HARYANA DEVELOPMENT COMMITTEE

FINAL REPORT

CHANDIGARH:
Printed by the Controller of Printing and Stationery, Punjab,
1966.

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CHAPTER I

INTRODUCTORY

The Punjab Government appointed the Haryana Development Committee on 20th March, 1965, constituted as below :—

(1)	Pt. Shri Ram Sharma	... Chairman
(2)	Shri Gajraj Singh, M.P.	... Member
(3)	Shri Sher Singh, M.L.C.	... Do
(4)	Shri Chand Ram, M.L.A.	... Do
(5)	Shri Hardwari Lal, M.L.A.	... Do
(6)	Shri Nihal Singh, M.L.A.	... Do
(7)	Shrimati Om Prabha Jain, M.L.A.	... Do
(8)	Shri Suraj Mal	... Do
(9)	Shri G. L. Bansal, Secretary-General, Federation of Indian Chamber of Commerce and Industry, New Delhi	... Do
(10)	Shri Saroop Krishen, I.C.S., Financial Commissioner, Planning, Punjab	... Do
(11)	Shri R. S. Randhawa, I.A.S., Commissioner for Agricultural Production and Rural Development, Punjab	... Do
(12)	Shri A.N. Kashyap, I.A.S., Commissioner, Ambala Division	... Do
(13)	Shri Hoshiar Singh, Deputy Commissioner, Sangrur	... Do
(14)	Shri Gurdit Singh, Economic and Statistical Adviser, Punjab	... Do
(15)	Shri L. C. Gupta, I.A.S.	... Member-Secretary

1.2. Shri Chand Ram and Shrimati Om Prabha Jain were taken in the Cabinet in June, 1965, and, thereafter, they resigned from the Committee.

1.3. The area to be covered by the Committee consists of the districts of Hissar, Rohtak, Gurgaon, Karnal, Mahendragarh, Jind and Narwana, tehsils of district Sangrur, and Jagadhri, Naraingarh and Ambala tehsils of district Ambala.

1.4. The terms of reference of the Committee are as follows :—

(i) to make a study of socio-economic conditions with a view to assessing the economic deficiencies as well as the perspective potentialities of the region;

(ii) to make an assessment of the progress likely to be achieved by the end of the Third Plan; and

(iii) to recommend development measures for an accelerated and integrated socio-economic growth of the region, with particular reference to the Fourth Five-Year Plan.

1.5. The Committee held its first meeting on the 30th of March, 1965, and decided to issue a questionnaire to all representative bodies and organisations as well as a large number of individuals belonging to the Haryana Region. Almost all the Heads of Departments were separately addressed to secure information on various points concerning the Haryana Region. The Committee discussed the matter with all the Administrative Secretaries and the Heads of Departments in the first and second week of June, 1965. The non-official members of the Committee also met Shri Asoka Mehta, Deputy Chairman, Planning Commission, on the 18th June, 1965. Since the Fourth Plan was in the process of finalisation, the Committee decided to make interim recommendations to the Government regarding the urgent needs of the Haryana Region. An 'Interim Report' was, accordingly, submitted to the Government on the 4th August, 1965.

1.6. After submitting the Interim Report, the Committee visited all the district headquarters and some of the tehsil headquarters, and secured the views of prominent non-officials as well as officials serving in these districts. The Committee also examined a number of experts at the State Headquarters. While touring the various districts, the Committee had an opportunity to visit a number of industrial units and other educational and technical institutions. The Committee's findings, thus, take into account the impressions gathered by it during these visits as well as the views expressed by officials and non-officials connected with the development of the Haryana Region.

Background—Historical

1.7. Haryana has a glorious past. In the ancient times the knowledge of the Vedas was imbibed by the Rishis on the banks of the Saraswati. Since Mahabharat, the fate of the country has been decided on the battle fields of Kurukshetra, Taraori and Panipat. People of this Region have always played a noble part.

1.8. In the First War of Independence of 1857, Haryana as a whole revolted against the British Empire. Rao Krishan Gopal of Rewari, serving as Kotwal at Meerut, was very much instrumental in giving a dynamic lead for that great patriotic upheaval. His cousin, Rao Tula Ram, took part in the resistance against the British at Nasibpur, near Narnaul. Raja Nahar Singh of Ballabhgarh and Nawabs of Jhajjar and Farrukhnagar were hanged in Delhi and their States confiscated. A large number of Haryana people who rose in revolt met the same fate. L. Hukam Chand Jain of Hansi was hanged in front of his house and buried there. In a spirit of revenge, Haryana was disintegrated into parts and attached to the neighbouring States, who stood by the British Empire. Till then this area was an integral part of Agra and Delhi Provinces, but it was then tagged with the Punjab beyond Sutlej. All this was done to punish the people with perpetual backwardness. The policy pursued by the British regime for a long time was to the same effect. This also served the purpose of recruitment to the Army.

1.9. In the very beginning of the political awakening, three prominent public men of this region, Pandit Din Dayal Sharma and Babu Balmukand Gupta of Jhajjar and L. Murli Dhar of Ambala, attended as delegates the 2nd Session of the Indian National Congress held at Calcutta in 1886. L. Lajpat Rai, while practising at Hissar, joined the Congress and took part in its 4th Session held at Allahabad in 1888. His famous letters in answer to the communal boggey raised by Sir Sayyad Ahmed in his articles were written and published at that time.

1.10. The Rowlatt agitation and the Martial Law in Punjab had its repercussions of persecution and imprisonment in this Region. The people of Haryana were in the forefront during the Civil Disobedience Movements of 1921, 1930—32, and 1941-42. The number of arrests from Rohtak District alone topped the list. The Haryana youth in the British Army joined

the I.N.A. in a very large number and fought bravely under the inspiring lead of Netaji Subhash Chandra Bose.

1.11. When China invaded the country in 1962, Brig. Hoshiar Singh and others of Haryana sacrificed their lives for defending the honour and freedom of the country. In the Ladakh Sector, Chushul aerodrome was dauntlessly defended against the Chinese under the inspiring leadership of Major-General Budh Singh. Again, when Pakistan attacked India in September, 1965, the Jawans of Haryana by their sheer valour and bravery defeated the Pakistanis in the Burki, Dograi, Khemkaran and Sialkot Sectors. Brig. Khem Karan Singh had to his credit the capture and annihilation of the Pakistani forces in Kasur Sector. Defence and service of the motherland had always been the first consideration for the brave people of Haryana.

1.12. It is, thus, abundantly clear that the Haryana people have always fully identified themselves with the struggle for Independence and have always been at the forefront for preserving the freedom of the country. No wonder, they suffered at the hands of the foreign rulers for their patriotism but it is difficult to understand why they should be ignored and kept in backwardness under their own National Government. They certainly deserve much better treatment.

Background—Geographical

1.13. Geographically, the Haryana Region has been definitely at a disadvantageous position *vis-a-vis* the Central Punjab Region. The region is away from the three perennial rivers of the Punjab, that is, the Ravi, the Beas and the Sutlej. The Ghaggar river, which is not perennial, touches only northern parts of the area and the river Yamuna forms only the boundary with the U.P. on the eastern side. The agro-climatic conditions in a large part of the area are unfavourable; the rainfall is comparatively low and erratic, the soil is sandy and light in texture, especially in the arid area, and above all, there is paucity of sub-soil water and in a large number of tracts, it is brackish. The south-western part of the region has a higher elevation making flow irrigation difficult except by executing costlier lift schemes. Also, by and large, there are no mineral resources in the area, except in district Mahendragarh.

Extent of backwardness—Overall position

1.14. Before dealing with the various developmental fields individually, it would be useful to briefly state the overall position along with the statistical data available in this respect.

1.15. While presenting the statistical data, there is some difficulty about separating figures for district Ambala and district Sangrur, portions of which fall both in the Haryana and the Non-Haryana Regions. This is because most of the data is available only districtwise. The information for these two districts has, accordingly, been separated for Haryana and Non-Haryana Regions on a *pro rata* basis in accordance with their relative population, area, etc.

1.16. With a view to presenting the picture in a logical manner, the State has mostly been divided into the following three regions:—

(i) Hill Region;
(ii) Non-Haryana Region; and
(iii) Haryana Region.

The Hill Region includes Simla, Kangra, Lahaul and Spiti, and Hoshiarpur. Hoshiarpur has been included in the Hill Region because 13 out of 16 Blocks fall within the 'Hill Areas' for developmental purposes. All other areas not included in the Haryana Region are shown under the Non-Haryana Region. The Ambala, Jagadhri and Naraingarh tehsils of district Ambala are shown under the Haryana Region, even though certain portions come within the definition of 'Hill Areas' for developmental purposes. Similarly, the rest of the Ambala District is shown under the Non-Haryana Region.

1.17. The overall position of area and population in the three regions mentioned above is as follows:—

		Population (in lacs)	Percentage
Hill	...	24·29	11·96
Non-Haryana	...	103·51	50·98
Haryana	..	75·27	37·06
Total Punjab	..	203·07	100·00

		Area (in sq. miles)	*Percentage*
Hill	..	12,437	26·29
Non-Haryana	...	18,032	38·12
Haryana	..	16,835	35·59
Total Punjab	..	47,304	100·00

1.18. The following table indicates the comparative position of the Haryana Region *vis-a-vis* the Non-Haryana Region and the Hill Region in various socio-economic fields:—

	Hill	*Non-Haryana*	*Haryana*
1. Rural population as percentage of total population in the region ..	89·9	75·3	82·8
2. Urban Population ..	10·1	24·7	17·2
3. Working population as percentage of total population in the region—			
(a) Agriculture ..	29·5	17·5	26·8
(b) Secondary and Tertiary Sector ..	11·5	14·0	10·9
4. Gross area irrigated as percentage of total cropped area ..	17	63	30
5. Percentage of electrified towns/villages to total number of towns/villages in the region	19	29	18
6. *Per capita* consumption of electricity in the region ...	9	46	37
7. Number of registered factories per lakh of population in the region ..	6·0	36·5	14·9
8. Literates as percentage of population in the region—			
(a) Total ...	27·1	26·7	19·8
(b) Female only ...	14·8	17·6	9·1

(i) **Rural Urban Composition (Annexure 1).**—It will be readily seen that there is a greater preponderance of rural population in the Haryana Region than that in the Non-Haryana Region, indicating a lesser rate of economic growth. The rural

population in 10 out of 27 tehsils in the Haryana Region is over 90 per cent. Conversely, the urban population in the Non-Haryana Region is much higher. In absolute terms, it is 25.56 lakhs in the Non-Haryana Region against 12.89 lakhs in the Haryana Region.

