other processes of Khadi such as carding, weaving, and printing.

As we have seen earlier, the programme for 1958-59 envisages the distribution of 2000 Ambar charkhas in the Region. Average production of yarn per Ambar set had been 2 hanks per day during 1957-58 and with the increase in the efficiency of the machinery for the servicing of distributed Ambar sets, the daily production had registered an upward trend upto $3\frac{1}{3}$ hanks per day upto September, 1958. The productivity of Ambar Charkhas is further expected to rise upto $4\frac{1}{3}$ hanks per day during the remaining period of 1958-59. The charkhas are expected to be plied for $4\frac{1}{2}$ hours a day on an average and produce $4\frac{1}{2}$ hanks a day during the year 1959-60. At this rate 2000 Ambar Charkhas worked for 300 days in the year are expected to produce 27,00,000 hanks of yarn of an estimated value Rs 5,40,000 giving a wage of Rs 3,24,000.

The programme for the year 1959-60 envisages the training of 1,250 additional spinners and distribution of 1,250 Ambar sets. The production of these 1,250 Ambar spinners during and after the period of training is shown below.

Table 13—Expected production of Ambar yarn (1959-60)

S.N.	No. of trainees according to batch	No. of Hanks during training period per-spinner	Production of yarn during training period (Hanks)	Production of yarn after the completion of training (Hanks)	Production Period of after training (Months)
1	325	160	52,000	3,29,062.5	9
2	325	160	52,000	2,19,375	6
3	300	160	48,000	1,01,250	3
4	300	160	48,000	...	...
Total	1,250		2,00,000	6,49,687.5	...

The following Table shows the probable gross earnings of the Ambar spinners during 1959-60.

Table 14—Estimated earnings of Ambar Spinners
(1959-60)

No.	Variety of cotton	Rate of carded cotton Rs per Md	Value of carded cotton	Production of yarn Qty (Hanks)	Production of yarn Value (in Rs)	Gross Earnings of Ambar Spinning
1	L. S. S. Cotton	120	1,87,500	26,81,687	5,36,340	3,48,840
2	Surti Cotton	140	55,000	8,68,000	1,73,600	1,18,600
			2,42,500	35,49,687	7,09,940	4,67,440

The value of Ambar yarn is fixed at 20 nP per hank. The value of yarn comes to Rs 709940/- and the gross earnings from spinning on Ambar charkhas are expected to be of the order of Rs 4,67,440 after deducting the value of the carded cotton. From this should be deducted the cost of repairs and depreciation of the charkhas at Rs 2 per charkha p. m. The total earnings of the 3250 spinners who will produce 35,49,687 hanks of yarn will thus be Rs 4,04,650 during 1959-60. The income of the spinners comes to Re 1 1 nP per hank of yarn. On the basis of the average daily production of 4.5 hanks of yarn, the income of the Ambar spinner will amount to Re 48½ nP per day of 4½ hours and Rs 145.50 per annum.

The following Table shows the expected production of traditional yarn during 1959-60.

Table 15—Expected production of Traditional yarn

(1959-60)

S. No.	Item	Production	
		Qty Mds	Value Rs
1	Ruvar	1,600	1,28,000
2	Cotton	300	48,000
	Total	1,900	1,76,000

The cloth equivalent of the yarn expected to be produced during 1958-59 on traditional and Ambar Charkhas will be as follows :

Table 16—Production of Khadi, 1958-59 (Estimated)

S. No.	Item	Average count	Yarn in Mds	Cloth equivalent (sq. yds.)
1	Traditional Yarn	4	1,600	1,60,000
	(a) Ruvar yarn			
	(b) Cotton yarn	10	300	60,000
2	Ambar Yarn			
	(a) L. S. S. Cotton	22	1,523	5,95,900
	(b) Surti Cotton	28	387	1,73,600
	Total		3,810	9,89,500

While the production of traditional Khadi will decline from 3,10,266 sq. yds. in 1958-59 to 2,20,000 sq. yds. in 1959-60, the production of Ambar yarn as well as cloth will record a steep rise from 382 mds in 1958-59 to 1910 mds in 1959-60. Apart from the increase in production of the order of 470 percent of the preceding year, the finer quality of Ambar yarn will enable the Intensive Area Organisation to produce khadi of different varieties with a view to catering to the needs and tastes of all the sections of the population of the Region,

The following Table shows the expenditure on the training of 1,250 Ambar Charkha spinners during 1959-60.

Table 17—Cost of Ambar Training Programme (Rs)

(1959-60)

No. of spinners to be trained	Tuition fees		Stipends	
	Rate	Amount	Rate	Amount
1,250	Rs 15 p. m. per trainee	54,250	Rs 20 per trainee	25,000
Total		54,250		25,000

The stipend at the rate of Rs 20 for the 3 months training period will be paid to the traineas who will also receive 1½ annas per hank spun by them during the training period.

At the time of purchase of yarn, the institutions make a deduction @ Re ·03 np per hank from the value of yarn spun by the spinners. At this rate the institutions will be able to recover half the price of Ambar Charkhas from the spinners in about 2½ years.

The expenses on the servicing of charkhas during 1959-60 will be as follows:

Table 18—Cost of Servicing Charkhas (1959-69)

Total No. of Charkhas distributed	Requirement of servicing personel		Expenditure in Rs		Total
	No. of Ambar Workers[1]	No. of Mistries[2]	Salaries of Amber workers[3]	Salaries of Mistris[4]	
3,250	65	33	46,800	29,700	76,500

[1] One Ambar worker for every 50 charkhas distributed.

[2] One Mistry for 100 charkhas distributed.

[3] Salary of Ambar workers @ Rs 60 p. m.

[4] Salary of Mistries @ Rs 75/- p. m.

Six months' salary of mistries will be met from the grant which will be made available by the Khadi and Village Industries Commission for the purpose. After the expiry of this period, the expenditure will be met by the Saghan Kshetra Vikas Samitis.

Programme of training of Ambar Instructors and Mistries :

By the end of March 1959, the Intensive Areas of the Region will have recruited 88 Ambar workers. Of these workers, 40 will be absorbed in the work of servicing of 2000 charkhas which will be distributed by 31-3-59 and 48 will be available for the

programme of training and distribution of 1,250 charkhas during 1959-60. The 1250 spinners will be divided into four batches of 300 to 325 trainees each. 30 to 32 instructors will be absorbed in imparting training while the rest will look to the servicing of charkhas.

Purchase and Supply of Cotton :

The Saghan Kshetra Vikas Samiti, Dhanaura will function as the Regional unit for the purchase and supply of cotton to the five Intensive Area Centres operating in the Region. The Samiti had undertaken to do this work in 1958-59 and has at its disposal persons of the necessary experience of purchasing cotton. The following Table shows the funds required for the purchase of cotton.

Table 19—Cotton purchase under the programme

S. No.	Item	Quantity of cotton required (Mds)	Rate per md (Rs)	Value (Rs)
1	L. S. Cotton	1,625	95	1,54,375
2	Surti Cotton	415	120	49,800
3	Desi Cotton	320	70	22,400
4	Other expenses	...	...	6,375
	Total	2,360		2,32,950

The implementation of the forgoing programme of Khadi will call for efficient arrangements regarding purchase and supply of cotton, purchase of yarn from the spinners, arrangements for weaving, dyeing and printing, calendering and marketing. The following organisational structure for the operation of the programme is envisaged.

A. **Regional Units**

(i) Manufacture and supply of charkhas
(ii) Purchase of cotton
(iii) Arrangement for the weaving of yarn
(iv) Dyeing, printing and calendering
(v) Marketing
(vi) Training of instructors and mistries
(vii) Supervision and co-ordination.

B. **Area Units**

(i) Servicing of charkhas
(ii) Purchase and disposal of yarn
(iii) Swavalamban and local sales.

C **Village Units**

(i) Carding
(ii) Parishramalayas.

D. **Home Units**

(i) Handspinning on Ambar and traditional charkhas
(ii) Weaving

Regional Units

The primary requirement for the successful implementation of the Ambar Charkha programme is the supply of Ambar Charkhas of a standard quality. In order to meet this need effectively, the Central Workshop of Dhanaura has been pressed into service since 1958-59. It has undertaken the manufacture of the wooden parts of the Ambar Charkhas. The iron parts are imported. The completed sets of Ambar Charkhas are tested by the Workshop's employees who are trained in Ambar Charkha work and are acquainted with its mechanism.

Arrangment for the purchase of 2360 Mds of cotton will have to be made at the time of harvest. It is not possible for individual

Intensive Areas to make their own arrangement for the purchase of cotton of suitable variety at favourable rates. This will be done by a separate unit which will operate at the regional level.

The present arrangement of purchasing yarn by individual areas and supplying it to the Central unit at Dhanura will continue. Both for raising efficiency and maintaining the purity of khadi, weaving will be organised at the regional level. This unit will look to the production side of Ambar cloth. Dyeing, Printing and calendering will be looked after by a separate regional unit. The marketing of khadi within and outside the Region is assigned to regional marketing unit. Training of instructors and co-ordination of the five areas will be managed by the regional organtsation.

Area Units

The Five Intensive Areas will attend to the work of training of spinners, servicing of charkhas and the purchase of yarn. The Ambar workers will deliver carded cotton to the spinners and also the required spare parts. They will also purchase yarn or arrange for its weaving. The mistries will see that the Ambar Charkhas are properly working and will do the needed repairs.

Village Units

(i) Carding :

The programme envisages the installation of pedal carding machines at different places in the Region. The carding work which was attended to by the spinners is now assigned to trained carders.

(ii) Parishramalayas:

Training in Ambar spinning will be imparted in parishramalayas which will be organised at the village level. The individual spinners will attend these parishramalayas for 3 months after which they will be provided with charkhas on hire-purchase basis.

Home Units

The chain of organisations operating at different levels will have as their ultimate objective meeting the various needs of the

individual Ambar spinners and weavers with a view to raising their working efficiency.

(iii) Weaving Programme

We have seen that out of 355 weavers in the Region, 294 are weaving Ruvar yarn, 130 are using mill-cum-handspun waste cotton yarn and 21 are weaving purely mill yarn. The weavers in the second and the third group were found to be working throughout the year on their looms and earning an income of Rs. 3.33 and Rs. 3.22 per day respectively on an average. The Ruvar yarn weavers who are handicapped by comparatively inferior quality and short supply of yarn were underemployed and their income from weaving was as low as Re 1 per day.

The substantial increase in the production of yarn envisaged under the programme for 1959-60 is potentially capable of solving the problem of under-employment of the Ruvar yarn weavers and raising their income considerably above their present level. As a matter of fact even after these Ruvar weavers are enabled to take to the weaving of handspun traditional and Ambar yarn, the Intensive Area Organisation will be left with large stocks of yarn, fort he weaving of which special arrangements will have to be made.

On an average a family of weavers is able to weave 9 sq. yds. of Ruvar Khadi per day. In the case of traditional Khadi as well as Ambar Khadi the productive capacity of the loom is 8 sq. yds. At this rate of productivity the number of weavers required for the weaving of yarn which will be produced during 1959-60 will be as shown below :

Table 20—Weavers required under the Programme

S. No.	Production of yarn		Cloth Equivalent	No. of weavers required
	Variety	Qnty (Mds)		
1	Traditional			
	(a) Ruvar	1,600	1,60,000	59
	(b) Cotton	300	60,000	15
2	Ambar	1,910	7,69,500	325
	Total	3,810	9,89,500	399

Out of the total of 204 Ruvar yarn weavers of the Region, 75 were enrolled by the Intensive Area Organisation by the end of 1957-58. This number of the traditional yarn weavers enrolled has increased to 115 by the end of September 1958. It means that the Intensive Area Organisation has established contacts with as many as 56.3 percent of the Ruvar weavers of the area. In addition, as many as 128 weavers belonging to villages on the borders of the Region have been enrolled by the Intensive Area Centres for Khadi weaving making a total of 243 weavers. By the first half of 1958-59, 1,34,266 sq. yds. of traditional Khadi was produced by them, giving an average of 553 sq. yds. per weaver for the six months period. As against the capacity of 8 sq. yds. the weavers produced 3.55 sq. yds. per day. There is thus surplus capacity left for getting increased quantities of yarn woven without much difficulty.

The weaving programme of the Intensive Area Organisation has been framed from the points of view of the immediate need of getting the Ambar yarn woven and the long term objective of training local weavers. A practical way out of the immediate difficulty was to enroll weavers from outside the Region to dispose of the stock of yarn and simultaneously to undertake the

training of local weavers. A 6-month training class was organised to impart training in weaving of Ambar yarn. The training class also served as demonstration centre to local weavers a few of whom were induced to take to the weaving of Ambar yarn on their own. The standard of weaving of a majority of these weavers is not upto the mark and they need training and guidance to improve their weaving standard and attain the productivity of 8 sq. yds of Ambar Khadi.

The programme for 1959-60 envisages the production of 2,20,000 sq. yds. of traditional Khadi and 7,69,500 sq. yds. of Ambar Khadi. 74 weavers will be required for the weaving of traditional Khadi and 325 for the weaving of Ambar Khadi. The Organisation already has more than the required number of traditional Khadi weavers. The Ambar weavers on the roll of the Intensive Area Organisation falls short of the requirement under the plan for 1959-60. 100 weavers have already acquired the skill and experience of weaving Ambar yarn and 280 weavers will have to be trained as set out below.

Table 21—Training Programme for Weavers

S. No.	Period of training	No. of weavers
1	3 months	175
2	6 months	75
3	one year	30
	Total	280

Those among the Ruvar yarn weavers who have not had any experience of weaving cotton yarn upto 12 counts will need 6 months' training to enable them to attain the desired standard of efficiency. 75 weavers of the Region will be provided this training.

In the case of weavers who have already had some experience of weaving handspun cotton yarn upto 12 counts, a three-month refresher course will be enough. Under the programme each of the Intensive Area Centres will conduct such refresher course to train the required number of weavers. Total number of weavers who will thus be trained is 175. Out of this 75 will be from outside the Region and 100 will be from among the local weavers.

Besides these training classes it is proposed to start one Bunai Vidyalaya in the Region. 30 persons will be admitted to this course. They will be given an intensive training for specialisation in weaving.

These persons will complete their training and start working some time in 1960-61. Through their work they will constantly guide and inspire the other weavers towards higher standard of workmanship and productive efficiency.

The weaving programme will involve expenditure as follows.

Table 22—Cost of Weavers' Training (Rs)

S. No.	Item	Tuition fees		Stipends		Total (Rs)
		Rate	Amount (Rs)	Rate	Amount (Rs)	
1	Three months refresher course for 150 trainees	Rs. 15 per weaver P. M.	2,250	30	4,500	6,750
2	Six months training for 75 weaver	Rs 15 per weavers P. M.	6,750	30 per trainee	13,500	20,250
3	Bunai vidyalaya for 30 trainees	Rs 25 per trainee P. M.	9,000	50 per trainee P. M.	18,000	27,000
	Total		18,000		36,000	54,000

iii. Dyeing and Printing

Of the total production of 9,89,500 sq. yds. of Khadi, 4,55,500 sq. yds. are expected to go through the process of dyeing and printing. The production of printed cloth suited to the taste of consumers calls for a higher standard of workmanship. The Chhipis of the Region with their present outmoded techniques are not in a position to meet the demand for the printed cloth of the desired quality. The plan, therefore, proposes to set up one dyeing and printing unit for the Region. With the help of the 40 families of Chhipis in the Region it will process Khadi as follows.

Table 23—Output of printed cloth under the Programme

S. No.	Items	Number	Sq. Yds.
1	Lihaps	50,000	3,55,500
2	Gaddas	2,000	18,000
3	Thans (coloured)	1,900	23,000
4	Chints (Ordinary Print)	4,200	50,000
5	Chints (Spray Print)	650	8,000
6	Saris	300	1,500
	Total		4,55,500

At present a small dyeing and printing unit has been set up at Deengra which has raised the standard of workmanship under the guidance of an experienced technician. To cope up with the expansion of Khadi production it is proposed to set up a full-fledged unit involving the following expenditure.

Table 24—Expenditure on Printing Unit

S. No.	Items	Amount (in Rs)
	A. Non-Recurring Expenditure :	
1	Land & Building	20,000
2	Machinery & Equipment	10,000
	Total A.	30,000
	B Working Capital :	
3	Raw Materials (4 months' requirements)	10,000
4	Wages & Salaries 4 months)	25,000
5	Miscellaneous (4 months)	2,000
	Total B.	37,000
	Total	67,000

A qualified and experienced person will be in the overall charge of the unit. He will be assisted by two persons, one of whom will attend to the dyeing and the other to the printing side. Besides these 3 persons, 90 persons from along the local and out side Chhipis will be employed on piece-wage basis. Their earnings are shown in the following table.

Table 25—Earnings of Chippis

S. No.	Item	Quantity	Sq. Yds.	Wages
1	Lihap	50,000	35,500	62,500
2	Gaddas	2,000	18,000	6,620
3	Saris	300	1,500	450
4	Chints (Ord. Prints)	4,200	50,000	6,000
5	Chints (Spray Prints)	650	8,000	500
6	Than (coloured)	1,900	23,000	1,900
	Total		4,55,500	77,970

The total wage bill of the unit is estimated to be of the order of Rs 77,970 during 1959-60. On an average an individual Chhipi who will be employed in the centre will earn Rs 866.3 per annum and Rs 2.88 per day.

Equipment :

Apart from the purchase of more common equipment such as pans, days, printing tables etc., the unit will install equipment such as Jigar machine and spray guns. The Jigar machine of an estimated cost of Rs 2500/- will help in improving the dyeing work. The spray gun will help the unit to take up varieties of printing work.

iv. The Impact of Khadi Programme

The foregoing pages present a review of the plan for the development of Khadi in the Dhanaura Region. The plan seeks to raise the production of Khadi to meet more than 50 percent of the requirement of cloth of the Region. To this end, the programme seeks to integrate in the economy of the Region the improvemants in the technique of carding, spinning, dyeing, printing etc. Also the artisans engaged in different processes will be provided with training in the use of improved implements, so as to provide them fuller employment at higher levels of income. The comprehensive programme covering all aspects of Khadi production is expected to impart to it the necessary strength to sustain its future development.

Production :

The following Table shows the production of Khadi during 1957-58, 1958-59 and 1959-60.

Table 26 –Khadi Production in the Region (1957 to 60)

Item	Production of Khadi Cloth					
	1957-58 Sq. Yds.	Percentage	58-59 Sq. Yds.	Percentage of (3)	59-60 Sq. Yds.	Percentage of (3)
1	2	3	4	5	6	7	8
1	**Traditional Charkhas**						
	(A) Ruvar	1,31,200)	100	3,10,266	136	1,60,000)	96
	(B) Cotton	97.400)				60,000)	
2	**Ambar**	9,057	100	1,32,653	1,467	7,69,500	8,496
	Total	2,37,657	100	4,42,919	186	9,89.504	416

The population of the Region is 1,00,000. At the current rate of cloth consumption which is 18.59 sq. yds. per capita, the total requirement is 18,59,000 sq. yds. of cloth. The production during 1959-60 is expected to be 53.2 percent of the requirement of the Region. The switch-over to the programme of Ambar Charkhas has made it possible to meet the needs of the people at a fairly high rate.

Employment and Income :

The following Table shows the employment and income of the artisans who will be engaged in the different processes of Khadi Industry during 1959-60.

Table 27---Employment in Khadi under the Programme

S. No.	Item	Employment *(in mandays) 1959-60	Income (Rs) 1959-60	Income per Manday 1959-60	Income per Manday(Rs) 1957-58
1	Carding	13,200	27,500	2.06	1.05
2	**Spinning**				
	(a) Traditional	1,88,000	88,000	0.47	0.47
	(b) Ambar	4,43,700	4,04,650	0.99	0.99
3	Weaving	2,43,000	4,28,950	1.76	1.12
4	Washing	16,000	32,010	2.00	...
5	Kundi	5,100	10,670	2.09	...
6	Dyeing & Printing	25,900	77,950	3.01	2.50
	Total	9,34,900	10,69,730	01.76	...

* One manday is equivalent of 8 hours' workday.

As against the production of 9,89,500 sq. yds of Khadi aggregate employment in mandays comes to 8,71,900. This means that the requirement of manpower for the production of one sq. yd. of Khadi comes to 0.88.

The income from spinning represents supplementary income from work taken up mainly as part-time occupation by the women of the families. The other processes will offer whole-time occupations all the year round to families who will be engaged in them. The income of the families engaged in the work will depend upon the number of members of the family who will participate in the work.

Carding :

One carding unit will consist of 2 members of the family who will ply the carding machine. At the rate of Rs 2.06 per manday, the earnings of the family will rise from Rs 1.05 in 1957-58 to Rs 4.12 per day in the case of families who will take to the plying of pedal carding machine.

Weaving :

The Ruvar yarn weavers who were handicapped by the shortage of yarn will be provided with full employment all the year round through the supply of Ambar yarn. The productivity of the family weaving unit will be raised from Rs 2/4/- per day in 1957-58 to Rs 3.52 in 1959-60. The earnings will be raised from Re 1 per day to Rs 3.52 per day per family consisting of two full-time workers attending to the different processes of weaving. The level of income of weavers weaving handspun yarn will be considerably raised and will now compare favourably with the income of mill yarn and mill-cum-cotton waste yarn weavers.

Washing :

The return from the washing of Khadi will be Rs 2 per day which is higher than what the Dhobi families in the Region are able to earn in their traditional line of work. This is because of the increased volume of work which will be offered through the Khadi programme.

Kundi :

The work calls for considerable physical exertion. The earnings from this work will be Rs 2.09 np. per day. This compares favourably with the rate of wages which the unskilled labour is getting in the Region.

Dyeing and Printing:

Increased in the production of Khadi in the Region will be enough to absorb the working force of the 40 Chhipis who will be offered employment in the dyeing and printing unit which will be set up in the area. The rate of income will be raised from Rs 2.50 per day in 1957-58 to Rs 3.01 per day per person who will take up this work. The average daily income will be raised from Rs 1.33 np in 1957-58 to Rs 3.01 np in 1959-60.

The following Table shows the managerial and other personnel which will be employed in the different units to be organised to implement the programme of 1959-60.

Table 28—Personnel Requirements under the Programme

S. No.	Item	No. of persons	Income per day per person	Income per annum per person	Total Income during 1959-60
1	Manufacture of Ambar sets and Dhunia machines	17	3.98	1,194.00	20,300
2	Carpenters for servicing of Ambar-Charkhas and pedal Dhunia machines	33	3.00	900.00	29,700
3	Training of Ambar Instructors	13	2.4	720.00	9,360
4	Instructors for weaving	12	2.4	720.00	8,640
5	Khadi production	50	3.08	924.00	46,200
6	Servicing and training of spinners	66	2.4	720.00	47,520
7	Sales	40	3.5	1,050.00	42,000
8	Cotton purchase	2	5.00	1,500.00	3,000
9	Record keeping Clerks and Accountants	13	3.00	900,00	11,700
	Total	246	@3.19	@958.66	2,18,420

The employment of this class of personnel has its own significance. The programme will extend its appeal to educated sections of the population and will contribute materially to the stoppage of migration of the better equipped and qualified people from villages and thus enable the villages to increasingly reap the benefits of what is invested in the education of the youths in rural areas.

The plan will require investment as set out in Table 29.

Table 29—Estimated Expenditure on the Programme (Rs)

S. No.	Item	Amount	
		1959-60 (Rs)	Expenditure by the end of 1958-59 (Rs)
1	**Cotton**	2,32,950	75,000 (On five Khadi Godowns)
2	**Carding :**		
	Training	420	900
	Equivalent	2,100	4,500
3	**Ambar Charkhas :**		
	Tuition fees	54,250	90,000
	Stipend	25,000	40,000
	Equipment	1,25,000	2,00,000
4	**Servicing :**		
	66 Ambar Workers	46,800	15,600 (trained 40 instructors)
	33 Mistries	29,700	...
5	**Weaving :**		
	Training)		
	Tuition fees)	13,500	45,000
	Stipend	27,000	9,000
6	Dyeing & Printing Unit :		
	Land & Building	20,000	3,000
	Machinery & Equipment	10,000	1,000
7	Working capital for the production of 9,89,500 sq. yds. of Khadi of an estimated Value at Rs 17,70,620	5,90,000	
	Total	11,76,720	4,43,500

Total outlay on the plan for 1958-59 and 1959-60 will come to Rs 16,20,220. Of this Rs 4,43,500 that is, 27.3 per cent of the total required will be expended by the end of 1958-59. This shows that a fairly large part of the work directly connected with the plan will be commenced before the beginning of the year 1959-60. The programme for 1959-60 seeks to build up further on the foundations which will be laid in the preceding year. Though the work will be intensified during the year, it will be one of the phases of a long term programme for the development of Khadi Industry in the Region.

As against an expenditure of Rs 16,20,220 the value of Khadi produced will be Rs 4,25,400 in 1958-59 and Rs 17,70,620 during 1959-60. The aggregate earnings of the artisans and other personnel engaged in the work will be of the order of Rs 13,88,150.

The average earning per day of all the artisans will be Rs 1.76 and of the other personnel Rs 3.19. The return to the artisans will be equivalent to the prevalent wage rate in agriculture and allied pursuits on which an increasing number of artisans have come to depend as the main or supplementary source of income. The educated young men of the Region who will be absorbed in the organisational set up will earn Rs 2 to Rs 5 per day depending upon their qualifications and experience.

As against an expenditure of Rs 16,20,220 the value of Khadi will be Rs 17,70,620 during 1959-60. The investment and output ratio comes to 1 : 1.09. In itself the ratio of investment is quite satisfactory. It should, however, be noted that of the total investment referred to in the above Table, Rs 6,66,500 represents working capital and the remaining Rs 9,53 720 represents fixed expenditure on items such as buildings training and equipment. This means that a larger part of the investment will be for the building up of the production apparatus, the benefits of which will be more fully realised in the coming years. The ratio of output to investment will thus become more favourable in years to come.

APPENDIX I-A

Mill Cloth Consumption—Variety Wise & Count Wise

S.No.	Item	1—10 Qty Yds	1—10 Val Rs	10—14 Qty Yds	10—14 Val Rs	14—18 Qty. Yds	14—18 Val Rs	18—20 Qty. Yds	18—20 Val Rs	20—30 Qty. Yds	20—30 Val Rs	30—Above Qty. Yds	30—Above Val Rs	Total Qty. Yds	Total Val Rs	%
1.	Dhotis	...	...	169	149	160	160	278	281	1,005	1,083	185	330	1,797	1,903	20.6
2.	Shirting	...	..	289	241	502	439	635	610	752	763	214	290	2,392	2,343	27.5
3.	Saries	...	...	80	74	50	47	95	95*	490	491	225	280	940	987	10.8
4.	Prints	...	...	144	130	114	94	389	376	462	493	144	189	1,253	1,282	14.3
5.	Longcloth	...	...	211	175	154	123	408	378	415	432	45	47	1,233	1,155	14.2
6.	Lihaps (Bedding I)	...	...	7	7	16	18	20	58	23	33	...	...	66	116	0.8
7.	Bed-sheets (Bedding II)	3	4	148	138	125	84	173	179	43	48	...	...	490	453	5.8
8.	Hosiery	...	...	40	32	35	27	96	102	27	33	45	46	243	240	2.8
9.	Towel	...	...	20	19	6	8	8	10	12	16	12	18	58	71	0.6
10.	Dari	6	18	...	...	...	...	...	...	6	11	...	...	12	29	0.2
11.	Coating	...	...	...	...	10	20	...	...	...	...	...	...	10	20	0.1
12.	Others	...	...	44	33	6	6	61	63	39	49	40	40	190	191	2.3
	Total	9	22	1,150	998	1,176	1,026	2,163	1,952	3,274	2,352	910	1,140	8,684	8,790	100

APPENDIX I-B

Cloth Consumption Cotton Khadi

S. No.	Item	Quantity Yds.	10 Value Rs	10 Qty. Yds.	14 Value Rs	14 Qty. Yds	18 Value Rs	18 Qty. Yds	20 Value Rs	20 Qty. Yds	and dove Value Rs	Total Qty. Yds	Total Value	Percentage
1	Dhoti	...	...	...	...	12	17	...	...	30	85	42	102	2.2
2	Shirting	61	41	67	74	9	12	...	...	851	65	222	292	11.4
3	Prints	60	35	5	5	3	5	18	18	...	...	36	62	4 4
4	Longcloth	188	139	42	49	2	2	30	30	15	26	268	249	13.9
5	Lihaphs (Bedding I)	410	362	60	77	42	32	25	50	...	...	519	521	26.0
6	Bed-sheets (Bedding II)	444	331	177	141	...	...	24	24	...	...	645	397	33.3
7	Hosiery	5	6	...	...	...	...	5	5	...	...	10	11	0.5
8	Towel	45	44	3	3	3	3	4	6	...	...	55	56	2.9
9	Sari	...	...	...	...	...	...	...	...	25	40	25	40	1.2
10	Coating	...	...	7	14	...	...	...	...	15	36	22	50	1.1
11	Dari	59	137	...	...	...	...	...	...	...	...	59	137	3.1
	Total	1,272	1,095	361	363	53	71	96	133	171	362	1,953	1,914	100%

APPENDIX I-C

Showing Handloom Cotton Cloth Consumption

S. No.	Item	1 — 10 Qty. Yds	1 — 10 Value Rs	10 — 14 Qty. Yds.	10 — 14 Value Rs	14 — 18 Qty. Yds.	14 — 18 Value Rs	18 — 20 Qty. Yds.	18 — 20 Value Rs	20 — 30 Qty. Yds.	20 — 30 Value Rs	30 & above Qty. Yds.	30 & above Value Rs	Total Qty. Yds,	Total Percentage
1	Dhoti	...	...	10	5	...	...	...	...	...	...	...	...	10	1.1
2	Shirting	...	...	25	19	22	21	42	31	10	10	...	...	99	11,0
3	Saries	...	...	...	...	...	...	5	4	...	...	...	...	5	0.5
4	Prints	5	4	4	3	...	...	33	28	10	11	...	...	52	6.2
5	Longcloth	40	23	52	26	...	...	...	...	...	...	...	...	02	10.4
6	Lihaphs (Bedding I)	47	33	46	43	...	...	24	18	...	...	...	...	1172	13.2
7	Bed-sheets (Bedding II)	297	127	...	...	58	44	42	31	...	...	...	...	397	450.
8	Towel	...	...	...	...	...	...	...	...	12	9	...	...	12	1.3
9	Hosiery	31	17	...	...	13	13	52	38	...	...	...	...	96	10.8
10	Dari	5	10	...	...	...	...	...	...	...	...	...	...	5	0.5
	Total	425	214	137	96	93	91	198	150	32	30	...	...	885	100%

APPENDIX I-D

Comparative Percentages of Cloth Consumption

S. No.	Item	Cotton	%	Silk	%	Woollen	%	Total	%
1	Mill	8,684	94. 8	349	3.8	128	1.4	9.161	75 9
2	Khadi	1,953	96. 8	...	...	64	3.2	2,017	16.7
3	Handloom	885	99. 3	6	0.7	...	...	891	7.4
	Total	11,522	45.47	355	2.94	192	1.59	12,069	100%

CHAPTER FIVE

GUR & KHANDSARI INDUSTRY

Consumption of Gur & Sugar in the Region

Dhanaura is one of the regions in India where the per capita consumption of gur and sugar is far above the prescribed standard requirements of the balanced dietary. A sample survey of consumption carried out recently in the Region shows that against a standard requirement of roughly 49,000 B. Mds of sugar and gur the actual consumption of the Region is roughly 94,000 B. Mds. (Table 1) of which about 85 per cent is gur and the rest sugar.

Table—Estimated sugar and gur consumption of Dhanaura Region

Area Unit	Population	Adult Units	Std. Requirements B. Mds.	Consumption B.Mds.			7%s
				Gur	Sugar	Total	% of. (4)
1	2	3	4	5	6	7	
1. Sample Survey village	2192	1820	1092	1794	306	2100	191
2. Dhanaura Region	1,00,000	81,800	49,000	—	—	94,800	191

Production in the Region

It is in keeping with the needs of the Region that it is also an important producer of stugarcane, gur and sugar. Sugarcane has always been a very important crop in the Dhanaura Region and during recent decades, has expanded very rapidly due to two factors. First its value as cash crop. Like groundnut, cane also has acquired

great commercial importance with the growth of the sugar industry in the country. Secondly its suitability to water-logged areas. The western districts of Uttar Pradesh suffer considerably from water-logging and occasional floods. While other crops (cereals etc.) often suffer from these conditions, sugarcane has not been found to be badly affected. Moreover, there are irrigation facilities for cane growing.

It is estimated that of about 90,000 acres of cultivated area about 10 per cent (about 9,000 acres) are covered with cane and the annual production is about 25 lakh maunds of cane.

Most of the area is covered with improved strains, viz. C. O. 321; 245; 527; 421; 312; 100; 186; and 510. Heavy yielders C.O. 321 are becoming increasingly popular while varieties like 100 are being slowly discarded due to over-softness and other factors. The normal yield is about 300 Mds. per acre, though strains like C.O. 321 have yielded up to 1200 Mds. of cane on some farmers.

Present Position of the Gur and Sugar Industry

The entire sugarcane production is processed into gur and sugar in the Region and its neighbourhood. Originally, the gur and sugar industry of the Region was exclusively a village industry but during recent decades, with the growth of cane cultivation in the area, the organised sector entered the field to process a part of the cane produced. In the organised sector, there is a sugar mill, while in the cottage sector there are bullock driven Nahan (also known as Rajshahi) Kolhus and power driven crushers. There are no wooden Kolhus in the Region.

1. Organisation of the Industry

(*a*) **Sugar Mill:** The Amroha Sugar Mill was started in 1939 at Amroha (about 15 miles from Khadgujar). During the early years when it was managed by the Ganesh Flour Mills Company of Delhi it crushed about 8000 Mds a day; but after it was taken over by Kundanlal Sheth in 1944, its crushing gradually increased,

the present rate of crushing being about 45,000 Mds a day of three shifts or about 80 lakh Mds during the season (180 days) of which 10 lakh Mds are supplied by the Dhanaura Region.