(ii) **Working Population in Primary, Secondary and Tertiary Sectors (Annexure 2).**—The figures cited above show that a much larger working population is engaged in the Agricultural Sector in the Haryana Region than that in the Non-Haryana Region. On the other hand, the Non-Haryana Region has a definite lead over the Haryana Region in the Secondary and Tertiary Sectors.

(iii) **Extent of Irrigation (Annexure 3).**—As it is, the total gross area irrigated as a percentage of the total cropped area in Non-Haryana Region is more than double of that in the Haryana Region. The actual position in the Haryana Region is still worse as the intensity of irrigation in the Haryana Region is much less. In large areas in the Haryana Region, the water allowance is still from 1.9 to 2.4 cs. per thousand acres of C.C.A., whereas in the Non-Haryana Region the water allowance in the Upper Bari Doab tract is as much as 3.5 cs. per thousand acres of C.C.A.

(iv) **Percentage of Electrified Villages/Towns (Annexure 4).**—The percentage of villages/towns electrified is 18 in Haryana as against 29 in Non-Haryana Region. Certain areas in the Haryana Region are very backward while certain other areas in the Non-Haryana Region have gone ahead very far. This will be clear from the fact that 69 per cent of the villages are electrified in district Amritsar, 41 per cent in Ludhiana, 42 per cent in Gurdaspur and 33 per cent in Jullundur. In the Haryana Area, the percentage of villages electrified is 13 in Mahendragarh, 16 in Gurgaon, 18 in Hissar and 19 in Karnal.

(v) *Per Capita* **Consumption of Electricity in the Region (Annexure 5).**—In the overall picture, the *per capita* consumption of power in the Haryana Region is 37 as against 46 in Non-Haryana Region. It is, however, to be borne in mind that most of the industrialisation is in the belt around Delhi, particularly Faridabad, and this gets reflected in the *per capita* consumption. If this is taken out, the *per capita* consumption in the Haryana Area will be much less.

(vi) **Number of Registered Factories per Lakh of Population in the Region (Annexure 6).**—As it is, the figure is only 14.9 in the Haryana and 36.5 in the Non-Haryana Region. If it is borne in mind that 14.9 includes registered factories in the satellite towns around Delhi, it will be appreciated that the Haryana Region is lagging behind very considerably in the matter of industrialisation.

(vii) **Literacy Percentage of Population in the Regions (Annexure 7).**—The Non-Haryana has a distinct lead as the percentage of literate persons in it is 26.7 as against only 19.8 in the Haryana Region. The corresponding figure for female literacy in the Haryana Region is 9.1 as against 17.6 in the Non-Haryana Region.

1.19. From the indicators given above, it will be clearly seen that the Haryana Region is lagging far behind the Non-Haryana Region in a large number of developmental spheres. There will be occasion to refer to the position in detail regarding each developmental sphere in the subsequent chapters. At the same time, it would be appropriate to have some idea of the overall share received by the Haryana Region in the Third Five-Year Plan.

Third Five-Year Plan

1.20. In the Plan, there are a number of schemes for which benefits cannot be separated from district to district, as these are spread all over the State. An exercise is, accordingly, gone through in each plan period to find out the amount which benefits different areas and different regions. This exercise was done at the beginning of the Third Five-Year Plan period and out of the plan of Rs. 231 crores, Rs. 120.21 crores was regarded as 'breakable portion' benefiting specified areas and localities. Its break-up in the three regions is as follows:—

	Regionwise allocation for 1961—66 (Rs. in lakhs)	*Percentage to total Punjab*
Hill Region ..	2,145·60	17·8
Non-Haryana Region ..	5,512·72	45·9
Haryana Region ..	4,363·33	36·3
Total Punjab ..	12,021·65	100·0

1.21. The actual allocation from year to year is not necessarily made according to the original Plan and may differ widely from what is envisaged at the beginning of the Plan. In the absence of expenditure figures, it is not possible to say what exactly has been spent in the Haryana Region from this breakable portion. The allocations during the years 1963-64 and 1964-65 for which figures are available, have been looked into and the overall position is as follows:—

Regionwise allocation

	1963-64		1964-65	
	Allocation	Percentage	Allocation	Percentage
Hill Region ..	283·82	13·3	361·49	15·0
Non-Haryana Region ..	1,104·91	51·6	1,110·40	46·1
Haryana Region ..	750·23	35·1	936·73	38·9
Punjab ..	2,138·96	100·0	2,408·62	100·0

The allocation, thus, made for the years 1963-64 and 1964-65, for the Haryana Region is 35.1 per cent and 38.9 per cent, respectively. Considering that the population of the Haryana Region is 37.06 per cent, it is quite clear that no weightage has been given to the Haryana Region even at the time of allocations. In fact, the general feeling is that even the amounts allotted are not fully spent in the Haryana Region and if this is correct, the amount provided for the Haryana Region in actual practice is likely to be less than even its due share on the population basis. It may be added that the implementation of the Regional Formula has not, in any way, improved the position of the Haryana Region.

General observations made by the Committee

1.22. Before examining the position in the specific sectors, the Committee would like to make a few general observations:—

(i) During discussions with the Administrative Secretaries and the Heads of Departments, it transpired that no conscious and deliberate

policy exists in the Departments to ensure that the fruits of development are spread evenly in the various regions, except that for the 'Hill Areas' there is a separate plan. In a number of cases, the Departments make lump sum provisions for the plan period for the State as a whole and the actual details are decided from year to year. The Committee considers this to be an unsatisfactory situation and recommends that within the State Plan, comprehensive plans should be drawn out for the various regions as a matter of standing policy.

(ii) During discussions with the Administrative Secretaries and Heads of Departments, it transpired that there is a certain amount of confusion about the objectives of planned development. While one of the objectives is to have the maximum returns for any investment, the other objective is to ensure balanced regional development. The cost-benefit ratio in some cases is comparatively higher in the Haryana Region than that in the Non-Haryana Region (as for instance, the cost of irrigation per acre from minor irrigation works is higher in the Haryana Region), but this should be no reason for neglecting the Haryana Region. In this particular case, the higher cost is likely to be offset by higher yields per acre because of more productive soil, and the hardihood of the farmer. Moreover, the cost-benefit ratio in the 'Hill Areas' or say the adjoining State of Rajasthan would be still higher but a lot of attention is being given to them separately. In view of the fact that the 'social costs', of neglecting a backward area can in effect prove to be much higher than the additional expenditure which may have to be incurred in certain cases because of a higher cost-benefit ratio, the Committee recommends that the proper place of the two objectives mentioned above should be spelt out in some detail and there should be no reason for the Haryana Region being neglected on this account.

(iii) Another point which emerged during discussion was that since the process of development in the

Haryana Region started at a later stage than in the Non-Haryana Region, the Haryana Region is at a disadvantageous position. This is so because the institutions or 'works' put up at an earlier stage have been better organised than those started later. As for instance, it may be stated that the provision made for medicines at the Rohtak Hospital in 1964-65 was only Rs. 0.84 lakh for 330 beds as against Rs. 8.14 lakhs for 662 beds at Patiala. Similarly, a large number of educational institutions were built in the Haryana at a later stage. The result is that such institutions in the Haryana Region are not as well-staffed and equipped as in the Non-Haryana Region. The Committee considers that the deficiency in this respect should be fully gone into and the resources for removal of the same provided on a priority basis.

CHAPTER II

AGRICULTURAL PRODUCTION

Existing Position

Agricultural production still remains to be the main sector of the State economy, contributing 41.8 per cent of the State income (in 1961-62)—(Annexure 8). As stated earlier, the population of the Non-Haryana Region is 50.98 per cent of the State population, while the population of the Haryana Region is only 37.06 per cent. It is, however, significant that the number of workers engaged in cultivation in Haryana is 20.11 lakhs as against 18.14 lakhs in the Non-Haryana Region (Annexure 2). This only shows that there is far greater dependence on agriculture in the Haryana Region than that in the central parts of the Punjab.

Land Utilisation Pattern

2.2. The total area of the State is 303 lakh acres, out of which the net area sown is 188 lakh acres. The total cropped area including the double-cropped area is 241 lakh acres. The classification of the area during the year 1963-64 in the three regions of the Punjab in various categories is given below:—(Districtwise details in Annexure 9).

(In thousand acres)

Category	*Hill*	*Non-Haryana*	*Haryana*	*Total*
1. Total area according to village papers ..	7,969	11,549	10,794	30,310
2. Area under forests ..	644	101	136	901
3. Land not available for cultivation ..	5,580	1,332	1,187	8,149
4. Other uncultivated land except current fallows	385	487	398	1,270
5. Fallow lands .	125	574	488	1,187
6. Net area sown ..	1,233	9,005	8,565	18,803
7. Area sown more than once .	599	2,315	2,368	5,282
8. Total cropped area (6 plus 7) ..	1,832	11,320	10,933	24,085

It will be seen that the net area sown in Haryana Region is 85.65 lakh acres against 90.05 lakh acres in the Non-Haryana Region. The total cropped area is 109.33 lakh acres in the Haryana Region as against 113.20 lakh acres in the Non-Haryana Region. The net area sown and the total cropped area in the Non-Haryana Region is, thus, slightly higher than that in the Haryana Region.