(*b*) **Power Crushers:** There are 18 crushers in the Region, many of them about 10 to 15 years old with a crushing capacity varying between 600 Mds and 200 Mds per day. These crushers each costing about Rs 2,000 to 2,500 are owned by private persons and hired out to farmers during the season. They work for 100 to 115 days and crush roughly about 5 lakh Mds of cane during the season, working about 21 hours a day. The hire charges are usually Rs 3 per Md of gur produced, the crusher and pans being supplied by the owner of the crusher and cane and labour by the farmer.

(*c*) **The bullock driven Kolhus:** Some 200 bullock driven Nahan (Rajshahi) Kolhus also are engaged in sugar cane crushing. These Kolhus, each costing Rs 350 to Rs 400, are owned by private persons in Dhanaura, Moradabad, Hasanpur, and Amroha and are hired out to farmers at Rs 100 per season for the Kolhu and pans. Hiring of these Kolhus is of two typeis; Farmers hire Kolhus, crush cane, convert the juice into gur and sell it in the market to local merchants; and ii. some farmers hire Kolhus, extract juice and sell it to khandars or traditional khandsari markets, some of whom are themselves Kolhu owners. It is estimated that the Kolhus crush during a season about 10 lakh Mds of cane.

2. Productivity of the equipment: The mill which generally crushes the cane some 5 times is reported to give about 80 to 85 per cent juice on the weight of cane crushed.

It is estimated that the power crushers extract about 60 per cent juice on cane weight. This is because the power crushers in the Region are all single units. If, however, a duplicate crusher is attached to the single crusher with a bagasse carrier at a cost of about Rs 2500 (Rs 2000 per crusher and Rs 500 for

carrier) the total productivity of the two crushers is estimated to increase to about 70 to 72 per cent on cane weight, this extra yield of juice generally being very rich in quality and sucrose content.

The productivity of the Nahan Kolhu is only about 50 per cent of cane weight, chiefly due to the limitations of bullock power. The sugar mill has a long season of 180 days, extending from November to June while the power crushers and Kolhus work for about 100 to 115 days between December and middle of April, without detriment to the agricultural operations. About 1,800 persons are said to be employed in the mill.

The private crushers generally crush cane make about 10 to 15 Mds of gur in a day of about 14 to 21 hrs and earn about Rs 30 to Rs 45 as hire charges per day from the farmers. Some crushers produce 30 to 40 Mds of gur and bring a daily income of about Rs 90 to Rs 120 to the owners.

In Kolhus which also work for about 14 to 21 hours a day, the earnings of the farmers are poor while those of the owners are fairly high. It is estimated roughly that even at high cane prices a farmer who crushes 125 Mds of cane and sells 1 **Kardah** (62.5 Mds of juice) to the Khandsari gets only a net income of Rs 110 while a farmer who sells 125 Mds of cane as cane earns about Rs 155 (Table 2).

Table 2—Estimated Income of Farmer under Khandsar System

	Qty of Cane	Gross juice	Value of	Expenditure			
		Wt. of juice Mds.	Value Rs	Hire charges Rs +	Transport or bullock feed Rs	Total	Net return Rs
1.	Khandsar system 125 Mds	62.5	120*	2	8	10	110*
			70‡				60‡
2.	Cane sale system 125 Mds	...	...	...	...	...	155†

* At maximum prices

‡ At minimum prices

\+ For 40 manhours (2 work days)

† At normal price of Rs 1.25 per Md of cane

The khandsar system, widely prevalent in areas like Macharia is, however, not very common in the Dhanaura Region where the farmers generally sell away their cane.

Defects of the Present Structure of the Industry

The present structure and working of the Industry suffer from several defects which adversely affect the interests of the cane growers and labourers :

(a) The mill spreads its crushing season over 180 days from November to June during which period the farmers are busy with agricultural operations. This season begins with harvest of Kharif and ends with harvest of Rabi. This clash with their farming work greatly inconveniences the cane growers who have to spread the supply of cane to the mill. They desire that supply should be

spread between December and the middle of April only so that they as well as their land be free for further cultivation work.

(b) The cane growers are bound by agreement to supply aa specific quota of cane during a specific period to the mill and to dispose off the balance oftheir crop by other means. Of about 25 lakh maunds of cane annually grown, about 10 lakh maunds is left to be consumed by private crushers and Kolhus. As this sector is not properly organised the farmers are often at a disadvantage in profitably disposing off this surplus.

(c) The synchronising of cane supply with agricultural operations places a great strain on bullock power and the farmers are often unable to cope with the situation and meet the mill contract.

(d) The mills crushing season invariably causes considerable disturbance in the regional economic conditions. Of the 1,800 persons employed by the mill, about 90 per cent are recruited from eastern U. P., (specially Banaras district) and the remaining 10 per cent constituting the administrative personnel from the Punjab. Local labour is, as it were, eliminated for reasons not clearly known. The remittances of these imported hands roughly estimated at about 4.5 lakhs are a loss to the resources of the Dhanaura Region, besides being a source of dissatisfaction to the local working classes which consider themselves deliberately eliminated. Apart from the mill, the private crushers and Kolhus also are exploiting the cane growers. Their hire charges are too high and due to inability to own crushers or Kolhus, the farmers are constrained to agree to the owner's demands. In the Dhanaura Region, though not to the extent noticeable in Macharia, Singhpur and Gangeshri areas, the crusher and Kolhu owners occasionally lend some money to farmers and gain a hold on them so that they can dictate terms to the farmers. Moreover,

the power crushers are only single units with low productivity which the owners are not interested in improving for the benefit of the users.

The problems of the farmers, therefore, boil down to (a) existence of surplus cane after meeting mill demand; (b) low holding power; (c) indebtedness to crusher and Kolhu owner; (d) need to dispose off crop by April and to release land for cultivation again; and (e) compulsory hiring of crushers and Kolhus.

Public Sector *Vs* Private Sector

While the working of the gur and sugar industry of the Region apparently suggests lack of harmony between the mill and the agricultural economy, the real struggle exists between the public and private sectors. The private sector consisting in the sugar mill, the private cane crushers, and the Kolhus, is not found to work in the interest of the cane grower. The local leaders soon became alive to this situation. They envisaged that it was the development of the public sector in cane crushing that alone could solve the farmer's problems and benefit them positively by ensuring them a higher price for their cane, and by improving productivity of the equipment used in processing cane as also by adjusting the crushing season to suit their needs and convenience.

A Successful Experiment

It was given to Shri Mahendra Singh of Khadgujar to give concrete shape to this new bias for the public sector. Shri Mahendra Singh voluntarily gave away his power cane crusher to the Khadgujar Intensive Area in 1957—58, and the equipment worked by a 10 H. P. motor was put to fairly full use during the season, the total crushing amounting to 21,020 B. Mds. of cane during 100 days from 9—12—57 to 28—3—58, the average

daily crushing being about 210 M of cane as detailed in Table 3. This Samiti crusher accepted all the cane that was offered by the growers.

Table 3=Crushing by the Crusher in Public Sector

Date	Days	Cane Wt Mds		Value Rs
		‖ Pucca	B. Mds	
9-12-57—31-12-57	100	3149	3936	3816
1- 1-58—31- 1-58		4523	5654	5581
1- 2-58—28- 2-58		5286	6608	7752
1- 3-58—31- 3-58		3857	4822	6406
Total	100	16816	21020	23555

‖ Pucca Md is local Md equivalent to 1.25 B. Mds

During the season some 840 B. Mds of sugar and 956 B. Mds of gur valued at about Rs 32,500 were produced at a total cost of Rs 32,096 as shown below—

Expenditure	Cost Rs	Value of Production	Rs
1. Cane purchase	23,555	840 B. Mds Sugar	25,000
2. Wages	4,463	956 B. Mds Gur	7,500
3. Electricity	1,500		
4. Misc. (grease, clarificants, transport etc.)	2,310		
5. Depreciation on machinery	200*		
6. Depreciation on dead stock	68+		
	32,096		32,500

* Dep. @ 8% on Rs. 2,500 being cost of crusher etc.
+ Dep. @ 10% on Rs. 682 dead stock (belting, pipe, bamboo) etc).

About 740 Mds of sugar and 956 Mds of gur were sold for Rs 30,890 at prices varying between Rs 27 and Rs 38 per B. Md of sugar and Rs 5 to Rs 12 per B. Md of gur.

Though the working of the crusher resulted in no profit and no loss during the first year itself it served as a good experiment as it helped the cane grower in several ways : First, the crushing period was adjusted to suit the convenience of the farmers. Secondly, all the cane offered was accepted and paid for at fair prices. Thirdly, the farmers were saved the trouble of long distance transport of material as the crusher was fairly close to their fields. Fourthly, even at the crusher there was no need to wait in queuls supplying cane. Fifthly, payment for cane supplied was made within three or four days and in special cases on the supply day itself. Sixthly, the wages paid to labourers were higher than those offered by private crushers and generally higher than those given by the Mill.

By far the best aid to the farmer was in the price fixed and paid for cane to him. The cane grower obtained a price far higher than that offered by private crushers and rather comparable to the price paid by the mill. At any stage during the season, the benefit of any price rise accrued to the cane grower, the price rise being from Rs 1.25 to Rs 1.75 per pucca Md equivalent to 1.25 B. Mds as shown hereunder :

Date of rate increased	Rate per pucca Md (Public Crusher)	Approximate Price	
		Sugar Private Mill	dealer
9.12.57	1/25	1.25 to 1.37	0/87 to 1/12
7. 2.58	1/31		
8. 2.58	1/37		
12. 2.58	1/50		
25. 2.58	1/62		
14. 3.58	1/68		
15. 3.58	1/75		

The success of this experiment could be assessed from the fact that a private crusher at Afzalpur (about 1.5 miles from Khadgujar) crushed during 115 days from 16.11.57 to 10.4.58 only 2,381 Mds averaging at 21 Mds per day.

Encouraged by the results of this experiment, the Kshetra Vikas Samitis of Dhanaura Region have decided to bring the gur and sugar industry gradually into the public sector. It is decided first to crush the surplus production of cane rather than challenge the private crushers and kolhus all at once. The Samitis are aware that the expansion of the public sector is an educative process and as such needs cautious handling and steady developmental activity. They find the scope for this expansion first in surplus cane and then in the cane processed by bullock driven kolhus which are uneconomic units. Once the surplus cane is covered, further expansion will not present any difficulty.

The Development Programme for 1959-60

The development programme for 1959-60, therefore, consists in the setting up of 5 power crushers in the Region at one crusher per area at suitable places. In view of the higher productivity of a double crusher, each single unit will be fitted with a duplicate crusher and bagasse carrier.

Proudction

These crushers in the public sector (Samitis) will work along side of the existing agencies of production - mill, crushers and kolhus. Each crusher is expected to crush some 40,000 B. Mds of cane during a 100-day season at about 400 Mds per day and produce about 2,080 Mds of khandsari or 3200 Mds of gur valued at about Rs 83,800 against a total expenditure of about Rs 66,000 as set out in Table 4.

Table 4—Working of Crusher Unit for one day (400 B. Mds Cane)

Income			Expenditure		
	Item	Amount Rs		Item	Amount Rs.
1	Value of 20.8 B.Mds sugar @ Rs. 28 per Md	582	1	Cost of 400 Md cane	400.00
2	Value of 32 Mds of gur @ Rs 8 per Md	256	2	Electricity consumption	30.00
			3	Wages to 40 labourers @ Rs 1.25 per labourer	50.00
			4	Mistris (2) @ Rs 3 each	6.00
			5	Wages of 4 skilled artisans @ Rs 3.5 each	14.00
			6	Watchman's salary	1.05
			7	Manager's salary	3.00
			8	Mobil oil, grease, etc.	5.00
			9	Refining agents	5.00
			10	Rent of Pans	5.00
			11	Transport @ 1.25 per Md and other charges	80.00
			12	Sales tax at 3 n.p. per Re 1.	26.00
			13	(a) Minor repair	3.00
				(b) Depreciation at 7½ % on machinery (Rs 22.000)	16.05
			14	Int. on capital (Rs 32,000)	4.05
			15	Misc.	10.00
	Total	838		Total	660.00
				Net saving	178.00
				Total	838.00

On this basis it is estimated that the five crushers will crush about 2 lakh mds of sugar cane during the year and produce about 10,400 mds of sugar and 16,000 mds of gur valued at about Rs 4.2 lakhs at a total cost of about Rs 3.3 lakhs and earn a margin of about Rs 0.9 lakhs.

Equipment

The equipment required for each unit consists in two crushers and sugar making plants and 15 H.P. electric motors housed in a building valued at Rs 7000. The total outlay on each unit for building and equipment will be Rs. 22,00 (Table 5) while the working capital requirements are estimated to be Rs 10,000.

Table 5— Capital Outlay on Equipment (one unit)

	Item	Amount (Rs)	
			Details of sheds, tanks, etc.—
1	Building (sheds, tanks, etc)	7,000*	*(1) 2 foundations each $8' \times 6' \times 4'$ for crushers
2	Permanent electricity deposit	1,000	(2) 2 foundations each $4' \times 3' \times 2'$ for two centrifugals
3	Electric motors (15 H. P.)	5,000	(3) One juice tank (covered) $6' \times 6' \times 6'$
4	The crushers 14" size	5,300	(4) One molasses tank (covered)$(10' \times 10' \times 5')$
5	Sugar production plants	2,200	(5) Six rab tanks (covered) $6' \times 9' \times 4'$
6	Other shafts, pulleys etc.	1,500	(6) One common open tinshed for centrifugals $30' \times 20$
			(7) Earth filled platform for cane $(10' \times 10')$
			(8) Thatched shed with furnace $(80' \times 20')$
	Total	22,000	

Employment

The introduction of power crushers in the public sector offer much scope for employment of labour and technicians at fair wage rates in different processes like weighing cane, crushing cane, boiling juice, making sugar and gur, apart from general administration. It is estimated that while a single crusher unit needs about 40 persons to work all processes, a double crusher unit requires some 48 persons. On the basis that the daily wages work out to about Rs 67.5 per unit per day as detailed in Table 6, it is estimated that about Rs 33,750 will be distributed as wages to workers 6 in all the five units during a season of 100 days, the wage rate ranging from Rs 1.25 to 3.5. Considering that the agricultural wage rate in the Region is about Rs 1.25 per day, the wage of Rs 1.25 for labour in this industry should be taken as adequately remunerative.

Table 6— Employment in Double Crusher Unit
(400 to 500 Mds)

	Section/ Processes	Designation	Nature of work	No. of Persons	Monthly pay	Daily wage Rs	Total per day Rs	Remarks
1	Weighing cane (400 Mds)	Weighers*(3)	Weighing cane	3	...	1.25	3.75	*Two only if below 300 Mds,
2	Crushing:							
	(a) First crushing	feeders (4)	feeding rollers	10	...	1.25	12.50	
		bagasse removers (4)	Removing bagasse					
	(b) Duplicate crusher	Carrier men (2)	Looking after carrier chain					
3	Boiling juice two furnaces	Karigar(1)	Striking	16	...	3.5	3.50	
		Helpers (7)	Stirring‡ juice etc,		...	1.25)	18.75	‡Only 4 for one furnace
		Jhokas (8)	Feeding‡ furnaces		...	1.25)		
	Machine	Mistri (1) (Mechanic & two centrifugals	For motor	1	...	3.00	3.00	
5	Centrifugals	Feeders (4)	Feeding	)				
		Driers (4)	Rab Drying sugar) and falling bags	) 8	...	1.25	10.00	
6	Gur making	Karigars(2)	Striking	)	...	2.00	4.00	
		Ball makers (4)	Gur ball making	) 6	...	1.25	5.00	
7	Management	Manager (1)	Administration	1	90	3.00	3.00	
		Chowkidar (1)	Watchman	1	...	1.50	1.50	
8	Extra hand	Labourers (2)	Relieving Duties	2	...	1.25	2.50	
	...	...	...	48	...	...	67.50	

The unit is not only expected to be self-supporting but will have a fair margin of Rs 178 per day after meeting all expenses. The five units will thus be able to earn a net profit of about Rs 0.9 lakh during the year. This income can be invested in the industry itself for setting up new units in the Region or for conversion of private crushers into the public sector.

Cost of the Programme

On the basis of Rs 22,000 for equipment and buildings and Rs 10,000 towards working capital per unit, Rs 1.6 lakhs will be required for the programme. Of it Rs 55,000 or 50 per-cent of the outlay on equipment and Rs 50,000 towards working capital will be obtained from external sources while 50 per cent of the outlay on equipment (Rs 55,000) will be found in the Region itself.

Impact of the Programme

From the present position of the industry and the response received by the Samiti crusher during 1957—58 it is expected that the bringing in of more crushers into the public sector will have far reaching effects: first, it will shorten the period of cane-crushing and will release manpower, bullocks and land for further economic activity like food production which is the primary need of the people. Secondly, it will help regulate the price level in the private sector in favour of the cane grower. By slowly making it unprofitable for the private crushers to carry on on their own against the public crushers, it may eventually draw many of the private crushers into the public sector. Lastly, it may thus pave the way for other village industries to build up their strength by organising themselves under the public sector for community benefit.

Prospect

It is envisaged that at five double crushers per year, some 25 crushers most of which may have been drawn from the pri-

vate sector will be set up under the public sector during the next five years and these crushers will work along side of the 200 kolhus in the Region. Considering that the total production of the Region is about 25 lakh mds of cane, it is expected that the crushers will crush about 10 lakhs of Mds and the 200 kolhus about 13 lakh mds at about 65 B. Mds per day, making the total crushing about 23 lakh mds. The balance of 2 lakh tons of cane and any possible additional cane production may be sent to the mill.

Gradually, when power crushers establish themselves well in the public sector, efforts will be made to make the cottage sector of the industry as a whole more economic than at present. The kolhus which are invariably uneconomic units will be dealt with, and by a steady expansion of cottage power crushing, the kolhus will be eliminated.

CHAPTER SIX

VILLAGE LEATHER INDUSTRY

The Dhanaura Region is one of the important leather producing and leather goods consuming regions of Western U. P. Several important factors have contributed to this position of the Region :

(a) **Local availability of Raw Material :** As detailed in Chapter One (Social and Economic Background), the Region has a large animal population. Of 60,216 heads of cattle, 59,246 are bovines and 970 other large animals like horses and donkeys. Besides, there are 3,145 sheep and goats. Roughly at a mortality rate of 10 per cent for cattle and a death-and-slaughter rate of 35 per cent for sheep and goats, there is a potential supply of about 6,000 hides and about 1,100 skins for the leather industry.

(b) **Water Supply :** Processing of hides requires a plentiful supply of soft water. The water in the Region is not only soft, but, as the sub-soil water-table is high, abundant everywhere. A bore well with a water pump ensures unlimited supply of water.

(c) **Local availability of Labour :** There are about 250 families of chamars and other traditional leather workers in the Region engaged in flaying, tanning and leather goods manufacture.

(d) **Marketing and Transport :** There is a large potential demand for leather goods like footwear, travel requisites, **mhots** and other agricultural requisites. Owing to extreme heat in summer and cold in winter, people generally use some footwear;

while the predominantly agricultural economy of the Region always creates a large demand for agricultural requisites in leather like water-buckets, **bhistis** and belts. The existing road and rail communications from Dhanaura, Gajraula and Khadgujar to internal and external markets facilitate the transport of local surplus goods or of those commanding a wider market.

Present Position

Artisans engaged : There are at present 242 families of leather workers engaged in flaying, tanning and leather goods manufacture, catering to the footwear, agricultural leather equipment needs of the 17,000 families in the Region (Table 1)

Table 1—Leather Workers in Dhanaura Region

Item of work	Dhanaura	Kamelpur	Deengra	Khadgujar	Karaundi	Total	7 as % of total
1	2	3	4	5	6	7	8
1 Flaying	4	20	17	2	2	45	18.6
2 Tanning	3	30	...	5	...	38	15.7
3 Shoe making	14	57	70	15	3	159	65.7
Total	21	107	87	22	5	242	100

Of these artisans shoe makers form two-thirds the number, the rest being flayers and tanners. These artisans are mostly self-employed and work in industrial units, generally consisting of three persons in a flaying unit, four in a tanning unit and two in a shoe-making unit. Details of the production of all these units and the consumption of leather goods in the Region are not available; but the position of the industry in all its aspects is roughly indicated by the data available from the consumption survey and the artisan survey. While the consumption

survey relates to a cross section of the population covering 2,192 persons in 350 families, the production survey covers 23 working units consisting of 52 workers— 6 flaying units employing 17 persons; 2 tanning units with 8 persons; and 15 shoemakig units with 27 persons.

Consumption Pattern

It was found from the consumption survey (Table 2) that 2,052 pairs of footwear were consumed by 2,192 persons, the per capita consumption being 0.94 pair. Of the 2,052 pairs costing Rs 4.4 each on an average, 1,310 pairs were locally produced and 742 imported from Moradabad and Delhi, etc. The local product sold at Rs 3.55 per pair as against Rs 6.00 of the imported footwear. **Desi juti** was found to be the most popular type of footwear in all the areas of tha Region.

Table 2—Consumption of Footwear in

Area	No. of persons	A. Local							
		Shoes		Chappal & Sandals		Desi Juti		Total A	
		No.	Val.	No.	Val.	No.	Val.	No.	Val.
1	2	3		4		5		6	
1 Dhanaura	352	83	420	67	266	28	92	178	778
2 Kamelpur	506	33	222	43	119	192	670	268	980
3 Deengra	361	9	50	92	241	199	743	300	1,033
4 Khadgujar	432	7	41	16	50	222	748	245	839
5 Karaundi	541	3	13	10	27	306	984	319	1,024
Totai Sample	2,192	135	863	228	703	947	3.227	1,310	4,654
Average price Per pair, Rs		6.39		3.08		2.41			3.55

the Region (All types) (No. Pairs ; Value Rs)

	B. Imported												
Shoes	Chappals & Sandals		Desi Juti		Total B		Total A & B			6 as% of 11	10 as% of 11	Per Cap pairs	
No.	Val.	No.	Val.	No.	Val.	No.	Val.	No.	Val.				
7		8		9		10		11		12	13	14	
82	533	59	327	45	185	186	1,044	364	1,822	49.0	51.0	1.03	
55	411	73	306	12	40	140	757	408	1,737	65.7	34.3	0.81	
6	44	24	128	5	22	35	194	335	1,227	89.6	10.4	0.93	
74	685	83	366	26	84	183	1135	428	1,974	57.2	42.8	0.99	
105	980	82	284	11	38	198	1,302	517	2,326	61.7	38.3	0.96	
322	3053	321	1411	99	363	742	4432	2052	9086	64.0	36.0	0.94	
9.48		4.40		3.72		6.00		4.40		...	...	...	

Of 2,052 pairs 964 (47 per cent) were worn by men, 675 (33 per cent) by women and 413 (20 per cent) by children, every man, woman and child consuming on an average about 1.2, 1.1, and 0.5 pairs respectively.

The consumption of other leather goods consisted in agricultural requisites, personal and travel requisites like belts, purses and bags, valued in all at Rs 590, about Rs 290 being the value of local manufactures and Rs 300 that of imported ones. Agricultural requisites were chiefly local manufactures (about Rs 220) while other articles were imported ones (Rs 300).

Production

It was indicated by the production survey that the production of leather goods was affected by various factors:

(a) Raw Material: Table 3 sets out details of the raw materials used by the leather worker units against a rough estimate of the available materials in the Region.

Table 3—Consumption of Raw Materials

Process	No. of persons in Region	Per ons in sample	Estimated availability in Region		Consumption (Survey)	
			No.**	Value	No.	Value
1	2	3	4	5	6	7
1 Flaying	45	17	6,000 carcases	24,000	1160	4,640
2 Tanning	38	8	6,000 hides	54,000	100	900
3 Shoe-making	159	27	6,000 hides	1,20,000	339	(6,135 (360*

* Nail, thread, and other materials (Rs 360) and hides (Rs 6,135)

** Rough estimates.

Considering the volume o the potential supply of local hides, the actual consumption of local raw materials by the manufacturing units was too little for the number of persons engaged in the work. The lifting of carcasses was hampered by lack of proper informants and by delayed inteliigence. Tanning was not regularly carried on to ensure adequate supplies of tanned hides for shoe making Raw hides and local tanned ones were available off and on at local weekly fairs in small quantities. Consequently shoe makers were obliged to buy factory-processed leather in large quantities.

(b) Techniques of Processing :

The techniques employed in flaying, tanning and leather goods manufacture were mostly primitive. In Kamelpur the flaying and tanning units set up under the Intensive Area Scheme employed improved techniques. The equipment used by the workers except by those in the units at Kamelpur, was of the traditional type. Equipment was invariably owned by the workers themselves. Oloing to crude implements, work was crude in flaying and tanning as well as in shoe making. Few workers were abl to produce good western type shoes or even elegant sandals.

(c) Articles produced : The actual production of the units surveyed consisted in 960 raw hides, 200 raw skins, 100 tanned hides and 8.987 pairs of footwear valued in all at about Rs 43,000 as stated here (Table 4).

Table 4—Production

Process/ Item	Arti-cles	No.	Rate aver-age Rs	Value Rs (Actual)	No. of workers	Per worker Rs	Normal production per worker in Rs
1 Flaying	Hides	960	10	9,950)	17	632	1,000*
	Skins	200	4	800)			
2 Tanning	Hides	100	20	2,000	8	250	4,000×
3 Shoe mak-ing	Shoes (Desi)	8,987	3.5	31,500	27	1,167	1,400‖

* 100 hides per year per worker at Rs 10 per hide

× 200 tanned hides per year per worker at Rs 20 per hide

‖ 375 pairs of local type footwear at Rs 3.5 each, besides about Rs 75 worth of agricultural requisites per worker per year.

Judging from the norms roughly worked out from experience in the trade, the production of the shoe makers was not too low while that of the flayers was very low. In respect of tanning, however, the work of the artisans was most uneconomic.

(d) **Employment and Wages earned** : It was indicated by the survey that most of the workers in the industry were men and that, in tanning. work was done exclusively by men. Though of the 52 workers, 38 were full-time workers and 14 part-time ones, the actual work period was short, being about 200 days in flaying and shoe making and about 100 days in tanning. Moreover, work was done for about 5 to 6 hours per day. Consequently, daily wages were rather low being about Rs 1.5 in tanning and shoe-making and Rs 2.17 in flaying, the daily earnings, ranging widely between about Rs 1 and Rs 4.6. Consequently, the per capita income was low particularly in tanning (Rs 161) and shoe making (Rs 264). while in flaying the income stood at about Rs 408. The position regarding employment and wages is summarised in Table 5.

Table 5—Employment and Wages earned

Item of work	No. of workers					Work period			Wages (Avg. Rs)			Income, Rs	
	Total	Males	Females	Part-time	Full-time	Total days worked in year	Days per worker	Hours per day	Maximum	Minimum	Daily Average	Total	Per capita
1 Flaying	17	15	2	14	3	3,210	190	5	4.60	0.96	2.17	6,865	408
2 Tanning	8	8	...	5	3	855	105	6	2.60	1.36	1.52	1,322	161
3 Shoe making	27	25	2	19	8	5910	199	5.6	2.50	1.03	1.53	8,480	264

(e) **Finance :** Though not in tanning, finance had to be found from external sources for the other processes particularly, shoe-making. While the loans taken for flaying were only about Rs 500 from a money lender, the loans for shoe makers amounted to about Rs 1,950. The bulk of borrowing was from money lender (Rs 700) and cooperative credit society (Rs 500) and the balance was from other sources.

(f) **Marketing and Transport :** Of the goods produced such as footwear-buckets, belts, bags, straps, etc. about 1,900 pairs of footwear valued at Rs 7,600 were sold to consumers and about 5,900 valued at about Rs 23,600 were exchanged outside the Region. Of the raw hides, 969 valued at Rs 11,520 and 100 tanned hides, valued at about Rs 2,000 were supplied to traders. Transport of goods was effected by head loads or by bullock carts, either owned or hired.

Problems of the Industry

The data furnished by the survey bear out the following problems of the Industry:

(a) Lifting of carcasses and proper recovery,

(b) Improvement of production technique and productivity by providing improved equipment and training artisans; and

(c) Stocking of processing raw materials and manufactured goods for distribution or sale.

These problems are sought to be tackled by means of a development programme for leather industry during 1959-60.

Development Programme for 1959-60

The development programme for 1959-60 envisages (i) the production of 5,500 tanned hides and 750 tanned skins; (ii) the production of 55,000 pairs of footwear and Rs 20,000/- worth of agricultural and travel requisites; (iii) the setting up of 10 flaying units and 4 tanning units in the Region; and (iv) the training of

20 flayers, 16 tanners and 25 shoe makers during the year. Appropriate production units will be set up at village, area or regional levels and facilities will be provided to them to carry out the programme.

Raw Materials

Of about 6,000 carcasses of cattle and 1,100 goat and sheep skins estimated to be available annually, some 5,500 carcasses and 750 goat and sheep skins will be procured during the year. Arrangements will be made by the Kshetra Samiti not only to have a regular service of informants but to negotiate for lifting rights where lifting is, by custom, monopolised by a few families.

Processing of Hides and Other Materials

To demonstrate improved methods of flaying and carcass recovery, 10 model flaying units will be set up at two in each of the five Intensive Areas. These units will educate the other flayers in improved methods. In respect of tanning, 4 model tanning units will be set up in Areas other than Kamelpur where a model tannery exists. There tanneries will demonstrate improved methods of pit tanning and train the other local tanners. An experimental glue-making unit to produce glue from fleshings will be set up at Kamelpur.

Production of Leather Goods

It is envisaged that the facilities provided will result in the production of 55,000 pairs of footwear and Rs 20,000 worth of other goods in the Region itself. On the basis of 11 pairs per hide averaging 22½ sq. ft. (each pair requiring one sq foot for soles and one sq. foot per uppers), it is estimated that 5,000 tanned hides and 500 tanned skins will suffice for about 55,000 pairs of western and Indian types. The balance of 500 hides and 250 skins will provide the necessary materials for the agricultural and

other requisites. The value of the production (footwear and other articles) is estimated to be about Rs 2.4 lakhs, at Rs 4 per pair of footwear.

Training Programme

Flaying : To demonstrate improved methods of flaying and carcass recovery, 10 model flaying units will be started in the Region with two workers in each. Each unit will be provided with equipment consisting in lifting and flaying tools and bone digestor at a cost of about Rs 10,000 (Annexure 1).

Tanning : The four tanning units will have 4 workers each, and will be equipped with pits and implements at a cost of about 11,000 each (Annexure 2). A glue making unit attached to the Kamelpur tannery at a cost of Rs 4,000 (Annexure 2) will have two persons to experiment on and demonstrate glue making from available fleshings.

The 20 flayers and 16 tanners will be trained f r two months at Kamelpur tannery. It is expected that all these trainees will run their model units and educate the local artisans in scientific processing so that the quality of the local products may improve.

Leather goods makings :

With a view to training local workers in manufacture of quality foot-wear, particularly of western type shoes and slippers, a training centre will be set up at Kamelpur, at a cost of about Rs 14,000 (Annexure 3). This centre will provide training to 25 artisans for one year. The course prescribed will be:

1 Measurement of the foot;
2 Shoe lasts and their relation to human foot;
3 Pattern cutting and grading;
4 Shoe making;
5 Finishing; and
6 Miscellaneous articles manufacture.

Special attention will be given to practical work in speed and workmanship; and every trainee will have to produce during the period of training three dozen pairs of shoes, slippers and chappals; and one dozen miscellaneous articles such as purses and bags.

The trainees will be paid stipend at Rs 30 per month for two months for flaying and tanning training and one year for shoe-making course. Besides, about 135 shoe makers left out will be given a week's refresher course each in batches of 25 and will be paid a daily allowance of Re 1/- each.

Employment and Income

While the total number of artisans employed will not substantially change, it is expected that the development of flaying and tanning on improved methods will result in a slight occupational reshuffling. For, flaying of 5,500 carcasses will require about 55 persons at 100 carcasses per worker; and tanning them will need only about 30 persons at about 200 hides per worker. Some 8 to 10 flayers may therefore change over to tanning which holds out new prospects of employment. All the artisans will have better employment and will increase the overall production of goods from local materials mainly, unlike at present when most of the raw materials like leather are imported. Table 6 sets out estimates of the employment, production and income of the workers under the programme:

Table 6—Employment and Income

Item of work	No. of persons	Articles Produced	No.	Rate Rs	Value Rs	Daily wage rate (Current)	Annual per worker	Total annual income Rs
1 Flaying	55	Hides & skins	5,500 750	10 2	55.000 1,500	2.0	600	33,000
2 Tanning	30	do	5,500 750	20 4	110,000 3,000	1.5	450	13,500
3 Shoe-making etc.	160	footwear pairs	55,000	4	220,000	1.5	450	72,000
		Others	...	...	20,000			
	245	...	...	...	...	...	...	1,18,500

Organisation of the Industry

In view of the need to provide necessary facilities for the development of the industry, the formation of production units of suitable size will be encouraged. As flaying is to be done quickly in the village itself or in a group of villages, the formation of independent flaying units at village level will be encouraged, while the 10 units envisaged under the programme will be set up at area level to serve convenient groups of villages. Tanning units will be set up at area level and other tanners will also be encouraged to form themselves into economic production units.

A leather industrial cooperati.. will be organised at regional level. This cooperative will purchase, stock and supply tanning materials to the tanneries and will collect tanned hides and skins and distribute them to the shoe makers so that exploitation and uneconomic working of artisans may be eliminated. The shoe makers will work as home units and supply products to the branches of the regional cooperative set up at area level

for disposal of leather goods. It is expected that this decentralisation of production and distribution activity will harmonise all the interests of the trade and help effect economy in all lines of work.