2.3. The percentage of net area cultivated to the total cultivable area in the Non-Haryana Region comes to 89.45 against 00.62 in the Haryana Region. The intensity of cultivation in the Haryana Region is, thus, slightly higher than that in the Non-Haryana Region. The double-cropped area in the Haryana Region is 27.65 per cent while in the Non-Haryana Region, it is 25.70 per cent of net area sown. The progressive rise in area sown more than once from 1950-51 to 1963-64 is given in the table below (Annexure 10):—

Year	*Non-Haryana*	*Haryana*
1950-51 ..	1,527	1,178
1955-56 ..	2,252	2,944
1960-61 ..	2,256	2,908
1961-62 ..	2,266	2,632
1962-63 ..	2,651	2,797
1963-64	2,315	2,368

It will be seen that whereas double-cropped area in the Haryana Region has doubled during the years 1950-51 to 1963-64, it has increased by only 52 per cent in the Non-Haryana Region. This is due to the fact that irrigation facilities were extended to new areas in the Haryana Region only in the recent years. The peak year for double cropping in the Haryana Region was reached in the year 1955-56, when it registered a rise of 150 per cent over 1950-51. Since then there have been variations in the double-cropped area because of weather conditions and floods in this region.

2.4. The following table gives an idea of land utilisation pattern in various districts of Haryana in 1963-64:—

(In thousand acres)

Category	Hissar	Rohtak	Gurgaon	Karnal	Mahendragarh	Ambala	Sangrur
1. Total area according to village papers	3,444	1,493	1,504	1,975	852	855	671
2. Area under forests		4	30	12	5	104	1
3. Land not available for cultivation	334	141	232	226	78	129	47
4. Other uncultivated land except current fallows ..	5	102	27	161	49	34	20
5. Fallow lands ..	243	83	52	37	21	39	13
6. Net area sown ..	2,862	1,163	1,163	1,539	699	549	590
7. Area sown more than once ..	642	473	207	442	287	154	163
8. Total cropped area (6+7) ..	3,504	1,636	1,370	1,981	986	703	753

It will be seen that there is very little land under forests except in district Ambala. A sizable chunk of land is not available in all the districts of the Haryana Region, except districts Mahendragarh and Sangrur. The area under cultivable waste and fallow lands is sizable in districts Rohtak, Hissar and Karnal.

2.5. The picture regarding net area sown as percentage of the total cultivable area as well as the percentage of the double-cropped area in the various districts is as follows:—

	Net area sown as percentage of cultivable area	*Percentage of double-cropped area*
Hissar ..	92·03	22·43
Rohtak ..	86·27	40·67
Gurgaon ..	93·64	17·80
Karnal ..	88·60	28·72
Mahendragarh ..	90·89	41·07
Ambala ..	88·26	28·05
Sangrur ..	94·70	27·63

The net area sown as percentage to the total cultivable area is the highest in Sangrur, being 94.70, followed by Gurgaon (93.64) and Hissar (92.03). This means that the culturable waste in these districts ranges from 7.97 to 5.30 per cent of the total cultivable area. The culturable waste as a percentage of the total cultivable area is the highest in Rohtak (13.73), followed by Ambala and Karnal districts.

2.6. The percentage of double-cropped area is very high in Rohtak, being 40.67, followed by Karnal and Sangrur, being 28.72 and 27.63, respectively. Because of assured rainfall, it is 28.05 in Ambala, even though the district is without any canal irrigation facilities. The holdings in Hissar are large and since irrigation facilities are not adequate, the percentage of double cropping is only 22.43. The percentage of double-cropped area is the lowest in district Gurgaon, but strangely enough, it is the highest in district Mahendragarh which has the least irrigation facilities and has got very scanty rainfall. It seems that in a bid to eke out whatever they can from their dry lands, the people in this district sprinkle seeds in a large area for the second crop in a year, hoping for the best that they can get from it.

Pattern of operational holdings

2.7. The table at Annexure 11 gives the number of households, districtwise, engaged in cultivation, according to size of holdings. This is on the basis of 20 per cent sample survey conducted as a part of the 1961 All-India Census. The percentage of holdings in the various categories, separated in the three regions, is given below:—

Size of holdings	*No. of holdings as percentage of total in the region.*		
	Hill	Non-Haryana	Ha yana
Less than 5 acres ..	62·6	15·5	16·9
5 to 9.9 acres ..	22·4	26·5	26·0
10 to 14·9 acres ..	8·1	21·1	21·5
15 to 29.9 acres ..	5·3	26·3	24·3
30 to 49·9 acres ..	0·9	7·5	7·7
50 acres and above ..	0·4	2·5	3·1
Unclassified ..	0·3	0·6	0.5

The percentage of holdings which are less than 5 acres are slightly higher in the Haryana Region than that in the Non-Haryana Region, this being 16.9 against 15.5 in the latter region. The holdings in the category of 5 to 9.9 acres and 10 to 14.9 acres are practically the same in the two regions, though in the category of 15 to 29.9 acres, the Non-Haryana Region has a lead of 2 per cent against the Haryana Region. Again, the holdings in the category of 30 to 49.9 acres are practically the same in the two regions. In respect of holdings of 50 acres and above, however, the Haryana Region has a slight lead over the Non-Haryana Region.

While the over-all position of the two regions is, thus, more or less the same, this is not so with regard to the size of holdings in the various districts within the Haryana Region itself. The maximum number of holdings in all the districts, except Hissar and Sangrur, fall in the size-group 5—9.9 acres. In Hissar and Sangrur districts, however, the maximum number of holdings are in the size-group 15 to 29.9 acres. The size of holdings in Gurgaon and Mahendragarh districts is smaller than that in the rest of the districts, as against the average of 42.9 per cent for the Haryana Region as a whole, more than 53 per cent of the holdings in these districts are smaller than 10 acres. In Gurgaon, 22.6 per cent and in Mahendragarh 26.9 per cent of the holdings are smaller than even 5 acres. In Hissar District, however, more than 50 per cent of the holdings are higher than 15 acres.

Cropping Pattern (Regional position)

2.8. With a view to visualising the present cropping pattern clearly, the statement of area and yields under major food and cash crops has been prepared and this is at Annexure 12. In order to minimise the effects of seasonal fluctuations, the average of 3 years, i.e., 1961-62 to 1963-64 has been taken. On the side of foodgrains, the crops taken are rice, wheat, maize, jowar, barley, bajra, gram, massar, moong and mash. On the cash crops side, the crops taken are cotton, sugarcane and oilseeds. The position that emerges from an analysis of these figures is as follows:—

(i) As against the total cropped area of 240.85 lakh acres, the area under foodgrains and cash crops mentioned above is 206.55 lakh acres. Out of this, 98.90 lakh acres is in the Haryana Region and 91.85 lakh acres in the Non-Haryana Region and

15.80 lakh acres in the Hill Region. The distribution of this area under foodgrains and cash crops is as follows:—

(In lakh acres)

Region		Foodgrains	Cash crops	Total
Hill	..	14.78 (93.5)	1.02 (6.5)	15.80
Non-Haryana	..	72.15 (78.6)	19.70 (21.4)	91.85
Haryana	..	86.82 (87.9)	12.08 (12.1)	98.90
Total	..	173.75 (84.1)	32.80 (15.9)	206.55

(ii) The above statement indicates that the area under foodgrains is 86.82 lakh acres in the Haryana as against 72.15 lakh acres in the Non-Haryana Region, whereas the area under cash crops is only 12.08 lakh acres in the Haryana as against 19.7 lakh acres in the Non-Haryana Region. In absolute terms, the area under foodgrains is higher by 20 per cent in the Haryana Region, whereas the area under cash crops in the Non-Haryana Region is higher by 63 per cent. The lesser area under cash crops is a major indication of the backwardness of the Haryana Region in respect of agricultural development.

(iii) If we examine the figures of foodgrains a little more closely, the picture that emerges is as follows:—

		Haryana	Non-Haryana	Area in Non-Haryana as percentage of Haryana
Wheat	..	16.46	34.62	210
Rice	..	3.95	5.95	136
Maize	..	2.54	7.35	289
Jowar, Bajra and Barley	..	27.60	4.41	16.0
Gram	..	34.80	19.21	55.2

It will be observed that the area under wheat in the Non-Haryana Region is more than double of that in the Haryana Region. The area under maize is about 3 times as much and the area under rice is 36 per cent higher. On the other hand, the area under jowar, bajra, gram, etc., is much higher in the Haryana Region, the area under gram being almost double than that in the Non-Haryana Region and the area under jowar, bajra and barley being more than six times of that in the Non-Haryana Region. This clearly indicates that although the Haryana Region has a larger area under food-grains than the Non-Haryana Region, it is mostly tied down to low-yielding crops like gram, jowar, bajra and barley which has its consequential effect on the income of the people. Taking the total food production under the various crops as a whole, the following would be the production per acre of the area sown:—

(Production in tons)

	Haryana	Non-Haryana	Production per acre in Non-Haryana as percentage of Haryana
Foodgrains ..	0.28	0.43	154

It will be seen that, even if the price differential of various crops is not taken into account, the yield in the Non-Haryana Region is about 54 per cent higher than that in the Haryana Region.

(iv) As regards cash crops, the position is as follows:—

(Area in lakh acres)

Crop	Haryana	Non-Haryana	Area in Non-Haryana as percentage of Haryana
1. Cotton ..	3.31	11.97	362
2. Sugarcane ..	3.09	2.62	85
3. Oilseeds ..	5.68	5.11	90
Total ..	12.08	19.70	537

The area under cotton is, thus, more than three and a half times higher in the Non-Haryana Region than that in the Haryana Region. Although the area under sugarcane and oilseeds is marginally higher in the Haryana Region, the fact remains that for the cash crops as a whole, the area in Non-Haryana Region is 63 per cent higher than that in the Haryana Region.