Expenditure on the Programme

It is estimated that the cost of the programme will be about 1.72 lakhs as detailed in Table 7. Of this roughly

Table 7.—Expenditure on the Programme

Item	Units persons	Rate per unit (Rs)	Total (Rs)	Internal resources Rs	External aid Rs	
					Grant	Loan
1 Flaying & bone crushing	10 Units	9,740	97,400	7,200	48,700	41,500
2 (a) Tanning	4 Units	11,000	4,4000	...	33.000	11,000
(b) Glue making	1 Unit	4,000	4,000	1,000	3,000	...
3 Training						
(i) Training Centre for shoe making	1 Unit	15,000	14,000	...	14,000	
(ii) Stipends						
(a) Flaying & Tanning	20 flayers) 10 tanners)	30 per month for 2 months	2,160	...	2,160	
(b) Shoe making training	25 Shoe makers	30 P. M. for 12 months	9,000	...	9,000	
(c) Refresher course for shoe-makers	135 Shoe makers	Re 1/- each per day for 7 days	945	...	945	
...	...	...	1,71,505	8,200	1,10,805	52,500

Rs 1.5 lakhs is expenditure on equipment, while about Rs 2000 is the estimated cost of the raw-materials required for the production and training units. Stipends and salaries amount to about Rs 20,000 for all trainees. The expenditure is on capital equipment and stipends, will be obtained from the Khadi and Village Industries Commission and the balance (about Rs 8000) will be found in the Region itself.

Impact of the Programme

The impact of the programme of the Region is expected to be very significant in many respects:

First, the raw materials that are locally available will be properly utilised and the financial drain on the Region which imports leather from outside will be reduced. Secondly, organisation of production units at appropriate levels home, village, area and regional, will introduce harmony into the trade by eliminating vested interests and conflicts. Thirdly, production, employment and earnings will increase appreciably so as to ensure a better standard of living to leather workers than at present. Fourthly, skills of permanent value will be developed by the training programme. Fifthly. the increased consumption of local manufactures will tend to reduce imports of footwear and other leather goods.

ANNEXURE 1

Estimated Expenditure on a Flaying Centre

Capital outlay:

(a)	**Non recurring**	
	(i) Implements	Rs 400
	(ii) Cart with bullocks	1,000
	(iii) Land, flaying sheds, platform, store room etc.	2,000
	(iv) Bone digestor	1,000
	(v) Well or water arrangement	1,000
	(vi) Miscellaneous	600
		6,000
(b)	**Recurring**	
	Salary of two workers at Rs 60 P. M. each	1,440

(a) Half of the capital outlay of Rs 6,000 as detailed under the caption "**Non recurring**" above shall be given as **grant and** the remaining half as **loan.**

(b) Grant for the 50% of the recurring expenditure on salary of workers, i. e., Rs 720 shall be given to each centre and the remaining Rs 720 shall be met by the centre.

Each centre shall thus be given Rs 3,720 as grant and Rs 3,000 as loan.

Bone Crushing Units

Each unit shall be given upto Rs 1,150 as grant for meeting 50% cost of equipment and shed and loan for meeting 50% cost of equipment and shed at Rs 1,150 per unit.

ANNEXURE 2

Village Model Tanneries

(a)	Cost of land	Rs	1,000
(b)	Tanning shed, tanning, pits, drains, compound wall equipment, etc.	Rs	10,000
	Total	Rs	11,000

Out of the sum of Rs 11,000, 75%, i.e. Rs 8,250 shall be given as grant and 25%, i. e. Rs 2,750 as loan.

Glue Manufacture Centres

(i) Grant for meeting 75% of non-recurring expenditure on sheds, pits, tools etc. upto Rs 2,250 per centre.

(ii) Grant for meeting 75% of cost of land upto Rs 750 per centre.

ANNEXURE 3

Estimated Expenditure on Shoe making Training Centre

A Tools and Equipment for each Trainee

Name of tool	No.	Value Rs per set
1 Cutting knife	2 pieces	Rs 35
2 Skiving knives	2 ,,	
3 Pincus	1 pair	
4 Cutting blade	1 pair	
5 Stitching awls	2 pieces	
6 Skiving stone	1 piece	
7 Hammer	1 piece	
8 Iron	1 piece	
9 Screw driver	1 piece	
Total cost for 25 sets for 25 trainees		25×35=Rs 875
B General tools and equipment +Sewing machine 3 lk 15 type		3×725= 2,175
C (a) General purpose tools Hand saw, Bench vice, Drill machine, Files of sizes, Spanners etc,		200
(b) Shoe lasts 3 sets of full range (all sizes)		500
D Accommodation 20′×60″ covered area Rs 7 per sq. foot		8,400
E Raw Materials leather etc.		1,000
F Furniture etc.		500
		Rs 13,650

Roughly Rs 14,000

CHAPTER SEVEN
VILLAGE OIL INDUSTRY

The development of rural oilpressing industry is significant from the point of view of providing pure and fresh oil for human consumption and provision of the much needed employment opportunities to a class of artisans who are fast losing ground owing to the severe and unfair competition from oil mills. With the breakdown of the old village organisation the traditional links between the oilmen and farmers, who supplied the raw materials and provided a market for the products of the oilpressing industry, were ruptured and the oilmen were left without any support in their struggle for existence. In most cases, the existence of the ghani has come to have only a symbolic significance. It remains idle or is plied only for a very brief period during the year. Most of the oilmen have taken to alternative means of livelihood such farming, petty trade or day labour as a major or supplementry source of income.

Occupational Pattern

There are 199 families of oilmen in the Region. Of this 20 families were selected and information regarding their working during 1957-58 was obtained. The occupational distribution of these families during 1957-58 was as follows:

Table 1—Occupational Distribution (Sample Survey)

No.	Main occupation	Subsidiary Occupation	Number of families
1	Oilpressing	Trade	2
2	Oilpressing	Farming	6
3	Oilpressing	Agriculture labour	6
4	Farming	Oilpressing	6
	Total	...	20

Of the 20 families, as many as 18 have agriculture and 2 have trade as additional sources of income. In the case of 6 families farming has come to be their major sources of income and in the case of another 6 families it is their subsidiary occupation. Of the remaining 8 families who have no land, 2 have taken to trade and 6 have only labour as their stock-in-trade. Thus the decline of the oilpressing unit has forced as many as 90 percent of the oilmen families to shift to agriculture either as cultivators or as agricultural labour.

Oilpressing Unit

Practically all the oilmen have their ghanis installed in or around their homes. The kolhus are small in size. Besides the head other members of the family also attened to the different aspects of oilpressing. The women of the family look to the upkeep of the bullock and clean the oilseeds. When the head goes out to procure the seeds or deliver the oil to consumers, they attend to oilpressing also. According to the survey, 39 persons of the 20 families whose position was enquired into, are engaged in this industry. A ghani thus provides employment to two persons in the Region.

Equipment

The equipment of the telis comprises a kolhu, a bullock and minor accessories. The bullock of the teli is much below the size of a farmer's bullock.

The productivity of the old type kolhu is very low. 4 seers of oilseeds per charge are crushed in 2.50 hrs. Three charges can be taken per day. The crushing capacity of the old type kolhu thus comes to 12 seers of oilseeds per day and 90 mds. of oilseeds per year of 300 working days.

Production

The survey shows the production of oil and oilcake of 20 selected families during 1957-58 as follows:

Table 2—Sample Survey of Production of Oil

S- No.	Type of seeds	Seeds crushed in Mds.	Production (in Mds)		Percentage of oil extraction
			Oil	Oil cake	
1	2	3	4	5	6
1	Rape	417.00	105.00	312.00	25%
2	Mustard	320.00	96.00	224.00	30%
3	Linseed	18.00	4.50	13.50	25%
	Total	755.00	205.50	549.50	...

The Table shows that these ghanis crush only edible oil-seeds. Compared to the total crushing capacity of the 20 kolhus which is 1,800 mds per annum, only 755 Mds of oilseeds of different varieties were actually crushed during 1957-58.

Employment and Income

On an average, the ghanis crushed 37.75 Mds of oilseeds during the year 1957-58. On the basis of the capacity of crushing 12 srs of oilseeds a day. it means an employment of only 126 days in the year. For the remaining days in the year, the equipment remained idle excepting for the time the bullocks were used in agricultural operation by the families having land. The average income from oilpressing is estimated to be Rs 136 during 1957-58.

Raw Materials

The main varieties of oilseeds produced in the Region are groundnut, mustard, rape and linseed. While the production of groundnut is only for sale, the other oilseeds shown as subsidiary crop along with wheat and barley are used for oilpressing for local consumption. The production of these varieties of

oilseeds is sufficient to feed the ghanis of the area. The meagre resources of the telis, however, deprive them of the advantage of the use of locally available raw materials. While the traders and through them the mills who are more resourceful are able to buy the oilseeds in bulk at the time of harvest the oilmen have either to buy the seeds at higher prices during off season or to allow their ghanis to remain idle for a part of the year.

To some extent the practice of the cultivators to get their seeds crushed by telis continues and lends good support to the village oil industry of the Region. In normal year the supplies from this source account for 50 per cent of the capacity of the ghanis. During 1957-58, excessive rains and waterlogging, inflicted heavy damages to the oilseeds-crop in the area and consequently, the supplies of oilseeds from this source were much below the normal level. Only 225 mds which is 30 per cent of the total quantity seeds crushed during the year and 12.3 per cent of the total capacity of the ghanis could become available.

Consumption of Oil

A sample survey was conducted and 350 families were contacted to obtain information regarding the consumption of oil in the Region. The total number of members in these families was 2,192 and their consumption of oil was 201.00 mds during 1957-58. The average per capita consumption of oil for the Region came to 0.33 ozs per day. On the basis of the results of the survey total annual consumption of oil in the Region with its population of 1,00,000 comes to 9,280 mds.

Marketing

The following Table shows the rates of the oil and oilcakes produced by the ghanis and mills during 1957-58.

Table 3

Market Rate of the Oil and Oilcake (Ghanis and Mills)

S No.	Item	Ghani Rates per md		Mill Rates per md	
		Oil	Oilcake	Oil	Oilcake
1	2	3	4	5	6
1	Mustard	Rs 90 to 100	Rs 11 to 12	Rs 100 to 101	Rs 9.5 to 10.50
2	Rape	,, 80 to 90	,, 12 to 14	,, 70 to 80	,, 10 to 11
3	Linseed	,, 75 to 85	,, 11 to 12	,, 65 to 75	,, 9.5 to 10.5

The difference in the price of ghani and mill oil ranges from As -/2/- to -/4/- per seer. At the time of harvest the conditions regarding the supply of oilseeds as well as their price are comparatively easier and the difference between the price of ghani oil and mill oil is narrowed down. This difference tends to become wide during off season when the local oilman has to purchase the oilseeds required by him from the market by paying higher and sometimes exorbitant prices. The same thing holds good about the prices of oilcakes of different varieties produced by the cottage and the mill sector of the oilpressing industry.

Apart from this, the old system of crushing the oilseeds on self-sufficiency basis still continues in the Region though it has been gradually losing ground. Excessive rains and waterlogging have further aggravated the problem by severely damaging the oilseeds crops.

The oilmen sell the oil as well as oilcake directly to the consumers. They go from house to house and even to other villages to sell their oil. A large section of the village people still have a preference for ghani oil and are prepared to pay a higher price. Added to this preference is the facility of home delivery of

the oil, which is an important factor in far off villages where the normal trade channels have not reached so far. These factors enable the oilmen to market ghani oil at a price higher than that of the mill oil.

Inspite of this favourable situation the cheaper mill oil has led to a shrinkage in the demand and output of the ghani oil. Apart from mechanical efficiency of the mills, the adulteration of oil has been widely practised at the cost of the consumer. This compels a number of telis to resort to adulteration to enable them to sell their oil in competition with the mill oil.

The ghani cake, because of its higher oil content, commands a better market. The richness of the ghani cake is widely known and appreciated. This facilitates its disposal.

The Problems of the Industry

The main problem of the village Oil Industry in the Region is the competition from the mills. The cheaper mill oil has succeeded in displacing the oilmen to an increasing extent from their traditional occupati n. Besides this, another formidable problem created by the mills is in regard to the raw materials.

With the oilseeds drained away from villages the oilmen are compelled to pay a higher price for the oilseeds during the off season. Often the rise in price is so great that the plying of ghani becomes uneconomic. The supp ies of oilseeds from self-consumers can utilise only a small part of the capacity of the local ghani and there is need for augmenting the supply of oilseeds throughout the year at reasonable price through the creation of a suitable agency.

The pressure of low priced mill oil and the temptation of gains has led to adulteration of mill and ghani oil. This has shaken the confidence of the discriminating buyers who have been

paying higher price for pure and fresh ghani oil. There is thus an urgent need for an agency which can exercise necessary supervision and ensure the purity of ghani oil.

The Programme for 1958-59

The Intensive Area Organisation has attempted to tackle the problems faced by the oilmen in the Region. The first phase of the programme consisted of demonstration of the working of the improved ghanis through the setting up of model oilpressing centres and manufacture and supply of improved ghanis at subsidised prices. The Organisation has also recruited trained mistries to attend to the servicing of ghanis within the Region.

Initially, several difficulties were experienced. Notable among these difficulties were non-availability of improved ghanis and trained mistries. The heavy fall in the production of oilseeds during 1956-57 and 1957-58 due to excessive rains and waterlogging further increased the difficulties of the Organisation.

The difficulties have been successfully tackled and the ground for the formulation of a comprehensive programme covering all aspects of the industry has been prepared. The four model centres in the Region have created a demand for improved ghanis which is being met by the workshop. The mistries attached to the model oilpressing centres are attending to the work of servicing of the ghanis in the Region. So far 5 improved ghanis have been set up in addition to those of the model centres and their number is expected to be raised to 10 by the end of 1958-59.

The Programme for 1959-60

Difficulties relating to the supply of raw materials and marketing of oil precludes the possibility of an immediate replacement of the old type ghanis by the improved ones. The plan, therefore, envisages measures to ensure full utilisation of the

existing ghanis and a phased programme of installation of improved ghanis.

Installation of Improved Ghanis

It is proposed to set up 40 improved ghanis in the Region by the end of 1959-60. The workshop which has already started production will supply the ghanis to the artisans. The oilmen will be further helped to construct sheds for the improved ghanis which require more space than the old type ghanis.

Production

It is expected that 149 old type ghanis will work throughout the year. Of the 50 improved ghanis the ten ghanis which will be installed by the end of March 1958-59 will work through out the year and the remaining ghanis will be operated after installation. On an average each of these ghanis will be plied for 6 months during 1959-60.

The following Table shows the expected production of oil and oilcake by these ghanis during 1959-60.

Table 4—Production of Oil and Oilcake, 1959–60 (Estimate)

S. No.	Item	OIL		OILCAKE	
		Qnt. (in mds)	Value (in Rs)	Qnt. (in mds)	Value (in Rs)
1	Rape	2,330	1,98,050	6,720	90,720
2	Mustard	2,520	2,39,400	5,680	68,160
3	Linseed	195	18,600	555	6,660
	Total	5,045	4,56,050	12.955	1,65,540

Production at Model Centres

In the 4 model centres 8 ghanis will be plied throughout the year 1959-60. Only mustard oil is being produced in these centres. The centres are expected to crush 1440 mds of oilseeds. The production of oil is expected to be 480 mds of oil of an estimated value Rs 43,200 and 960 mds of oilcake of the estimated value Rs 11,520.

Income

(A) **Old Type Ghanis:**

The following Tables show the cost of production and estimated value of sales of oil and oilcakes which will be produced by the 149 old type ghanis.

Table 5—Expenditure on Production (149 ghanis)
Cost of Production

S. No.	Item	Quantity	Rate	Amount in Rs
1	**Oil seeds**			
	a. Rape	6,800 Mds	Rs 24 per Md	1,63,200
	b. Mustard	6,200 Mds	Rs 30 per Md	1,86,000
	c. Linseed	500 Mds	Rs 23 per Md	11,500
2	**Equipment**			
	A—Bullocks			
	a. Feeding	149 Bullocks	Rs270 per Bullock	40,230
	b. Depreciation	149 ,,	Rs 20 ,, ,,	2,980
	B—Ghanis			
	a. Repairs & Maintenance	142 Ghanis	Rs 10 per ghani	1,490
	b. Depreciation	,, ,,	,, 10 ,,	1,490
3	Sheds	149 shed	,, 10 per shed	1,490
	Total Expenses		...	4,08.380

Table 6—Production of 149 Ghanis

S. No.	Item	Qty in mds	Rate per md in Rs	Amount in Rs
1	**Oil**			
	a. Rape	1700	85.00	1,44,500
	b. Mustard	1860	95.00	1,76.700
	c. Linseed	125	80.00	10,000
	Total 1	3685	...	3,31,200
2	**Oil cake**			
	a. Rape	5100	13.50	68,850
	b. Mustard	4340	12.00	52,080
	c. Linseed	375	12.00	4,500
	Total 2	9815	...	1,25,430
	Total		...	4,56,630

The total expenditure, value of production and income from oil pressing of the 149 families are expected to be Rs 4,08,380, Rs 4,56,630 and Rs 48.250 respectively during 1959-60. The average income of an oilman's family will rise from Rs 136 in 1057-58 to Rs 324 during 1959-60. The daily income from oil-pressing will be of the order of Rs 1.08 during 1959-60.