Changes in the cropping pattern in the Haryana Region in the last three Plan periods

2.9. We may, now, examine in detail the changes that have occurred in the cropping pattern within the Haryana Region since the beginning of the Planning Era. The position for three selected years during this period is given in the following statement. (*See Annexure* 13).

(Area sown in thousand acres)

	1950-51		1960-61		1963-64		Percent increase/ decrease in 1963-64 over 1950-51	
Food Crops								
1. Paddy ..	181		380		382		+111	
2. Wheat ..	902	1,159	1,544	2,182	1,682	2,345	+86	+102
3. Maize ..	76		258		281		+269	
4. Jowar, Bajra and Barley ..	3,265		3,017		2,605		—20	
5. Gram ..	2,163		3,808		3,436		+58	
6. Massar, Moong and Mash ..	145		156		112		—23	
Total	6,732		9,163		8,498		+26	
Cash Crops								
7. Cotton American ..	7.6	134.0	132.5	229.2	251.5	442.1	+3,209	+230
8. Cotton Desi ..	126.4		96.7		180.6		+43	
9. Sugarcane ..	137		317		280		+104	
10. Oilseeds .	275		393		562		+104	
Total ..	546.0		939.2		1,274.1		+133	

It will be seen that there is a welcome change in the cropping pattern in the Haryana Region and the area under cash crops has increased at a much faster pace than that under foodgrains. The area under sugar-cane and oil-seeds has more than doubled in the last 13 years and the area under cotton has increased over three times. In respect of cotton, people have taken to the cultivation of American cotton on a very widespread basis and the area under this category has increased by as much as 32 times. Even in respect of foodgrains, there has been a very substantial gain under superior cereals like paddy, wheat and maize. Simultaneously, the area under low-yielding crops like jowar, bajra and barley has gone down.

Districtwise changes in the cropping pattern

2.10. The area under superior cereals, like paddy and wheat, has increased substantially in all the districts of the region. The area under paddy in Karnal District is the highest in the State, the increase being 141 per cent over the area sown in 1950-51. The area under wheat has increased by more than 100 per cent in Hissar, Karnal and Mahendragarh districts. The increase in area under this crop is also significant in the rest of the districts as well. There has been a welcome decrease in the area under coarser cereals, like jower, bajra and barley, in practically all the districts in the Haryana Region.

2.11. In respect of cash crops, like cotton, sugarcane and oilseeds, the area sown has really increased at a very fast pace in all the districts. In respect of cotton, the increase has been more than 100 per cent in all the districts ; in Hissar this being as much as 367 per cent. In respect of area under sugarcane, the first and second positions in the entire State are occupied by Rohtak and Karnal districts respectively. The area under this crop in the three tehsils of district Ambala which are included in the Haryana Region, is also higher than that in any other district outside the Haryana Region. In respect of oilseeds, the most significant increase is in district Mahendragarh where it has gone up by as much as 886 per cent. The area under oilseeds in Hissar district is the highest in the State, registering an increase of 334 per cent over the area sown in 1950-51. The area under oilseeds in Gurgaon District is also higher than that in any district of the Non-Haryana Region except Ludhiana.

Yields per acre

2.12. The tables at annexures 14 and 12 give an idea of yield per acre in 1950-51 and the annual average yield for the years 1961—64. The region-wise progress in yield per acre is given below :—

(In lbs.)

Crop	*Non-Haryana*			*Haryana*		
	1950-51	Average 1961-64	Percentage increase/ decrease	1950-51	Average 1961-64	Percentage increase decrease/
1. Rice in terms of Paddy	1,197	1,456	22	773	1,586	105
2. Wheat ..	815	1,103	35	720	1,116	55
3. Maize ..	526	1,054	100	354	826	133
4. Jowar, Bajra and Barley	410	556	36	321	312	—3
5. Gram ..	531	630	19	400	537	34
6. Cotton ..	182	262	44	167	253	51
7. Sugarcane ..	2,734	2,818	3	2,927	3,337	14
8. Oilseeds ..	427	590	38	295	534	81

As far as the State as a whole is concerned, the increase in yields in recent years over the year 1950-51 can be more correctly visualised by examining the position with regard to the Non-Haryana Region, because the yields, to begin with, were very low in the Haryana Region due to lack of irrigation facilities. On this basis, we find that there has been an increase of about 20 per cent each in yields per acre under gram and rice; between 30 to 40 per cent under wheat, oilseeds, jowar, bajra and barley; 44 per cent under cotton and as much as 100 per cent under maize.

2.13. Comparing the position in the two regions, we find that the yields in respect of wheat and paddy are marginally higher in the Haryana Region, whereas under sugarcane the increase is significantly higher. The yield per acre under oilseeds is, however, higher by 10 per cent in the Non-Haryana Region and by 17 per cent and 27 per cent respectively under gram and maize.

Districtwise position

2.14. The increase in average yield per acre of paddy in all the districts growing this crop, except Ambala, has been more than 100 per cent, this being more than 165 per cent in Hissar and Rohtak districts. In Hissar and Rohtak districts, the average yield per acre is higher than that in any other district in the State. In respect of wheat, the increase in average yield per acre varies from 38 per cent in Ambala to 78 per cent in Hissar.

2.15. In respect of cash crops, the most significant increase in average yield per acre has been in respect of oilseeds and it has gone up by more than 100 per cent in Gurgaon and Hissar districts. In respect of sugarcane, the average yield per acre in Rohtak and Hissar districts is the highest in the State. In Karnal district, the average yield per acre has increased by 50 per cent over the year 1950-51. In respect of cotton also, the highest average yield per acre in the State is in Hissar district.

Input factors

2.16. There are a number of input factors for the development of agriculture, such as irrigation, fertilizers, seeds, implements, etc. The most important factor, however, is the man himself and it is a well-known fact that the cultivator in the Haryana Region is second to none as far as hard labour is involved. At this place, it is proposed to consider the comparative position of Haryana Region *vis-a-vis* the Non-Haryana farmer, the position in this regard is also proposed to be discussed in this chapter.

Irrigation

Net Area Irrigated

2.17 The over-all net irrigated area in the State in the year 1963-64 was 83.90 lakh acres. Its distribution in the three

regions as well as the percentage to the net area sown are indicated below :—

(Area in lakh acres)

Region		Net sown	Net irrigated	Percentage of net irrigated to net sown
Hill	..	12.33	2.21	17.9
Non-Haryana	..	90.05	51.80	57.5
Haryana	..	85.65	29.89	34.9
Total	..	188.03	83.90	44.6

The details, districtwise, are given in Annexure 15. It will be seen that the net area irrigated was only 34.9 per cent in the Haryana as against 57.5 in the Non-Haryana Region. The highest area irrigated in the Non-Haryana Area was in Amritsar being 88 per cent; followed by Kapurthala with 67 per cent; Jullundur and Ferozepore with 66 per cent; and Ludhiana with 56 per cent. In the Haryana Region, the highest area irrigated was in Hissar, being 49 per cent, followed by Rohtak where it was 43 per cent, and Karnal where it was 36 per cent. The irrigation percentage in Gurgaon was only 15, and in Mahendragarh 8.4.

Irrigation from Canals and other sources

2.18. The following table gives an idea of irrigation in the year 1963-64 from (i) canals, and (ii) from other sources.

(In lakh acres)

Region		Canals	Other Sources	Total
Hill	..	1.36	0.85	2.21
Non-Haryana	..	29.81	21.99	51.80
Haryana	..	24.34	5.55	29.89
Total	..	55.51	28.39	83.90

It will be seen that the net area irrigated by canals in the Non-Haryana Region was only 22 per cent higher than that in the Haryana Region. However, the area covered by other means such as tube-wells, pumping-sets, wells etc., was three times higher in the Non-Haryana Region. This is on account of the fact that water in a large tract in the Haryana Region is either too deep or brackish and the cost of drawing it out is prohibitive. There is, therefore, no alternative to canal irrigation being a major source of irrigation in the Haryana Region.

Gross area irrigated

2.19. The net area irrigated, however, does not give a complete picture as it does not depict the intensity of irrigation. The overall position of gross area irrigated in the three Regions is as follows:—

(Annexure 3)

Region	Gross area irrigated (in lakh acres)	Gross area irrigated as percentage of gross cropped area
Hill ..	3.18	17
Non-Haryana ..	71.17	63
Haryana ..	32.74	30
Total .	107.09	44

Fertilisers

2.20. The position regarding fertilizers distributed, district-wise, is given in Annexure 16. The region-wise distribution is as follows:—

Region	*Fertilizers distributed (in thousand tons)*		Percentage of total Punjab 1964-65	Average consumption per thousand acres 1964-65 (in tons)
	1956-57	1964-65		
Hill ..	3.20	20.06	7.1	10.9
Non-Haryana ..	19.99	186.64	66.2	16.5
Haryana ..	6.95	75.32	26.7	6.8
State ..	30.14	282.02	100.0	11.7

It will be seen that although the total cropped area in the two regions is more or less the same, the present consumption of fertilizers in the Non-Haryana Region is 66.2 per cent of the total consumption in the State as against 26.7 per cent only in the Haryana Region. The consumption in the Non-Haryana Regions is, thus, 2½ times of that in the Haryana Region. In terms of consumption per thousand acres, the figure in the Non-Haryana Region comes to 16.5 as against 6.8 in the Haryana Region. In fact, consumption in districts Ludhiana and Jullundur is as high as 30 and 32 tons per thousand acres. The consumption in the Hill Areas is also much higher than that in Haryana, the figure being 10.9 tons per thousand acres for the region.

2.21. Examining the position of the various districts within the Haryana Region, it will be found that the highest consumption is in Ambala and Karnal, this being 13.5 and 11.8 tons, respectively, per thousand acres. It is, however, to be noted that consumption even in these two districts is less than the average for the Non-Haryana Region. The consumption in districts Hissar and Gurgaon is quite low, being less than 5 tons per thousand acres, and in Mahendragarh District it is as low as 2.1 tons per thousand acres.