B. Improved Ghanis

Table 7—Expenditure on Production 50 Improved Ghanis (six months)

S. No·	Item	Quantity	Rate	Amount in Rs
1	**Raw Materials**			
	(a) Rape	2,250 Mds	Rs 24 per Md	54,000
	(b) Mustard	2,000 ,,	,, 30 ,,	60,000
	(c) Linseed	250 ,,	,, 23 ,,	5,750
2	**Equipment**			
	A **Bullock:**			
	Feeding	50 Bullocks	Rs 540 per Bullock	13,500
	Depreciation	50 ,,	,, 60 ,, ,,	1,500
	B **Ghanis:**			
	Maintenance	50 Ghanis	Rs 30 per ghani	750
	Depreciation	50 ,,	,, 30 ,, ,,	750
2	**Sheds:**			
	Maintenance & Depreciation	50 sheds	Rs 25 per shed	625
	Total Value	...	...	1,36,875

Table 8—Production of 50 Improved ghanis (six months)

S. No.	Item	Quantity (in Mds)	Rate per Md. (in Rs)	Amount
1	**Oil**			
	(a) Rape	530	85.00	53,550
	(b) Mustard	660	95.00	62,700
	(c) Linseed	70	80.00	8,600
	Sub–Total	1,360	...	12,4850
2	**Oil cake**			
	(a) Rape	1,620	13.50	21,870
	(b) Mustard	1,340	12.00	1
	(c) Linseed	180	12.00	
	Sub-total	4,500	...	40,110
	Total		...	1,64,960

The crushing capacity of improved ghanis is double that of the old Kolhus. The extraction of oil is 3 per cent higher than what is obtained from the old type ghanis. These factors account for the increase in production and income from the operation of improved ghanis. Total income of 50 oilmen who will be provided with improved ghanis is estimated to be Rs 25,085 in six months time. The average daily and annual income will be Rs 3.34 and Rs 1,002 respectively. The income from oilpressing with improved ghanis will be 209 per cent above that from the old type ghanis.

Requirements for the Implementation of the Programme

To carry out the programme outlined above, it will be necessary (1) to arrange for the supply of improved ghanis (2) construction of sheds (3) to supply raw materials at reasonable rates to oilmen and (4) to assist the oilmen in the marketing of oil.

Of central importance is the arrangement regarding supply of oilseeds. The requirement of oilseeds will be as follows:

Table 9—Oilseed Requirements for the Programme

S. No.	Item	Qty (Mds)	Value (Rs)
1	Rape	9,050	1,97,000
2	Mustard	8,200	2,46,000
3	Linseed	750	17,250
	Total	18,000	4,60,250

Of the total requirement of 18,000 maunds of seeds, 25 per cent will be supplied by self-consumers and arrangement for the supply of 25 per cent will be made by the telis. It will be necessary for the Intensive Area Centres to arrange for the remaining 50 per cent as detailed below.

Table 10—Oilseed Supply through the Intensive Areas

S. No.	Item	Qnty in Mds	Rate per Md	Amount (Rs)
1	Mustard	7,000	28	1,96,000
2	Rape	2,000	22	,44,000
	Total	9,000	...	2,40.000

The oilseeds will be purchased at the time of harvest and stocked in the godowns of the Intensive Area Centres. The Organisation will charge Rs 2 per md of oilseeds to cover its cost of purchase and transport. To this date the oilmen of the area have been able to sell all the oil and oilcake which they produce. Under the programme for 1959-60, it is expected that with the assistance in the form of supply of raw materials at reasonable rates they will have no difficulty in the disposal of their products.

To implement the programme for village oil industry the following units will be evolved in the Region:

A **Regional Units**

(1) Manufacture and supply of improved ghanis
(2) Stocking of oil seeds

B **Area Units**

(1) Servicing of ghanis
(2) Sale of oil
(3) Inspection of the working ghanis
(4) Management of model oilpressing centres

C **Home Units**

(1) Old and improved ghanis

Regional Units:

The Saghan Kshetra Vikas Samiti, Dhanaura will take up the management of regional units. It has already set up one workshop for the manufacture of improved ghanis. It will also arrange for the purchase of oilseeds. If the production of oilseeds within the Region is not adversely affected by the unfavourable weather conditions it will be in a position to purchase the oilseeds locally.

After purchase, the oilseeds will be supplied to the Intensive Area Centres tə be stocked in their godowns. In the off season whén there prevails a shortage of oilseeds in the local market and the price rises, oilmen will be supplied oilseeds at a price which covers the total cost of purchase of oilseeds but no profit.

Area Units:

The servicing of ghanis will be attended to by the five Intensive Area Centres in the Region. One trained mistry will be appointed for this work by the Centre. The service of the mistry will be available to all the oilmen free of charge.

On an average one mistry will attend to 40 ghanis. The comparatively smaller number of ghanis under his charge will

enable the mistry to promptly meet the need for repairs and the danger of equipment lying idle for want of necessary technical assistance will be obviated.

Surplus production of oil will be marketed through the depots which will be started in the Region. Each of the five Areas will run depots in the villages. Through these depots oil and oilcake produced by the model oilpressing centres as well as a part of that produced by oilmen will be marketed.

HomeUnits:

The actual work of oilpressing with improved and old type ghanis will be attended to by the oilmen families. The units at different levels will assist these families in all possible ways to find raw materials, technical guidance and market for their products.

Impaet of the Programme

According to the survey, the per capita consumption of oil is 0.3 oz. per day. The total requirement of oil comes to 9,580 mds of oil according to the present pattern of oil consumption in the Region. Compared to this the 199 ghanis in the Region and 8 ghanis at the 4 model centres will produce 5525 mds. of oil during this period. The aggregate production of oil will be enough to meet 60 per cent of the demand for oil of the Region.

The programme for 1959–60 will lead to the fuller utilisation of the old type ghanis and raise the number of improved ghanis from 10 in 1958-59 to 50 by the end of 1959-60. Through fuller utilisation of the old type ghanis the income of the telis will be raised from Rs 136 per family in 1957-58 to Rs 324. The income of the families who will take to improved ghanis will rise from 136 in 1957-58 to Rs. 1008 per annum in coming years.

The doubting of the crushing capacity and higher percentage of oil extraction in improved ghanis will lead to a lowering of the cost of production by annas 2 to annas 3 per seer of oil. The supply of oilseeds at a reasoable price will lead to a strengthening of the competitive position of the Village Oil Industry in the Region. This will pave the way for the replacement of the remaining ghanis in the Region by improved ghanis in the coming years.

CHAPTER EIGHT

OTHER SCHEMES

During the first stage of the Plan, besides the industries and general schemes presented already, a few minor schemes will be taken up. They are fibre work, soap making, paper making and workshop units.

1 FIBRE INDUSTRY

Present Position

Fibre industry is at present pursued by some socio-economically backward communities like Chamars and Kanjars. The former are generally engaged in making bans and mats and the latter in ropes out of kans and jute. The other varieties produced by fibre workers are chairs (Moonj), khus tattis, sirki, bamboo chicks, baskets etc. The equipment required for the work consists in one wooden arm (Re 0.5), 2 wooden rollers (Rs 4), 5 wooden poles (Rs 5) and 1 ply making charkha (Rs 40) costing in all Rs 49.5. Most of the families have equipment other than the ply making charkhas which can twist 3 or 4 ply ropes. The implements are simple and do not require special skill in operating them With this equipment the artisans earn about 8 to 10 annas per day during a six-month season.

Problems of the Industry

Two problems affect this industry in the Region:

(i) Low productivity and inferior quality of goods;

(ii) Need to work out-doors for want of improved equipment which enables work in doors;

There is need to develop the fibre industry in the Region by providing improved equipment and necessary training in handling it.

Development Programme for 1959-60

The programme for 1959-60 envisages:

(i) the setting up of three model hessian weaving centres;

(ii) the setting up of six sutli and rope making centres; and

(iii) Running 60 classes for training in fibre work, and provision of improved implements to 480 artisans in the Region.

(i) **Hessian Weaviug Centres :** Each of the three centres will be in the charge of a trained person assisted by another trained worker who will be the instructor. Each centre will train for four months and subsquently employ for 8 months, 20 artisans, 14 of them in spinning on batara and pedal charkhas and 6 in weaving finer sann and jute yarn into cloth. It is expected that the three centres will produce during the year about Rs 45,000 worth of fibre products as detailed in Table 1.

Table 1—Production of Hessian Centres

S. No.	Item	Persons	Training Period		Post-training period	
			Qnty	Value Rs	Qnty	Value Rs
1	2	3	4	5	6	7
1	Yarn	42	3,150 lbs	1,200 [1]	16,800	8,400 [2]
2	Hessian	18	6,480 sq. yds	4,050 [3]	43,200	32,400 [4]
	Total	60	...	5,250	...	40,800

1 @ Rs 00.38 N. P per lb
2 @ Rs 00.50 N. P. per lb
3 @ Rs 00.62 N. P. per lb
4 @ Rs 00.75 N. P. per lb

After training, each spinner will produce 2 lbs of yarn and each weaver 12 sq. yds of cloth per day. It is expected that during the year 60 persons (42 spinners and 18 weavers) will be provided with employment for 12,000 mandays, 8,400 mandays in spinning and 3,600 mandays in weaving and earn Rs 9,600 as income, Rs 4,200 by the spinners and Rs 5,400 by the weavers at the rate of wages annas 4 per lb of yarn spun and annas 2 per sq. yds of cloth woven.

(ii) **Sutli and Rope Making:** It is proposed to start 6 sutli and rope making centres each under an experienced worker, and train for four months at each centre 20 persons, 6 in spinning on pedal charkhas, 10 in sutli-making on batara charkha and 4 in rope-making. Each trained person will produce 3 lbs of yarn on a pedal charkha while 2 trained workers jointly produce 12 lbs of yarn on a batara charkha. The former yarn is superior to the batara yarn and is little costlier too. A major portion of the yarn production will be used in sutli and rope making. It is expected that the 6 centres will together produce about 1.13 lakh lbs of yarn valued at over Rs 42,000 as set out in Table 2.

Of this yarn, some 36,000 lbs valued at Rs 12,800 will be utilised in each of the two processes of sutli making and rope making and 25,600 lbs of quality yarn of pedal charkhas valued at Rs 12,300 will be supplied to the Hessian weaving centres, the balance of 15,200 lbs of yarn valued at Rs 5,200 being made available for sale in the Region.

Table 2—Production of Sutli and Rope Centres

S. No.	Implement	Persons	Yarn Production during training		Production after training		Total Production	
			Qnty	Value	Qnty	Value	Qnty	Value
			lbs	Rs	lbs	Rs	lbs	Rs
1	Batara Charkha	60	*15,260	3,800	72,999	‖ 27,000	8,72,000	30,800
2	Pedal Charkha	36	×4,000	1,500	21,600	+10,800	25,600	12,300
	Total	96	19,200	5,300	93,600	37,800	1,12,800	42,100

* @ 25 nP per lb
‖ @37 ,, ,,
× @ 37 nP per lb
\+ @ 50 ,, ,,

Spinning will be done generally by women of artisan families and hence work will be done throughout the year at each centre. The productivity of batara charkha is 8 lbs per day, the per capita earnings being Re 0.75 per day. A worker on pedal charkha also produces 3 lbs of superior yarn and earns Re 0.75 per day. It is expected that sutli and rope making will provide employment for 120 persons for 24,000 mandays and bring them income of Rs 21,600 as shown in Table 3.

Tabie 3—Employment and Income in Sutli and Rope Centres

S. No	Item.	Persons	Employment	Income (Rs)
1	Spinning			
	(a) Batara Charkha	60	12,000	9,000
	(b) Pedal Charkha	36	7,200	5,400
2	Rope making	24	4,800	7 200
	Total	120	24,000	21.600

(iii) Training Programme

Besides the training and employment envisaged for 1 80 persons in Hessian, Sutli and Rope making, a training programme and supply of improved equipment for 480 persons will be implemented during the year. These 480 persons will be trained for 2 months each in various processes of the industry as set out in Table 4. One instructor can train 16 persons in two batches of 8 each for a 2-month period and settle them in the industry. There will be 60 batches in all.

Table 4—Tralning Programme

S. No.	Items of Training	Persons trained
1	Spinning on Batara Charkha and making of ban, sutli and ropes	360
2	Spinning on Pedal Charkhas and making of Sutli & Ropes	96
3	Moodha making (chairs)	8
4	Preparation of chicks	8
5	Making of Khas Tattis	8
	Total	480

These workers will be provided with improved equipment by the Intensive Areas Centres on hire purchase system. While every trained worker on batara charkha will be provided with one batara charkha, 4 artisan families will be given one rope making machine for their joint use. They will be jointly responsible for paying the price of the rope making machine in instalments. Table 5 states that 480 artisans will together produce, during a six-month season in 1959-60, yarn and other fibre products valued at about Rs 84,000. It is expected that artisans will find enough raw materials to keep them fully engaged during the period.

Table 5—Production of 480 artisans

S. No.	Item	No of persons	Variety	Production		
				Qnty	Rate Rs	Amount Rs
1	Spinning on Batara Charkha	360	Yarn	1,90,600 lbs	00.37 per lb	67,525
2	Spinning on Pedal Charkha	96	Yarn	57.600 lbs	00.50 per lb	28,800
3	Chick-making	8	Chicks	1,200 Chicks	2 per chick	2,400
4	Moodha making	8	Moodhas	1,200 Moodhas	2.50 per Moodha	3,000
5	Making of Khas tattis	8	Khas Tattis	1,200 Khas tatti	7.00 per khas	8,400
	Total	480	...	...	...	1.10,125

The batara yarn is good for ban and ropes, while the pedal charkha yarn is good for sutli and ropes. The total value of production of the 480 trained workers (ban, sutli, rope, chicks moodhas and tattis) will amount to Rs 1,94,800 under the programme. Qf the total yarn production of 2.48 lakh lbs., the bulk will be used for sutli and rope making and the balance for ban.

Table 6—Pattern of Utilisation of Yarn

S. No.	Item	Total Yarn Production		Utilisation of Yarn					
				As Ban		As Sutli		As Ropes	
		Qnty (lbs)	Value (Rs)	Qty (lbs)	Value (Rs)	Qty (lbs)	Value (Rs)	Qty (lbs)	Value (Rs)
1	Batara Charkha	19,600	67,525	95,300	45,700	...	...	95,300	43,300
2	Pedal Charkha	57,600	28,800	...	...	28,800	74,400	28,800	17,600
	Total	2,48,200	96,325	95,325	45,700	28,800	74400	1,24,100	60,900

Employment and Income

Employment in the fibre work is seasonal lasting for about 6 months. The training will be completed before the season begins so that the trainees may work in full swing during the season. Each worker on batara charkha will earn Re 0.84 per day or Rs 1.68 per family of two workers. Those on the pedal charkha will earn Re 0.75 each per day. In respect of moodha, chick and khas tatti-making, a family of two workers working jointly will earn Rs 2 per day. The 480 artisans will be employed for 72,000 mandays and will earn Rs 0.60 lakhs as shown in Table 7.

Table 7—Employment and Income of 480 artisans

S. No.	Item	No. of persons	Employment (in M/days)	Income Rs
1	Batara Charkhas:	360		
	Spinning		32,800	23,825
	Ban making		15,800	11,925
	Rope making		6,400	9,515
	Total (1)	360	54000	45275
2	Pedal Charkhas	96		
	Spinning		9,600	7,200
	Sutli making		4,800	3,600
	Total (2)	96	14,400	10,800
3	Moodha making	8	1,200	1,200
4	Chick making	8	1,200	1,200
5	Khas Tatti making	8	1,200	1,200
	Total (3, 4, 5)	24	3,600	3,600
	Grand Total	480	72,000	59,775

Expenditure on the Programme

Of the estimated expenditure of Rs 1.94 lakhs, (Table 8) Rs 0.42 lakhs is on equipment, Rs 0.95 lakhs on training programme and Rs 0.57 lakhs on raw materials, It is proposed to meet this cost from the funds provided by the Khadi Commission as grants for equipment and training and loans towards working capital.

Table 8—Estimated Expenditure on the Programme (1959-60) (Rs)

Item	Persons	Rate per month Rs	Period (months)	Amount		
				Grants Rs	Loans Rs	Total Rs
1	2	3	4	5	6	7
A. Hessian weaving (3 Centres)						
1 Equipment (Cost and Transport)	...	...	...	3,000	3,000	6,000
2 Stipends (Training)						
i. Men	18	30	3	1,620	...	1,620
ii. Women	42	20	3	2,520	...	2,520
3 Wages & Miscellaneous	...	...	...	9,900	...	9,900
4 Establishment	...	...	...	13,200	...	13,200
5 Working Capital	...	...	...	...	9,000	9,000
Total A	60	...	3	30,240	12,000	42,240

	B. Sutle and rope centres (6)						
1	Equipment Cost & Transport)	...	...	...	6,000	...	6,000
2	Stipends (Training)						
	i, Men	24	30	2	1,440	...	1,440
	ii Women	96	15	2	2,880	...	2,880
3	Wages & Miscellaneous	...	...	...	18,000	...	18,000
4	Establishment	...	...	...	9,000	...	9,000
5	Working Capital	...	...	...	...	18,000	18,000
	Total B	120	...	2	37,320	18,000	55,320
	C. Training (60 sessions 480 trainees)						
1	Equipment (Cost & Transport)	...	500 per session	...	30,000	...	30,000
2	Stipends	480	20	2	19,200	...	19,200
3	Salaries of instructors	60	75	2	9,000	...	9,000
4	T. A. at Rs 30 per centre for 60 centres	...	...	...	1,800	...	1,800
5	Contingency (60 centres)	...	...	...	6,000	...	6,000
6	Working Capital	...	...	...	...	30,000	30,000
	Total C	540	...	2	66,000	30,000	96,000
	Total for A, B& C	720	...	...	1,33,560 (69%)	63,000 (31%)	96,000 (100%)

Impact of the Programme

The programme will result in training of 180 workers and settling them in Hessian and Sutli and Rope work and the training of 480 artisans in new skill in fibre work and providing them with better equipment which will raise their earnings very considerably. In respect of ban, sutli and ropes, the income will rise from Rs 0.5 to Rs 0.75 per day per worker, while a home unit of two batara eharkha workers will earn Rs 1.5. Those engaged in Moodha, chick and khas tatti making will earn Rs 2 per day for 2 workers.

Besides this rise in income the workers will have better working conditions as batara and pedal charkhas enable work indoors. The workers on the Hessian loom will earn Rs 1.5 per day.

Besides providing new skills and better working conditions the programme will show by demonstration through its working centres a new field to other artisans of the area so that the work of these centres may be copied by the Areas in the neighbourhood.

2 SOAP-MAKING OF NON-EDIBLE OILS

The Dhanaura Region has a large potential supply of non-edible oilseeds, particularly Neem and Arandi. It is estimated that the Region has about 5,000 Neem trees yielding roughly 20,000 mds of Neem seeds bearing about 1,500 mds of oil valued at about Rs 0.75 lakhs.

Consumption of Non-edible Oil and Soap

Non-edible oil is now used to a little extent in medicines, and in paint and lubricant manufacture. A sample consumption survey has shown that about 17 mds of Arandi Oil and 1 md of Neem oil were consumed during 1957-58 by 350 families. The use of non-edible oil in soap making is recently started in Deengra area.

Soap consumption is quite low in the Region being about 1.75 lb per capita during 1957-58. One important point, however, is that soap is used for washing and/or for toilet in almost every household as shown by the sample survey (Table 1).

Table 1—Consumption of Soap (Sample Survey : 350 families)

S. No.	Name of Centre	Bathing		Washing					
				Soap Bar		Soap Cake		Soap Chip	
		Qty Nos.	Value (Rs)	Qty (lbs)	Value (Rs)	Qty (Nos)	Value (Rs)	Qty (lbs)	Value (Rs)
1	Dhanaura	645	215.00	44	56.00	3,170	1,051	2	1.50
2	Deengra	126	42.00	...	...	914	305	40	25.00
3	Karaundi	642	214.00	32	40.00	942	314	...	...
4	Kamelpur	345	115.00	...	...	1,092	364	...	...
5	Khadgujar	264	88.00	...	...	2,265	755	6	4 50
	Total	2,022	674.00	76	96.00	8,383	2,789	48	31.00

Deengra Model Centre

A model soap centre was started ('A' Unit) at Deeng a in March 1956 to utilise local non-edible oilseeds and to produce soap for local consumption. Three ghanis have been installed at Kapsuwa in October, 1958 to supply oil to the soap centre.

The centre has equipment valued at about Rs 3,400 consisting of tank, pans, moulds, dies, cutting tables etc. As owing to bad weather conditions, oilseeds could not be locally collected and stocked in the Area, non-edible oil had to be imported at high cost. Other materials like caustic were bought at Delhi and elsewhere.

Production of soap increased since the inception of the unit. Against 153 mds produced in 1956-57 the production was 205 mds during 1957-58 (value Rs 10,500). As soap has a demand at Deegra and the neighbourhood most of the production has been sold. The production during 1958-59 is expected to be about 240 maunds.

As against 2 full-time workers and 76 part-time workers employed during 1957-58 the centre has now 3 full-time and 39 part time workers engaged in the industry.

Problems of the Industry :

The soap industry has three problems—

(1) Lack of local interest in seed collection;

(2) Paucity of supply of controlled commodities like caustic at controlled prices; and

(3) Popularity of mill made soap varieties among people. The problems can be solved by propaganda and education among the people regarding local industries.

The Development Programme for 1959-60

It is proposed to expand the work of the Deengra soap unit during 1959-60 in a two fold direction.

(1) Installation of 3 more ghanis for non-edible oil pressing;

(2) Collection of Non-edible oil seeds regularly.

The three ghanis will be installed at Dhanaura for processing locally collected non-edible oilseeds.

It is expected that about 2,500 mds of Neem oilseeds will be collected in the Region during the year. These oilseeds are expected to yield about 225 maunds of oil and 525 maunds of cake.

Soap Production :

The oil (locally pressed) will suffice to produce 600 maunds of washing soap and 7200 carbolic soap cakes, the production being valued at about Rs 30,000.

Employment and Wages :

The programme is expected to employ over 270 persons most of them seasonal and distribute among them about Rs 12,000 as set out in Table 2. Besides, the programme will provide part-time work to a number of cartmen in transporting the seeds from the collection centres to the soap centre.

Table 2—Employment and Wages

S No.	Item	Full time		Seasonal	
		No.	Wages (Rs)	No.	Wages (Rs)
1	Seed collection	...	...	250	5,500(2 mhs)
2	Decortication	..	...	16	2,500(4 „)
3	Oilseeds pressing	4	1,440	...	...
4	Soap making	3	2,640	...	...
	Total	7	4,080	266	8,000

Impact

The development programme is expected to have beneficial results on the Region in three directions—

(1) Considerable idle man power will be diverted particularly during the off-season, in collection of seeds and decortication;

(2) Large available non-edible oilseed resources will be industrially utilised; and

(3) Considerable quantities of edible oils now being used for industrial purposes in the Region will be conserved for edible purposes.

3 HANDMANDE PAPER

Apart from the general demand for paper in the Region there is, in particular, a demand for hand made-paper from Kshetra Samitis and industries units for printing, drafting etc. This need can be met by setting up a medium sized hand-made paper unit in the Region.

Raw materials like grasses and crops (wheat and mustard) are available for quality paper besides paper cuttings of local printing presses and rags of tailoring shops. It is proposed to set up a medium sized unit at Gajraula (Khadgujar Area) under the programme for 1959-60. Construction work and installation of machinery and training workers in paper making are expected to take 8 months leaving the last 4 months of the year for production.

To avoid the need for chemical processing of grasses etc., paper cuttings and tailor-cuttings will be used for pulp-making during the year. It is expected that about 9,600 lbs of these cuttings valued at about Rs 2,200 will be required during the period. This material will be collected from parts of the Region.

The unit will work under a trained person; and 4 workers (2 vatmen and 2 couchers) will be trained at Kalpi and employed.

The capacity of the unit is to produce 30 tons of utility paper besides card board, file board and blotting and employ nearly 25 persons per shift. During the 4 months, however, about 300 reams of utility paper (17″×27″), weighing 7,200 lbs and valued at

Rs 9,000 will be produced for local consumption. Five persons employed in the unit, will earn Rs 1,000 as wages.

Expenditure of the Programme: The programme will cost about Rs 66,000 of which Rs 30,000 is on construction, Rs 30,000 on machinery and equipment and Rs 6,000 working capital. While the cost of the buildings and machinery etc. will be provided by the Khadi Commission on 50 per cent grant and 50 per cent loan basis, the working capital will be obtained as loan.

Impact : While the unit will solve the immediate problem of procuring handmade paper for local consumption, it will create new skills in the area and form a nucleus for a regional paper making unit, which can utilise local idle raw materials and man-power eventually.

4 WORKSHOP UNITS:

With the implementation of the Intensive Area Scheme in the Dhanaura Region the need for a large scale distribution of equipment among artisans, farmers etc. increased. Ghanis, ambar sets, carding machines, agricultural implements, cane crushers and other equipment and accessories had to be purchased by the Kshetra Samitis from outside for local supply. Moreover, whenever any piece of equipment or tool was out of order it had to be left unused for want of local facilities for servicing and repairing.

As the programme of phased technological improvement in the Region was introduced a need was felt for the procurement and distribution of improved equipment on a larger scale. Such work implied the provision of three facilities:

(1) Supply of equipment at reasonable prices;
(2) Regular servicing and repair; and

(3) Imparting of technical knowledge in handling the implements by proper training.

With a view to meeting these requisites a workshop has been set up at Dhanaura and equipped with machinery at a cost of about Rs 12,000.

Table 1—Equipment of the Dhanaura Workshop

S. No.	Name of machine	Value	Purpose
1	Electric drill	413.25	Drilling
2	Spray painting Gun	667.59	Spray painting
3	Bench vices (2)	94.50	Pressing & cutting
4	Crucibles	462.50	To cut gears
5	Battery Charges with call tester	341.50	Charging battery
6	Brench lathe machine	1057.06	Lathe work
7	Electric welding ,,	2077.75	Welding
8	Power Hacksand .,	345.00	To cut steel
9	Brench lathe ,.	1,100.00	Lathe work
10	Electric grinder Motor	60.00	To run grinding machine.
11	Grinding machine	59.81	Grinding
12	Through check-dog check	235,50	To catch hold the machine
13	8 Lathe machine (heavy type)	3,059.18	Lathe work
14	4½ Lathe machine	1,280.53	,,
15	Elec. Motor 10 H. P.	930.00	
	Total	12,161.17	

Besides this machinery the workshop possesses one lathe machine, two power drills, and one wool carding machine given by the Dhanaura Kshetra Samiti,

During 1958-59 it is proposed to make the workshop self-contained by installing some more machinery, such as, milling machine (Rs 5,000), an iron cutter (Rs 2,200), a plainer (Rs 4,500) and chromium plated plant No. 2 (Rs 4,000) costing in all Rs 15,700. For fitting and supplementing these machines some tools valued at Rs 3,414 have been purchased. A huge main foundry with a capacity to cast 100 mds of iron at a time is under construction.

The workshop has two branches; smithy and carpentry.

(i) **Smithy :**

The Smithy Section started production early in December 1958. During the yaar 1958-59 it is proposed to manufacture parts of ambar charkhas, crushers, chaff cutters, agricultural implements like tillers, tractor tiller parts, pulleys etc. valued at Rs 10,000 besides repair and servicing of oil engines, crushers, tractors etc. which may bring in an income of Rs 2,000 as charges. The branch has 28 persons on its staff as detailed in Table 2.

Table 2—Staff

A Production			B Administrative		
Rank	No.	Salary P. M. (Rs)	Rank	No.	Salary P. M. (Rs)
(i) Turner	4	120	(i) Engineer	1	300
(ii) Fitter	2	120	(ii) H/Clerk	1	125
(iii) Moulder	2	90 to 120	(iii) Clerks	3	60
(iv) Electrician	1	100		5	
(v) Blacksmith	1	100			
(vi) Welder	2	90 to 120			
(vii) Pattern maker	1	200	C Others		
(viii) Carpenter	1	105	(i) Tractor Driver	1	60
(ix) Assistants	6	20 to 60	(ii) Cleaner	1	30
	20		(iii) Watchman	1	40
				3	

(ii) **Carpentry :**

The Carpentry Branch comprises two sections—

(a) Saranjam and (b) Furniture

(a) The Saranjam Section set up in June, 1958 produces ambar sets, carding machines, spare parts etc. Some 100 ambar sets (Rs 88 each) and 5 carding machines (Rs 310 each) besides some spare parts valued in all at Rs 11,000 have been produced during the year and most of the production has been sold. It is expected that during the year 600 ambar sets (Rs 52,800), 30 carding machines (Rs 9,100) and 200 sets of spare parts (Rs 1,200) valued in all at Rs 63,100 will be manufactured in the Section. The Section has a staff of 12 Nos. with salary ranging between Rs 40 and Rs 95 per month besides 11 carpenters employed on contract basis.

(b) Furniture (Home Carpentry)

This Section started in January, 1958 has so far produced household and office furniture valued at Rs 20,500 and supplied them to several offices and local households. It is expected that goods valued at about Rs 20,000 will be produced before the end of 1958-59.

Development Programme for 1959-60

The Section employs 18 persons in all of whom 9 are carpenters, 5 labourers both on contract basis and the rest administrative staff.

In view of the need for a large supply of equipment and other materials for the development programme in village industries and housing envisaged for 1959-60, it is proposed to expand the workshop unit during the year. The programme, therefore, envisages (i) the addition of one electrical lathe machine and one electrical sawyer, (ii) setting up of 4 Area workshops in the Region, (iii) provision of training for mistries and carpenters.

Production

With the existing equipment and new equipment proposed to be added, it is expected that a production of ambar sets, carding machines and other spare parts chaff cutters, sugar industry equipment, hardware for house construction, agricultural implements etc. valued in all at over Rs 3.5 lakh will be produced during the year as set out in Table 3.

Table 3—Production

Item	No.	Value (Rs)
1 Equipment for Khadi Industry		
(i) Ambar sets	1,500	1,23,000
(ii) Carding machines	85	26,350
(iii) Spare parts	400 sets	2,400
2 Sugar Equipment		
(i) Cane crusher parts	15 sets	7,500
(ii) Sugar Plant Pots	10	50,000
(iii) Crystallisers	50	5,000
(iv) Bulloc : Driven Kolhu parts	50	17,000
3 Building Equipment		
(i) Pipes	...	5,000
(ii) Iron parts per house building (Nails, hinges etc.)	...	10,000
4 Agricultural Implements Such as ploughs, sickles, crowbars, tillers etc. Chaff cutter machine.		10,000
5 Others		
(i) Motor spare parts	...	10,000
(ii) Hand calandering machine (textile)	10	12,500
(iii) Ball-bearings	...	5,000
(iv) Furniture	...	62,000
(v) Misc. items	...	12,500
		3,58,750

Area Workshops :

As adjuncts to the central workshop at Dhanaura, 4 area workshops will be opened in the other four Intensive Areas with necessary equipment and staff. These workshops will attend to the minor repairs and servicing of their respective areas while heavy repair work will be done at the central workshop.

Each workshop will have a staff of two mistris, one carpenter and one servicing worker and will involve a total cost of Rs 4,340 towards salaries, contingencies and minor equipment.

Training Programme :

While a growing demand for machines in various technical lines is felt in the Region, it is not feasible to provide a long term training course in mechanical or electrical engineering at the woskshop during the first year itself. It is, therefore, proposed to take 15 apprentices on daily wage basis in the various departments of the workshop and train them in various skills.

Administration:

The Central Workshop and the Area Units will be devided into 8 administrative sections, viz.

1 Saranjam Section,
2 Lathe Section,
3 Electrical Section,
4 Pattern and Designing Section,
5 Blacksmithy Section,
6 Repairing Section,
7 Stores Section,
8 Marketing.

The work will be supervised by a Committee of technicians and experts, nominated periodically,

Expenditure on the Programme :

Besides the funds spent so far on the workshop amounting to about Rs 36,000 (building. machinery, salaries etc.), it is estimated that about Rs 80,000 will be required during the year 1959-60 for the development envisaged. About 50 per cent of it is

raw mateiral, 30 per cent on machinery and construction and the balance for recurring expenditure like salaries, rwages and contingencies as shown in Table 4.

Table 4—Estimated Expenditure on Workshops (1959-60)

	Item	Amount
1	Raw materials including wood, cast and pig iron, fuel etc.	40,000
2	Installing machines	15,700
3	Construction of a store	10,000
4	Recurring expenditure (Salaries, wages and contingencis)	15,000
		80,700

It is expected that this will be provided by the Khadi Commission under grants and loans.

Impact of the Programme :

On account of the great need the workshop proposes to meet in the Region, the impact of the programme will be significant. For one thing, the Region will be able to obtain any equipment or spare parts at reasonable prices from local sources. Secondly, the ready repair and servicing facilities will eliminate chances of enforced idleness caused by any breakdown of equipment. Continued employment will result in increased production and increased income. Thirdly, the workshop offers scope to develop a variety of skills among the artisans and these skills have a permanent value. Fourthly, the local manufacture and supply of equipment will eliminate the financial drain caused by import of equipment.

CAHPTER NINE

IMPACT OF THE PROGRAMME

The Dhanaura Regional Plan is an experiment in developing villages as integral parts of a large structural unit on the principle of Gandiji's, Oceanic Circle. The chief objective is to create decentralised co-operative economy which provides equality of right and opportunity to the villagers to attain the highest integrated personal development. The problems of village life being those of limited opportunities and limited production, it is proposed to get over these limitations by adopting positive measure of expanding economy. Only expansion can create more wealth and wider opportunities and such expansion is possible through constructive thinking.

This Regional Plan is the outcome of such constructive thinking and group action of the people. In the process of preparing the plan, the people were seized of the present postion in regard to the consumption levels, scattered and idle resources and the scope of development through the use of these resources. In view of the size of the programme envisaged and the time and labour involved in mobilising all resources, the programme is sought to be implemented in two stages, the first stage covering housing and health schemes and khadi and a few o her village industries presented in these chapters. While the full impact of the Regional Plan can be seen when the two-stage programme is implemented, it is, however, expected that considerable development will be achived in the items covered in the first stage.

The impact will be noticeable both in the physical and the psychological aspects of the regional economy :

(i) Physical

On the physical side, progress will be appreciable in four aspccts of development :

(a) production ; (b) consumption ; (c) employment ; and (d) income.

(a) Production

Under the programme, there is expected to be an appreciable increase in the production of khadi and village industries like gur and khandsari, leather goods, oil, fibre and soap. Table 1 (a) shows that the increase will be marked in khadi and gur, khandsari and very considerable in respect of other products. It is estimated that production of the value of about Rs 37·4 lakhs will be effected during the year in the Region.