Improved Implements

2.22. The position regarding major agricultural implements according to 1961 Livestock Census is given in Annexure 17. The region-wise position is as follows:—

(Figures in brackets represent percentages to total Punjab)

Region	Iron Ploughs (in thousands)	Tractors	Oil-Engines with Pumping sets	Electric pumps for tube-wells
Hill ..	33.61 (7.0)	170 (2.2)	470 (5.8)	1,059 (12.1)
Non-Haryana ..	389.74 (81.5)	4,778 (60.7)	6,560 (80.4)	5,980 (68.1)
Haryana	54.95 (11.5)	2,918 (37.1)	1,128 (13.8)	1,735 (19.8)

The above table clearly shows that the Haryana Region is far behind the Non-Haryana Region in the application of

improved implements for increasing agricultural production. Although the total cropped area is almost the same in the two regions, yet the Haryana Region has only 11.5 per cent iron ploughs; 37.1 per cent tractors; 13.8 per cent oil engines with pumping sets and 19.8 per cent electric pumps for tube-wells against 81.5 per cent, 60.7 per cent, 80.4 per cent and 68.1 per cent, respectively, in the Non-Haryana Region.

2.23. Examining the district-wise position of implements in the Haryana Region, it will be seen that the conventional wooden plough is the most common plough in all the districts. The improved iron plough has broken the barriers to some extent in Hissar, Karnal and Ambala, but other districts seem to have been neglected in the propagation of even this elementary improved agricultural implement. In the Non-Haryana Region, Kapurthala District with 9,181 iron ploughs ranks lowest. But this is a very small district. If we examine the position in other districts, we will find that the lowest number of iron ploughs is 24,021 in Jullundur District of Non-Haryana Region while even the highest number of improved ploughs in Haryana Region is 24,865 in Karnal District. Since this implement is sold at subsidised rates by the Agriculture Department, the Department must shoulder responsibility for neglecting the Haryana Districts.

2.24. It may not be out of place to mention here that everywhere in the Haryana Region, there is a demand for approved fabricators so that farmers could buy the improved implements locally instead of depending upon supplies by Agriculture Department. Some progress has been made in Hissar, Rohtak, Karnal and Ambala but the districts of Mahendragarh, Sangrur and Gurgaon are lagging behind in this respect. The position regarding oil engines and pumping sets and electric-pumps for tube-wells is distressing in all the districts of Haryana except Karnal.

Co-operative Credit

2.25. Co-operative Credit is one of the important sources from which capital is made available to the farmers. The details about the number of agricultural societies, their membership, their working capital and the loans advanced by them are

given in Annexure 18. The overall position, as on 30th June, 1964, was as follows:—

Region		Number of societies per lac of population	Percentage of of members to total population
Hill	..	117.2	13.4
Non-Haryana	..	90.1	7.9
Haryana	..	85.3	5.1
State	..	91.1	7.7

It is apparent that the number of societies, per lakh of population, was largest in the Hill Region, this being 117.2 against 91.1 in the Punjab State as a whole. In the Non-Haryana Region, the number of societies per lakh of population was 90.1 and was very close to the State's average but in the Haryana Region, it was only 85.3. A more realistic picture can be drawn from the percentage of population covered by the membership of these credit societies. Against the average of 7.7 for the State as a whole, the figure was only 5.1 for the Haryana Region, against 7.9 in the Non-Haryana Region. The percentage of population covered in the Non-Haryana Region was, thus, more than 50 per cent higher than that in the Haryana Region.

2.26. The most important conclusion, however, is with regard to the availability of actual money in both these regions from these credit societies. The loan advanced by the credit societies in the Haryana Region amounted to Rs. 461 lakhs against Rs. 1,121 lakhs in the Non-Haryana Region during the co-operative year ending June, 1964. The amount advanced in the Non-Haryana Region was, thus, more than double of that in the Haryana Region. In terms of credit per agricultural worker and per cropped acre the position in the various

regions was as follows (Detailed calculations are at Annexure 19):—

Region		Credit per agricultural worker (Rs)	Credit per cropped acre (Rs)
Hill	..	40.33	15.76
Non-Haryana	..	61.80	9.90
Haryana	..	22.90	4.21
State	..	41.19	7.76

It will be seen that the credit available per agricultural worker was only Rs. 22.90 in the Haryana Region as against Rs. 61.80 in the Non-Haryana Region. Even in the Hill Region, the credit available per agricultural worker was as high as Rs. 40.33. Similarly, credit per cropped acre in the Haryana Region was only Rs. 4.21 as against 9.90 in the Non-Haryana Region. In the Hill Region, it was as high as Rs. 15.76. The average farmer in the Haryana Region, thus, got about 40 per cent credit per cropped acre of what this counterpart in the Non-Haryana Region got in the co-operative year 1963-64.

Productivity in the Agricultural Sector

2.27. The result of all this is reflected in the incomes of the people. According to the estimates of the Economic and Statistical Organisation (Annexure 8), the income in the Haryana Region from Agriculture (in 1961-62) was Rs. 104.52 crores as against Rs. 214.25 crores in the Non-Haryana Region. It has been mentioned in para 2.1 that the number of workers engaged in cultivation in Haryana is 20.11 lakhs as against 18.14 lakhs in the Non-Haryana Region. Taking the two together, it will be obvious that the productivity per worker in the Haryana Region is less than half the productivity of a worker in the Non-Haryana Region. This is a distressing state of affairs which must be taken note of by all concerned.

Recommendations

2.28. It is somewhat paradoxical that although the overall productivity for the Haryana Region as a whole is low, the yield per acre for some of the major crops is more or less the same in the two regions. In respect of sugarcane and paddy, it is, in fact, better than that in the Non-Haryana Region. The area under sugarcane is the highest in Rohtak, Karnal and Ambala and so is the yield per acre. The highest area under paddy in the entire State is in district Karnal. People in district Hissar and Sangrur are very fast taking to cotton and given proper facilities, these areas can beat Ferozepore and Bhatinda in respect of cotton production. The area under oil-seeds is already larger in the Haryana Region and both the yields and the area under this crop have gone up significantly in district Hissar and Mahendragarh. Groundnut is being recently introduced in the Haryana Region and it has bright prospects in irrigated areas, particularly in district Hissar, where the soil is well-suited for this purpose. The Haryana Development Committee went to see a jute processing unit in Faridabad and was told that even jute could be produced in swampy land in district Gurgaon and tehsil Kaithal of district Karnal. The irrigation facilities are due to be extended in an area of over four lakh acres in district Gurgaon with the completion of the Gurgaon Canal and the Sohna Lift Scheme, Stage I. If the suggestions made in the chapter on Irrigation are implemented, there will be larger area under irrigation in this district and in district Mahendragarh. This will bring more areas under superior food and cash crops. The conclusion is, thus, inescapable that the Haryana Region is well-suited to take to superior crops and if the productivity in the Agricultural sector is low, it is mostly due to an inadequacy in respect of input factors and extension of technical know-how and guidance.

2.29. Coming to the input factors, one of the basic needs is that of irrigation. Simultaneously, measures have to be taken for flood protection and for arresting waterlogging, which has assumed menacing proportions in recent years. In fact, there is a strange spectacle of drought conditions in one part of the Haryana Region and floods and waterlogging conditions in another part of the region. These problems are so important and are required to be taken up on such an urgent basis that the whole position with regard to them is

being examined in a separate chapter. The other major inputs are fertilisers, seeds, improved implements, pesticides, etc., and these should be duly provided for in the Haryana Region. An idea of the leeway in this regard has already been given in the earlier paragraphs. It will also be necessary to strengthen the extension agency and ensure that the right type of personnel are posted in the Haryana Region. The Committee would not like to go in great detail in this regard and would like to confine itself to some of the major issues concerning the development of agriculture in the Haryana Region.

Package programme for Karnal

2.30. The strategy of development as regards agriculture should be to develop all the potential areas in the Haryana Region to the maximum possible extent. Certain areas in both the regions have been covered by Intensive Development Blocks and the Departmental representative assured the Committee during discussions that all potential areas in respect of wheat, rice, sugarcane, etc., would be taken up for intensive development. The Committee, however, feels that this is not enough and at least one district should be taken up for intensive development on the lines of the Package Programme in Ludhiana district. The Committee is of the view, with which the Secretary, Agriculture and the Director of Agriculture fully agreed, that district Karnal, which has lately become the rice-bowl of the Punjab, is pre-eminently suited for being taken up for intensive cultivation. This district has an area of 19.75 lakh acres and the length side of the district stretches along western bank of the River Yamuna. Besides Yamuna, there are four other Nadis, viz., Ghaggar, Saraswati, Markanda and Patiala Wali Nadi which cover a large area of the district. In addition, there are numerous seasonal nallahs, such as Nai, Chautang, Rakshi, Umle, etc., which have considerable water during rainy season. 36 per cent of the net area is already irrigated and nine per cent falls under 'sailabi' and 'abi' categories. The sub-soil water is plentiful except in the south-western tip. Five lakh acres of land in the district is already under wheat, 2½ lakh acres under rice and about one lakh acres under sugarcane. The district also grows a lot of vegetables and can boast of a large number of cold storages. Under the Package Deal in district Ludhiana, Rs. 90 lakhs have been provided for various purposes, besides giving substantial loans and subsidies for minor irrigation. The Committee feels that

there is no reason why at least one district in the Haryana Region should not be taken up for such development during the Fourth Five-Year Plan. The Committee, accordingly, strongly recommends to Government that due provision should be made in the Fourth Five-Year Plan for taking up district Karnal for intensive development in agriculture.

Soil conservation and water management

2.31. Another item to which special attention is required in the Haryana Region is soil conservation and water management. It has been established through research in agriculture in U.P., Bombay and Madras that agricultural production can be increased by as much as 25 per cent by adopting proper soil conservation measures. The rainfall in a large part of the Haryana Region, particularly in district Gurgaon, Mahendragarh and western parts of district Hissar and Rohtak, is very scanty and retention of water through soil conservation measures can be as good as minor irrigation works and, perhaps, even better.