Table 1a—Production and Value

Item	Production (Qty)				Value (Rs)		
	Unit	1957-58	'58-'59	'59-'60	1957-'58	'58-'59	'59-'60
1	2	3	4	5	6	7	8
1 Khadi	Sq.Yds (Lakhs)	2.38	4.43	9.60	...	...	17,70,620
2 Gur, Khad-sari	Mds	1,796	...	26,400	32,000	...	4,19,200
3 Leather goods	(Shoe) (pairs)	...	...	55,000	...	...	2,20,000
	(Others)	...	...	...	...	...	20,000
4 Oil	Mds	...	...	5,525	...	...	4,56,050
Gilcake	Mds	...	...	13,915	...	...	1,77,060
5 Fibre goods		...	...	...	...	...	2,83,000
6 Soap	Mds	205	240	600	10,500	12,000	30,000
7 Paper	Lbs	...	...	7,200	...	...	9,000
8 Hardware		...	...	...	...	...	3,58,750
Total		...	...	...	...	...	37,43,680

Apart from this increase in the volume of production, there will be rise in productivity in every industry as shown in Table 1 (b). In Ambar yarn the productivity per spinner will rise from 2 hanks per day to 4 5 hanks ; while in gur and khandsari industry brought into the public sector the extraction percentage of juice will rise from 60 to 72 ; per crusher, the productivity will rise from 8-4 mds of gur to about 24 mds of sugar and 32 mds of gur. Calculated per worker, the increase will be from Rs 784 worth of sugar and Rs 254 worth of gur to Rs 1,160 worth of sugar and Rs 533 worth of gur.

Table 1b— Productivity

Item	Unit	1957-58	1959-60	% increase
1	2	3	4	5
1 Khadi:				
a)Ambar yarn	hanks per worker	2	4.5	125
2 Gur Khandsari				
a) Juiceextraction per crusher		6%	72%	20
b) Sugar	per worker)	784	1,160	48
ii. Gur	Rs)	254	533	110
c) Sugar	per crusher)	8.4	24.0	186
ii. Gur	Mds)	9.56	32.0	235
3 Leather :				
a) F'aying Rs	Hides	632	1,000	58
b) Tanning	Hides	250	4,000	1,500
c) Shoemaking	Shoes etc.	1,167	1,400	20

(b) Consumption

It was indicated by the sample survey that the Region imports large quantities of consumer goods like cloth, sugar, leather goods

and oil. The increased local production and availability of these goods during the year will make the Region fairly self-sufficient in in these requirements. This self-sufficiency is expected to range between 25 per cent, and 60 per cent during the year. In khadi, against 25 per cent, self-sufficiency in 1957-58 the rise will be upto 53 per cent while in oil it is expected to be 60 per cent. Against 0. pair of shoes of local production per capita, there will be 0·5 pair per capita produced locally. (Table 2). In respect of general amenities, about 5 per cent of the population will have new and better houses built during the year.

Table 2—Self-Sufficiency **(Annual)**

Item	Unit	1957-58	1959-60	%in 1957-58	%in 1959-60
I	II	III	IV	V	VI
1 Khandi	Sq.Yds	4.4	9.9	25	53
2 Gur, Khandsari	lb	1.44	21.12	3	44
3 Leaeher Shoes	pairs	0.1	0.5	10	50
4 Oil	lb	...	4.53	...	60
5 Soap	lb	0.16	0.50	9	28

(c) Employment

Though the actual volume of idle manpower in the Region has not been assessed by the survey, the existence of large idle human resources has been indicated. An effort will be made under the programme to mobilise a part of this idle man power and activise it in productive lines by creating opportunities of work It is expected that during the first stage of the Regional Pla (1959-60) employment will be provided to cover about 21 lakh mandays, of which khadi alone will account for about 10 lakh man-days and housing programme 5·45 lakh mandays as set out in Table 3.

Table 3—Employment (Mandays)

Item	1957-58	1959-60 (Mandays)
1 Khadi	4,443 families	9,34,900
2 Gur, Khandsari	4,000 mandays	2,40,000
3 Leather	...	73,500*
4 Oil pressing	...	1,04,400+
5 Fiber work	...	1,76,400
6 Soap	...	17,000
7 Housing	...	5,45,000
Total		20,91,200

*245 families ronghly at 300 days each

+199 families with two persons each ; 300 days for 149old ghanis and 150 days for improved ghanis

Apart from the volume of employment provided, the qualitative progress of employment will also be significant. The Khadi industry and fibre work in particular and other industries in general will absorb hundreds of women of the countryside in productive activity which will enable them to supplement family income Besides, several educated youngmen will be provided with employment in the Region itself so that the exous from the countryside may be prevented. In Khadi industry alone, it is estimated that about 200 educated persons will find employment in training, sales, supervision and administration and earn Rs 2 to Rs 5 per day depending on their experience and qualifications ; while about one hundred technicians will be engaged in all the village industries in carpentry, smithy, machine running and other technical occupations.

(d) Income

One significant aspect of the impact is the increase in the per capita earnings in all the activities under the programme of the year. Table 4 presents industry-wise details of the increase in the earnings of the artisans which is generally between 25 per cent and 100 per cent. In Khadi industry while the dyer earns 20 per cent more than in

1957-58, the carder earns about 98 per cent more per day. So also in the leather industry, the average daily earnings of the flayer will increase from Rs 1·26 per day (1957-58) to Rs 2·00 (1959-60) and those of the tanner from Re 0·54 to Rs 1·5 per day. In gur and khandsari industry the increase will be feom Rs 1·1 per day to Rs 1·5 during the crushing season ; while in fibre work the worker will earn Re 0·75 per day as against Re 0·5 per day in 1957-58.

Table 4—Income (Rs)

Item	Annual		Per cap per day	% increase
	1957-58	1959-60	1957-58	1959-60
1	2	3	4	5 6
1 Khadi				
(a) Total	—	10,69,730	—	1.76
(b) Carding	—	—	1.05	2.06
(c) Weaving	—	—	1.33	3.01
2 Gur-Khandsari	.4,463	37,250	1.1	1.5
3 Leather				
(a) Total	—	1,18,500		
(b) Flaying	—	—	1.36	2.00
(c) Tanning	—	—	0.54	1.50
(d) Shoe makiug	—	—	0.88	1.50
4 Oil pressing				
(a) Oil type ghanis	—	4,08,380	0.34*	1.08*
(b) Improved ghanis		25,085	—	3.34*
5 Fibre work	—	1,47,050	0.50	0.75
6 Soap making	—	12,080	—	0.70
7 Housing	—	14,24,500	—	1.25 to 4.50
Total		32,42,575		—

*Per family

(ii) Psychological

While the short term objective of village planning is the raising of production and employment opportunities, the long term objective is to develop the villages as integral parts of a larger structural unit with decentralised cooperative economy offering scope for the attainment of the highest integrated personal development. while the physical impact fulfils the short term objective, the psychological impact of the programme is vital to the fulfilment of the long-term objective.

The special merit of village planning lies in developing initiative and the spirit of self-development in the village community. The preparation of the Plan by the people themselves points the existence of this initiative among them. It is expected that the implementation of the plan intensifies this initiative and offers wider opportunities for self-development. Secondly, the provision of better housing to 5 per cent of the population and the provision of medical facilities to the Region during the year will improve appreciably public health. Better amenities will improve physical efficiency while introduction of technological improvement like Amber Charkhas, power crushers, improved fibre spinners etc. will add technical efficiency to the work of the artisans in all the industries taken under the programme. The skills acquired in various industries, by training and manipulation of improved equipment will be a permanent asset to the Region. Thirdly, the co-ordination of home, village, area and regional units of production in various industries will ensure the introduction of a decentralised co-operative economy, where every unit, however small, develops alongside of larger units without being crushed by them. Fourthly, the bringing in of the power cane crushers into the public sector will pave the way for other village industries to build up strength by organising themselves under the public sector for community benefit. Finally, the rational use of manpower in

various activities even on a rough basis, as well as the retention of the intelligentia in the village will enable the community to have the benefit of the best brains and leaders of the community, as well as the benefit of common economies, found in a rational time table of work. In short, the programme will help achieve expansion with a new social equilibrium, where the present conflicts between Seience and values of life are eliminated, and harmony in life with emphasis on the balanced development of man will be possible.

The programme for 1959-60 covers a few industries and also forms the first instalment of a long term programme like the 10-year housing programme. It is expected that when the second stage of the plan covering agriculture, education and other activities is taken up and implemented, the full impact of the entire programme will be felt, not only by the Region but by neighbouring areas as well.

प्राक्कथन

श्री झवेरभाई पटेल सर्वोदय अर्थशास्त्र के एक अनुभवी विचारक हैं। सगनवाडी वर्धा में उन्होंने ग्रामोद्योगों का कुछ संशोधन कार्य भी किया था। ग्राम विभाग में किस तरह सर्वोदय की सर्वांगीण योजना बना सकते हैं, उसका एक ढांचा उन्होंने इस पुस्तक में पेश किया है। ग्रामीण-जीवन के कई पहलू हैं, उनमें आर्थिक पहलू अपना एक विशेष महत्त्व रखता है। उस बारे में जरुरी आंकड़ों के साथ झवेरभाई ने ऐसी तजवीज पेश की है जिसका अध्ययन और परीक्षण सर्वोदय कार्यकर्त्ताओं को ही नहीं बल्कि हिन्दुस्थान का भला चाहने वाले सब लोगों को करना चाहिए।

सर्वोदय के विषय में कइयों के मन में यह भ्रम रह गया है कि सर्वोदय शायद बढ़ते हुए विज्ञान को नहीं चाहता। इससे अधिक गलत धारणा कोई नहीं हो सकती। इस भ्रांत धारणा का निराकरण गए सात—आठ साल से मैं लगातार कर रहा हूँ। वास्तव में अहिंसा के आधार पर समाज-रचना ही विज्ञान युग के लिए उपयुक्त हो सकती है।

अहिंसा + विज्ञान = सर्वोदय

और हिंसा + विज्ञान = सर्वनाश

इन दो समीकरणों का हमें कभी विस्मरण नहीं होना चाहिए।

झवेरभाई की योजना में कुछ ऐसे अंश हो सकते हैं जो चर्चास्पद माने जांय। झवेरभाई का भी यह आग्रह नहीं है कि उसका पूरा स्वीकार या अस्वीकार हो। हिन्दुस्थान के भिन्न भिन्न प्रान्तों में भिन्न भिन्न परिस्थितियाँ हैं। तदनुसार उसमें हेरफेर हो सकते हैं। यह एक मोटे तौरपर पेश किया हुआ सुझाव है। मेरी सिफारिश है कि ग्रामीणों की सेवा में दिलचस्पी रखने वाले कार्यकर्ता इसका बारीकी से अध्ययन करें।

साबरमती आश्रम
२१-१२-५८

Other Books on Intensive Area Scheme

1. Organisational Research for Village Industries
   —Jhaverbhai Patel Re 0.25
2. A Village Plan (Raiyan Plan)
   —Jhaverbhai Patel Re 1.00
3. Village Planning (Five Village Plans)
   —Jhaverbhai Patel Re 1.00
4. Organisational Pattern for Village Industries
   —Jhaverbhai Patel & Vithal Patwardhan Re 1.00
5. Birapur Village Plan
   —Jhaverbhai Patel Re 1.00
6. Village Plans at Work
   —Viswanathan Tekumalla Re 1.00
7. Report of the Evaluation Committee Re 1.00

Copies can be had of

The Khadi & Village Industries Commission
P. B. 482, Bombay 1

Printed by Narain Das at Indian Art Press, Sadar Bazar, Delhi

INTENSIVE AREAS

IN MORADABAD DISTRICT

NAINITAL

THAKURDWARA

KASHIPUR

TAJPOR

TO CHANDPUR

BIJNOR

KANTH

DILARI

KAMALPUR

DHANORA

DINGRA

KARANDI

KHALOUAR

AMROHA

TANDA

MEERUT

TIGRI

GAJRAULA

KANKATHER

MORADABAD

TO BAREILLY

MACHARIA

KUNDARKHI

HASANPUR

KUNDARKI

BILARI

SINGPUR

SAMBHAL

RAMPUR

GANGASRI

BUDAUN

BAREILLY

DAHJo:

TAHSIL

RIVER

RAILWAY LINE

PACCA ROAD

KACCHA ROAD

COMPACT AREA

OTHER AREAS

SCALE 1" - 4 MILES

NATURAL WATER COURSES
in DHANAURA REGION

DISTRICT MORADABAD

NAINITAL

THAKURDWARA

CHANDPUR

KASHIPUR

741

730

724

727

718

741

BIJNOR

KANTH

DILARI

NOGAWAN

715

710

MATLABPUR

KAMALPUR

694

691

KARAUNDI

DHANAURA

AMROHA

AGHAWANPUR

HAKIMPUR

TANDA

MEERUT

GAJRAULA

KARANPUR

MORADABAD

KANAATHOR

MACHARIYA

KUNDARKHI

HASANPUR

SINGPUR

SIRSI

BILARI

SAMBHAL

GANGASRI

BULANDSHAHR

RAMPUR

CANDAUSI

To BAREILLY

BAHJOI

SOT R.

BUDAUN

To DELHI

To BAREILLY

PACCA ROAD

RAILWAY LINE

WATER DRAINAGE

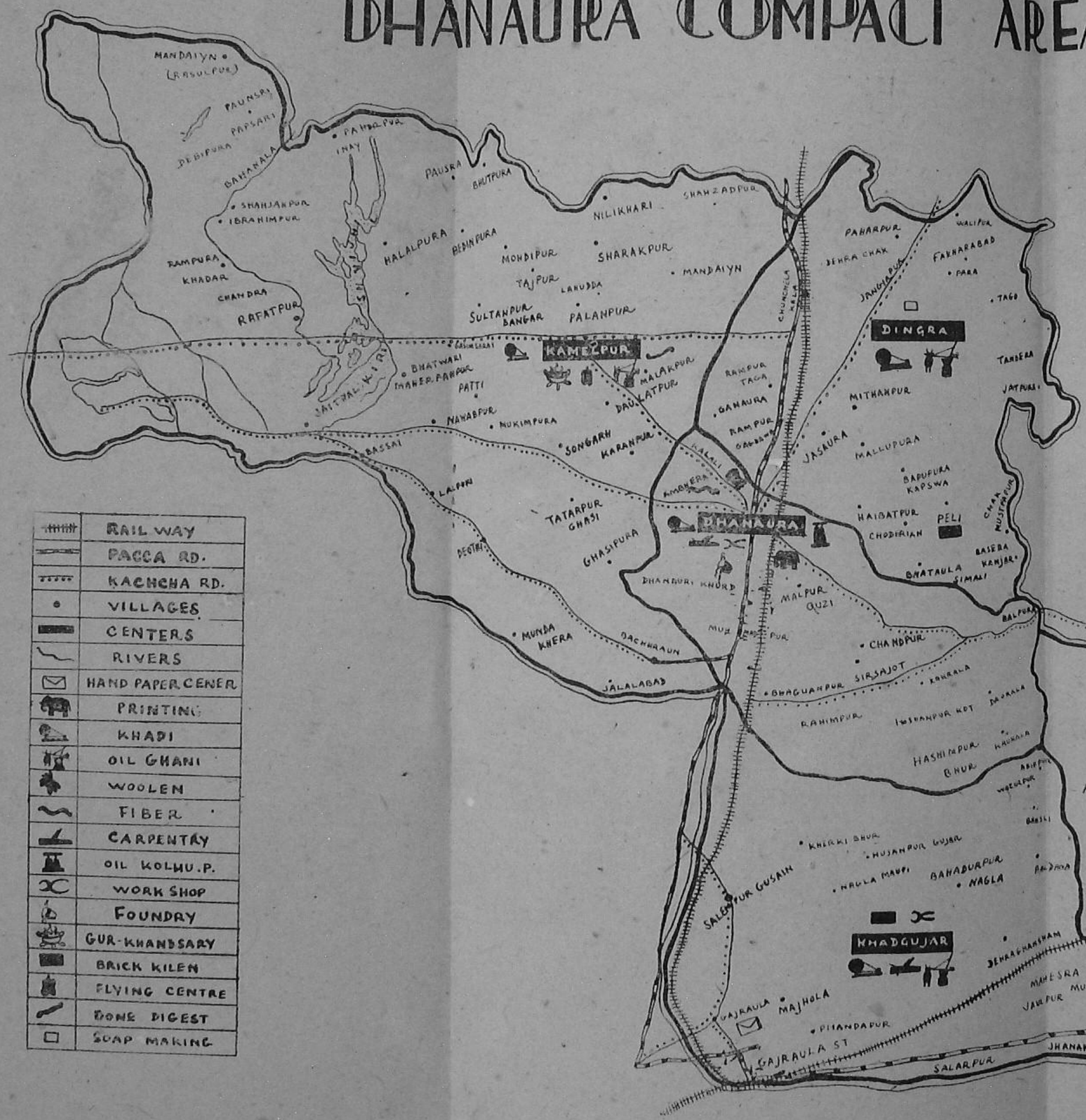
Figs: Ht(Ft) Above M.S.L.

0 1 2 3

SCALE 1" = 4 MILES

(Vide P. 33)

DHANAURA COMPACT AREA



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	KACHCHA RD.
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	RIVERS
	HAND PAPER CENER
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