2.32. The other part of the problem is soil erosion. In the foot-hills of district Ambala, erosion is due to water action from heavy rainfall and fast seasonal streams passing through it. In the western part of the region, the problem is one of wind erosion, due to the action of hot south-western winds coming from Rajasthan. Still another problem, notably in district Karnal, is that of waterlogging due to the absence of proper field drainage and inadequacy of water management practices. Large areas in this district and elsewhere can be saved by giving proper attention to this aspect of the problem.

2.33. The Committee is of the view that the problems of soil conservation, wind and water erosion and water management require special emphasis during the Fourth Plan period. Dr. Rama Rao, Adviser, Soil Conservation, mentioned to the Committee that his Organisation in the Haryana Region was being quadrupled and substantial work would be undertaken in the region during the Fourth Plan period. Mr. Latham, T.C.M. Adviser on Soil Conservation, also stated before the Committee that work was going on for educating the farmers regarding the need for levelling and proper field drainage. In this connection, he specially mentioned the desirability of having

underground pipe drainage which could save a lot of water and could be well within the reach of the ordinary farmer. Giving evidence before the Committee, Shri Dharmpal Singh, Chief Conservator of Forests, specially emphasised the need for putting a deep-shelter belt all along the border and for having a comprehensive programme of putting up tree belts at suitable distances in the tract, as well as the taking up of a programme of afforestation along rivers Yamuna, Ghaggar, Markanda and Dohan, etc. He suggested that the following programme should be provided for the Haryana Region :—

Name of Scheme	Additional funds required for 4th Plan (for Haryana)	Physical targets
	(Lakh Rs)	
Desert Control Scheme	213.00	(i) Raising of shelter belt along the border. 500 Km. (ii) Wind breaks 2,00,000 Km. Gurgaon, Rohtak, Mahendragarh, Hissar. (iii) Sand dunes, including Castor plantation. 8,000 hectares.
Raising of tree protection belts along River Yamuna Ghaggar, Markanda, Dohan	60.00	1,000 Kilometres.
Afforestation and Pasture Development (All the districts in Haryana)	150.00	20,000 hectares.
Soil Conservation works on Agricultural lands (Gurgaon, Mahendragarh and Hissar districts)	50.00	20,000 hectares
Soil Conservation works in the low hills including training works (Areas affected Ambala district)	45.00	(i) Choe training works 150 Km. (one side) (ii) Afforestation 8,000 hectares.
Total	518.00	

2.34. The Committee agrees with the views of the experts quoted above and recommends to Government that a comprehensive programme of soil conservation and water management on the lines elaborated above, should be undertaken for the Haryana Region during the Fourth Plan period.

Improved seeds

2.35. According to the Agriculture Department, the whole of the area under cotton, sugarcane and wheat is under improved seeds while only 20 per cent of the area under bajra, 10 per cent under oilseeds and 50 per cent under gram is under improved seeds. As stated earlier more than 50 per cent of the total cultivated area in Haryana is under Gram, Bajra, Barley and Jowar. It is, therefore, very clear that the regional needs have not been fully kept in view while evolving and propagating improved variety of seeds and as a result, the Haryana Region has suffered in the matter of yield per acre. The Committee regards this state of affairs as entirely unsatisfactory and recommends that the present imbalance should be rectified as early as possible.

2.36. At present there are only 46 Seed Farms in the Haryana Region as against 82 in the Non-Haryana Region, even though the cultivated area in both the regions is practically the same. The Committee recommends that in addition to the setting up of more Seed Farms in the Region, the size of the existing Seed Farms should be raised to meet the requirements of the Region. Irrigation and other facilities at these Seed Farms should also be increased. Seed Stores should be located at the right place to minimise the transportation charges and the location of Seed Farms and Seed Stores should be done strictly on economic considerations.

Improved implements

2.37. It has been explained earlier that Haryana Region is considerably lagging behind in the application of improved implements for increasing agricultural production. One of the reasons for this is short supply of improved implements in the region. To overcome this difficulty, it is suggested that the number of approved fabricators should be increased in all the districts, especially Sangrur, Mahendragarh, Gurgaon and Rohtak. These fabricators, in addition to producing adequate quantity of implements, can also alter and improve the designs in keeping with the needs of the area.

2.38. During the visits to the various districts, the Committee found that there was a great demand for tractors all over the place. The Committee is, accordingly, of the view

that the grant of loans for the purchase of tractors should be liberalised and Service Stations should be opened at suitable places. It will have to be ensured that adequate spare parts are made vailable and repair and service facilities are provided within easy reach of the farmers.

Agricultural education and research

Agricultural education

2.39. The establishment of the Punjab Agricultural University Campus at Hissar is an important event for the development of Haryana Region. This University has started the College of Agriculture and is strengthening the College of Veterinary and Animal Science at this campus. It is also planning to set up the College of Animal Science in the Fourth Plan. This will be a unique combination of agriculture, animal husbandry and extension education facilities in agriculture and allied sciences. There is a big lacuna which can be filled if three more colleges, i.e., (I) College of Food Science and Technology; (II) College of Agricultural Engineering; and (III) College of Home Science are also set up at this campus. For the setting up of these three colleges and augmenting research, teaching and extension education programme in agriculture and animal husbandry, a minimum grant of about four crore rupees is required over and above the ceiling of proposed budget for the Fourth Plan. If these colleges are set up at the Hissar campus of the Punjab Agricultural University, they will provide facilities for training, research and extension education activity in all the fields of agriculture, veterinary, animal science and agricultural engineering which are so much interlinked. Moreover, it will be possible to provide training facilities for women in the field of Home Science so as to equip them to play an important part in the development of the region.

2.40. The Committee considers that the necessary funds for increasing the facilities at the Agricultural College, Hissar, in a comprehensive manner should be provided, with whatever suitable phasing which is considered feasible. The Committee also feels that the opening of one Agricultural College was not enough for the region and that at least one more Agricultural College should be opened in the Haryana Region during the Fourth Five-Year Plan.

Agricultural research

2.41. The Committee feels that although the soil and climatic conditions of Haryana tract show large variations, yet the establishment of research stations has not been done according to the needs of the tract. The entire district of Mahendragarh, parts of district Gurgaon (Rewari), Rohtak (Jhajjar), and Hissar (Bhiwani and Loharu) form a totally different soil and climatic zone, yet almost no agricultural research of any kind has been done for the benefit of these areas. Projects for intensified research on the breeding of highly productive varieties and determining improved agronomic practices are an immediate necessity. The Agricultural Research Station, Hissar, does not meet these requirements. The Committee, accordingly, recommends that more research stations should be opened in the Haryana Region. To start with, the work may be concentrated on a few most important agricultural problems which are fundamental to crop production in this region.

Co-operative Credit

2.42. It has been brought out earlier that the co-operative credit available to the farmers in the Haryana Region is only 40 per cent of that provided to the farmers in the Non-Haryana Region. There is, thus, need for launching a drive for the development of the co-operative movement in the Haryana Region by way of increase in the membership of the societies and reduction in the outstanding dues. The position in the Mewat area is really distressing, as the prevalent rate of interest charged by the local money-lenders varies from Rs. 2 per cent to Rs. 5 per cent per mensem. Special attention will have to be given to the co-operative movement in this area. Although in the long run, it will be the enthusiasm of the people that will count, the initiative must come from the Department and it should be ensured that qualified and competent staff is posted in the Haryana Region for this purpose.

2.43. For meeting the long-term needs of the farmers, particularly for the purchase of tractors and installation of tubewells and pumping sets and redemption of mortgaged land, the Land Mortgage Bank can play a decisive role. The bank raises funds mainly by issuing debentures which are guaranteed by the State Government. The activities of the bank, which are very restricted at the moment, need to be

greatly extended in the Haryana Region during the Fourth Plan period. The local representatives in Narwana and Jind complained that they could not take full advantage of the Land Mortgage Bank because they were required to transact their business with the bank at Sunam. They, therefore, urged that a branch should be opened either at Narwana or Jind. The Committee agrees with this view and recommends it to the Government for requisite action.

Storage Facilities

2.44. It is a well-known fact that a sizable quantity of foodgrains is wasted annually because of the lack of adequate and proper storage facilities. At present the storage facilities in the State are being provided by the State Warehousing Corporation. Out of 74 Warehouses in the State, only 20 are located in the Haryana Region. The cropping pattern is fast changing in the Haryana Region and the consumption of fertilizers as well as improved seeds is also going up rapidly. The marketable surplus with the farmers will also increase a great deal in the near future. The Committee, therefore, recommends that storage facilities in the Haryana Region should be considerably augmented during the Fourth Plan period.

CHAPTER III

ANIMAL HUSBANDRY AND DAIRY DEVELOPMENT

The Haryana Region is known throughout the country for its milch and draught cattle and is the home of two of the best Indian breeds of cows and buffaloes. This is because its soil and climate are eminently suited for the breeding of good stock and the people of this area are excellent breeders. The region has vast potentialities for the development of dairying industry and given proper guidance and direction, it can well become the Denmark of India.

Existing Position

3.2. According to the 1961 Livestock Census, the Punjab's total livestock population, including sheep, goat and camel etc., was 132.4 lakhs, out of which 49 lakhs, representing 36.7 per cent of this population was in the Haryana Region. The total number of milch cattle in the State is placed at 22.65 lakhs, out which 8.54 lakhs, representing 37.7 of the total milch cattle, are in the Haryana Region. The position of the various regions in respect of density of cows and buffaloes is as follows (District-wise details in Annexure 20):—

Region		Milch cows per square mile area	Milch buffaloes per square mile area
Hill	...	11	11
Non-Haryana	...	27	36
Haryana	...	22	28

It will be seen that even though Haryana Region is known for cattle breeding, the number of milch cows and buffaloes per square mile in the Haryana Region is less than that in the non-Haryana Region. This clearly indicates that the retentive power of the breeder in the Haryana Region is very

low. In fact, the common feeling is that the yield of milk per cattle is going down and the breeds are also degenerating. This is due to the export of best cattle because of attractive prices as well as inadequate incentive for the breeders to retain the cattle themselves. The Haryana Development Committee feels that a stage has been reached when decisive action must be taken to reverse this trend so that cattle breeding can play a significant part in raising the income of the rural people in the area.

Feed

3.3. In view of the widely acknowledged superior quality of the Haryana cattle, it can be assumed that the cattle are better looked after in this region than in the rest of the State. The real difficulty, however, is that due to inadequacy of irrigation facilities, there is a dearth of green fodder. This is the single most important reason why cattle are exported on a very large scale from the Haryana Region. Since Rohtak and Karnal are more favourably placed from the irrigation point of view, the number of milch cattle per square mile in these districts is higher than that in other districts. Part of the problem will be solved if irrigation facilities are extended, as visualized under the Chapter on Irrigation, but, simultaneously, an attempt will have to be made to increase the area under fodder and to develop higher-yielding strains of barseem and other fodder crops.

3.4. Next in importance from the nutritional point of view is the availability concentrates. The area under oilseeds in the Haryana Region is quite large and if the oilseeds available in the region are crushed within the region, availability of oilcakes would increase tremendously. A number of other concentrates are required for raising milk yield per cattle. These have to be blended in a scientific manner. The Committee would, accordingly, emphasise the need for setting up at least one cattle-feed factory in the Haryana Region during the Fourth Five-Year Plan.

Breeding

3.5. It is commonly known that the existing number of bulls and he-buffaloes is not adequate for natural servicing of all the eligible cows and she-buffaloes. The only way to

overcome this shortage is to resort to artificial insemination, and, for this purpose, Artificial Insemination Centres have been established throughout the State. A number of key villages are attached to each of these Artificial Insemination Centres.

3.6. The position of the Haryana Region in this regard is not satisfactory as in the year 1963-64, there were only 76 Key-Village Centres in this region as against 159 in the non-Haryana Region. During tour of district Sangrur, it was represented to the Committee that Narwana and Jind tehsils did not have a single Key-Village Centre. It is true that there is some prejudice against artificial insemination in the Haryana Region, but it is also a fact that present facilities are both inadequate and inefficient. The Committee was told that postings at the Artificial Insemination Centres were regarded as a sort of punishment by the staff of the Animal Husbandry Department, with the result that only the second-grade staff got posted at these places. This is one of the main reasons for the poor response to the whole programme.

3.7. In view of the great need for improving the breed of cattle in the Haryana Region, the Committee feels that special emphasis should be given to the Key-Village programme in this Region. The Committee also feels that it is Government's responsibility to ensure that the staff posted at the Artificial Insemination Centres is of the highest quality and it should devise a scheme for giving proper incentives so that the necessary staff with the requisite qualifications is made available. The Committee is also of the view that, simultaneously, vigorous action should be taken for the castration of scrub-bulls and other inferior types of bulls.

3.8. A Scheme already exists for the grant of subsidy to the owners of high milk-yielding cows and buffaloes so that they are not tempted by the lucrative prices offered by the importers from the other States. This scheme is proposed to be extended and a sum of rupees one crore has been earmarked for it in the State's Fourth Five-Year Plan. In view of the need for developing cattle-wealth, the Committee recommends that at least 50 per cent of the amount should be earmarked for the Haryana Region. The Committee was also told that a uniform criterion was being applied for giving subsidy for high milk-yielding animals throughout the State, with the result that in some of the districts practically no subsidy was being

given. The Committee considers this to be an unsatisfactory arrangement and recommends that norms fixed for the various districts should be in accordance with the climatic and other prevalent conditions.

Veterinary Facilities

3.9. The animal mortality rate in Punjab is estimated to be 8 to 10 per cent which is slightly lower than the all-India rate. However, the loss of cattle by the farmers due to epidemics and various other animal diseases is quite significant. The statement at Annexure 21 gives the region-wise position about veterinary hospitals, dispensaries and the veterinary staff of various categories. A perusal of the statement would indicate that the number of hospitals and dispensaries as also the strength of staff in certain categories is less than what is required according to the percentage of bovine population in the Haryana Region.

3.10. At present, the medicines required for veterinary hospitals and dispensaries are purchased by Zila Parishads as these institutions function under their over-all control. It was stated before the Committee that the present arrangements are unsatisfactory as the Zila Parishads do not purchase medicines in time. In district Karnal, the Committee was told that due to a cattle epidemic in some villages some time back, there was a sizeable loss due to the non-availability of medicines in sufficient quantities. It was suggested that adequate quantities of medicines should be stored at central places so that in case of epidemics, these could be made readily available. These problems need to be looked into.

Intensive Cattle Development Programme

3.11. An intensive cattle development programme is proposed to be launched by the Government of India on the lines of the 'package programme' for agricultural production. The main idea of the programme is to foster intensive development of cattle breeds of superior quality in the main breeding tracks and milk-shed areas of the large dairy projects. At present this work is being done on a limited scale under the 'key-village' scheme but since the centres are located in a dispersed manner all over the country, these centres represent a tiny area of well-organised activity, surrounded all round by

vast areas where indiscriminate breeding continues unabated. As a result, the effect of the good work is, to an extent, obliterated.

3.12. The idea of the intensive cattle development scheme is to take up a tract of about 1 lakh milch cows and she-buffaloes and provide intensive facilities for breeding, disease control and other veterinary aids. Special attention is proposed to be given to feeds and fodder development and loans and subsidies are proposed to be given for the purchase and retention of high-yielding cattle. The total expenditure on a project of this type for the five-year period is of the order of Rs. 1.31 crores.

3.13. The Haryana Development Committee considers that projects of the type mentioned above can greatly assist cattle development and concerted efforts should be made by the State Government to set as large a number of projects for the State during the Fourth Five-Year Plan period as possible. Districts Karnal and Rohtak have a high intensity of cows and she-buffaloes per square mile and have all the other pre-requisities for the launching of these intensive cattle development projects. The Haryana Development Committee, accordingly, recommends that at least one project should be established in each of these districts and in the light of the experience gained at these places, the programme should be extended to the other districts of the Region as well.

Dairy Development

3.14. As alluded to earlier, the dry climate of the Haryana Region and its proximity to Delhi, which is among the biggest milk-consuming centres in the country, make it an ideal region for dairy development. The Kaira District Co-operative Milk Producers' Union, Anand, Gujarat, popularly known as 'Amul', sends liquid milk worth Rs. 3 crores (in addition to milk products valued at another Rs. 3 crores) to Bombay City which is situated at a distance of over 250 miles and there is no reason why a similar effort should not be made to develop the dairy industry in the Haryana Region which is so much closer to Delhi. Of course, behind the success of the 'Amul' enterprise lies the purposeful and dedicated effort of more than 85,000 members organised in 421 co-operative societies. The villages within the project area are organised into village milk producers' societies which collect milk from the villages and get it

transported to the Central milk-collecting centres. The secretaries of these societies are trained for artificial insemination work and fresh stock of semen is supplied daily by the milk trucks in the course of their milk collection runs. The health of the cattle is specially looked after and mobile dispensaries visit all the villages once every week and give free veterinary treatment. A cattle-feed factory has been set up at a cost of Rs. 31 lakhs to provide balanced nutritional diet for the milch animals. Special emphasis is being given to increasing yield per animal and the average yield per member-buffaloe per lactation of 300 days was 2,100 lbs. in 1961 as against an all-India average of 1,100 lbs. The Union has a seven-year plan of doubling this figure, and the yield per animal so obtained would perhaps compare favourably with the best in the world.

3.15. An effort will have to be made on similar lines for the development of cattle wealth in the Haryana Region. It will be necessary to take the intensive cattle development programme very earnestly and to organise the villages concerned into milk producers' co-operatives. It will be necessary for the Government to give intensive help by way of subsidies and loans to the breeders in the area. A scheme has already been drafted for this purpose in the milk-shed areas of Delhi Milk Supply Scheme, and the amount required is of the order of Rs. 75 lakhs. Since the Delhi Milk Supply authorities would be the beneficiaries, an effort has to be made to have this programme on the centrally-sponsored side.

3.16. The Delhi Milk Supply authorities have set up 8 Milk collection and Chilling Centres in Gurgaon, Rohtak and Karnal as follows:—

District	Centre
Gurgaon	... Sohna Palwal Ballabhgarh
Rohtak	... Kharkhoda Bahadurgarh Samp'a Sonepat
Karnal	.. Jalmana

Each centre has a modern plant and machinery for chilling and storage of about 400 maunds of milk per day. Four of these centres at Sohna, Palwal, Kharkhoda and Jalmana are in operation at present and two of these (at Sampla and Sonepat) have yet to be commissioned. The Centres at Ballabhgarh and Bahadurgarh were operating previously but these have been closed because the scheme failed to procure the desird quantity of milk in competition with other private buyers. It will have to be ensured that not only sufficient milk is made available for all these 8 centres but sufficient surplus milk is generated so as to enable the Delhi Milk Supply authorities to open more such centres in the Haryana Region.

3.17. Recent studies have brought out the fact that the heavy over-head cost involved in the pasteurisation, chilling, bottling, transport and distribution of fluid milk makes the operation of milk plants uneconomic and that bottled pasteurised milk is, by and large, being subsidised in one way or the other. It is, therefore, felt that apart from meeting the needs of Delhi, the emphasis internally should be on having small units making milk products, like ghee, butter and cheese, and, thus, making these units economically viable by saving on transportation and capital costs. In this connection, the Committee noted that during the Fourth Five-Year Plan period, it is proposed to set up 20 such units in the entire State. According to the information supplied by the Milk Commissioner, 8 of these are proposed to be set up in the Haryana Region. Considering that none of the three existing plants (at Amritsar, Moga and Nabha) is located in the Haryana Region, and in view of the vast scope for dairy development in this region, the Committee feels that the number proposed for the Haryana Region is inadequate and that a much larger share out of these 20 milk units should be allotted to the Haryana Region.

Sheep and Wool

3.18. Another method of increasing the income of the people, particularly in the arid areas of the Haryana Region, is by organising rearing of sheep on a systematic basis. Sheep rearing has been generally done by the poor and landless class and for sometime the sheep population declined because of restrictions on grazing in roadside pastures and forests and reclamation of common land for agricultural purposes. The

profession was also given up because it was regarded as lowly and invited social disapproval. The economic potentialities of sheep rearing have, however, been gradually realised, and of late, there has been a trend towards increase in the sheep population.

3.19. The average quantity of wool produced per sheep is only about 4 pounds which is very low as compared to some other countries. The wool produced internally is only fit for the manufacture of carpets and rough blankets and for tweeds and other better type of clothing material, wool is mostly imported. There is, however, a great demand for carpet wool in the international market as we produce some of the best carpet wools in the world. Some quality wool is also produced in the region, but due to ignorance of the breeders and un-scientific shearing, it is mixed up with the rough variety and is sold as such. In 50 per cent cases, wool is sold to traders on the body of the sheep without weighing and the latter make more than 100 per cent profit.

2.20. For the proper development of sheep and wool industry, concerted effort has to be made to make the rearing of sheep a profitable profession for the breeders. With this end in view, the Haryana Development Committee recommends the following:—

(i) Sheep and Wool Extension Centres should be multiplied so that a large number of breeders can use the quality rams maintained at these centres.

(ii) Large-scale Wool-grading Centres should be established.

(iii) The Animal Husbandry Department should take over the shearing of sheep by establishing wool-shearing sheds.

(iv) The price of wool should be paid to breeders after proper grading.

(v) The quality of indigenous sheep should be improved by selective breeding so as to increase the quality and production of wool per sheep.

(vi) For controlling epidemics and for providing veterinary facilities generally, there should be provision for a few mobile dispensaries.

(vii) To encourage large-scale breeding of quality sheep, Government should give assistance to breeders by way of loans and subsidies.

CHAPTER IV

IRRIGATION, FLOOD CONTROL, DRAINAGE AND ANTI-WATERLOGGING

Irrigation

As already stated in an earlier chapter, the need for irrigation is one of the most fundamental from the point of view of increasing agricultural production. The comparatively favourable position of Punjab is due to the fact that it forms a part of the Indus basin and water is available to it from three perennial rivers, i.e., the Ravi, the Beas and the Sutlej. These rivers have a crucial importance for the economy of Punjab and their existence is of far-reaching consequence in a number of ways—

First:—they provide a steady reservoir of water which can be tapped for flow irrigation;

Second:—they charge the sub-soil water in a large region, making it possible to have wells, pumping sets/tube-wells in areas within the tract which are not fully covered by flow irrigation; and

Third:—they act as natural drains, providing an outlet to the sea for the excess water.

4.2. The difficulties of the Haryana Region, in a way, arise from the fact that none of these three rivers passes through it. Only one river, i.e., the river Ghaggar, flows through parts of the region but it is not a perennial river and has no natural outlets and ultimately gets absorbed in the sand-dunes of Rajasthan. The region is, however, fortunate in having river Yamuna on the boundary between the Punjab and the U.P. on the eastern side, and even though the supplies in this river are meagre compared to the other three rivers, it does provide irrigation for large tracts in districts Karnal, Hissar and Rohtak through the Western Jamuna Canal. It also charges the sub-soil water all along the border.

Rainfall Pattern

4.3. Another basic factor to be kept in mind is the rainfall pattern. The annual rainfall is the lowest in the south-west regions and the highest in the north-east regions. The maximum rainfall is about 85″ in the foot-hills and the minimum rainfall is 10—15 inches in the southern parts of the Punjab. About 80 per cent of the over-all rainfall in these districts falls in the months starting from July to September. There is a pronounced rainfall peak in the months of July, August and September, resulting in early local floods and wide-spread floods in some areas.

4.4. The district-wise average rainfall (average of five years 1958 to 1962) is as follows:—

District		*Rainfall* (Inches)
Kangra	...	65.71
Simla	...	60.21
Gurdaspur	...	51.54
Ambala	...	47.16
Hoshiarpur	...	40.58
Ludhiana	...	30.86
Patiala	...	30.19
Jullundur	...	30.00
Karnal	...	29.15
Amritsar	...	28.86
Kapurthala	...	25.68
Sangrur	...	22.95
Bhatinda	...	22.66
Rohtak	...	19.51
Gurgaon	...	19.08
Mahendragarh	...	18.87
Hissar	...	17.83
Ferozepur	...	17.76

The above statement indicates that the rainfall in four of the Haryana Districts, i.e., Rohtak, Gurgaon, Hissar and Mahendragarh is less than 20″. In Sangrur, it is only

marginally higher, being 22.95 inches. District Karnal in the Haryana Region, however, falls in the moderate rainfall zone, the average being 29.15 inches. The average rainfall of district Ambala is 47.16 inches, but this is on account of the fact that a large tract of the district is comprised of hills and foot-hills where the rainfall is higher. On the other hand, in the Non-Haryana Region, only districts Ferozepur and Bhatinda are deficient from the point of view of rainfall. Almost all other districts are more favourably placed, the rainfall being around 30 inches in the central districts of Ludhiana, Patiala and Jullundur, about 40 inches in district Hoshiarpur and about 50 inches in district Gurdaspur.

Sub-soil Water

4.5. Another source which can be tapped is the sub-soil water reservoir. In this respect, too, the position in the Haryana Region is that while there is sufficient sub-soil water in parts of district Karnal and the eastern part of Rohtak and Gurgaon Districts and in Jagadhri and parts of Naraingarh Tehsils of district Ambala, there is paucity of sub-soil water in the western part of the region, notably district Hissar, district Mahendragarh, tehsil Rewari of district Gurgaon, tehsil Jhajjar of district Rohtak and tehsil Kaithal of district Karnal. In most of the places in these areas, water is either too deep or brackish and the cost of taking it out by conventional means is almost prohibitive. Sub-soil water is mostly found alongside seasonal streams, notably along Sahibi Nadi in district Gurgaon and Krishnawati and Dohan Nadis in district Mahendragarh. The quantity of water is, however, not such as to provide assured irrigation in very large areas.

Changes since Partition

4.6. A number of developments have taken place in the post-partition period which hold great promise of rectifying this imbalance in respect of availability of water resources in the two regions. The picture regarding irrigation has completely changed after the taking up of huge storage reservoirs on river Sutlej and river Beas. Bhakra Dam on river Sutlej has already been completed and reservoirs on river Beas are in the process of construction. At a later stage, it is proposed to take up the Thein Dam on river Ravi as well as dams on river Yamuna and its tributaries. The Dams on the latter will be in the U.P. and Himachal Pradesh territories.

4.7. Apart from storage of water in the shape of huge reservoirs, the whole irrigation system has been completely interlinked. Waters from river Ravi are transferred to river Beas through the Madhopur-Beas Link. Waters from river Beas would be transferred to river Sutlej through the Beas-Sutlej Link. Waters from Bhakra are being transferred to Sirsa Branch of the Western Jamuna Canal through the Narwana Link and are further proposed to be taken to river Yamuna through the Western Jamuna Feeder and Western Jamuna Link. The water so transferred to river Jamuna can be picked up by Okhla Headworks for being diverted to Gurgaon Canal and the Sohna Lift Scheme Project. The position, therefore, is that the whole irrigation system in the Punjab is an integrated one and, within certain very broad limits, it is possible to take water from one place to another place in the Punjab without much difficulty.

4.8. The other feature of great significance for the Haryana Region is the availability of cheap power in recent years after the completion of Bhakra Dam and other power projects. One consequence is that extension of minor irrigation by way of pumping sets/tube-wells has become a practical possibility even in areas where the cost of lifting sub-soil water through coventional means had, hitherto, proved prohibitive. The other is that lift irrigation can be resorted to in a number of areas which are not commandable from flow irrigation. Water available in the seasonal streams, drains, etc., can also be utilised through this means.

Strategy of Development

4.9. The strategy of development of irrigation, in this context, should be to extend canal irrigation, even if it involves lifts, to all areas which can be so commanded and increase the intensity of irrigation, wherever possible. Water is the gift of nature and it must be distributed equitably in all areas. The cost involved in putting up lifts should be a subsidiary consideration, in view of the process of economic development that it would initiate. In areas where sub-soil water exists, an attempt should be made to provide power as early as possible so as to push the programme of installing tube-wells and pumping sets. Simultaneously, an effort should be made to utilise the water of all seasonal streams and drains, either directly or through lifts or by storing it by bunds

or even in the sub-soil by way of percolation. It is, thus, proposed to examine the problem in the following order:—

(1) irrigation by canals;
(2) irrigation by tube-wells and pumping sets; and
(3) irrigation by other means.

Irrigation by Canals

4.10. Prior to Partition, the United Punjab possessed one of the finest net-work of canals in the wor'd. On Partition, however, only a small share of the canal system came to India. Out of 31 weir-controlled canals in the Indus basin, only 4 canals fell to the share of the Punjab (India), and these drew less than 14 per cent of the river supplies utilised by the canals against 86 per cent that fell to the share of the West Punjab.

4.11. The total gross area of the present Punjab is 303 lakh acres, out of which the culturable area is 213 lakh acres. The culturable commanded area at the time of Partition was only 77.04 lakh acres and irrigation was provided for 39.71 lakh acres. Its distribution in the two Regions is given below:—

(In lakh of acres)

Serial No.	Name of Canal	C.C.A.	Area irrigated
	Haryana Region		
1	Western Jamuna Canal ..	26.14	11.82
2	Ghaggar Canal ..	.73	
3	Saraswati Canal ..	1.55	
	Total ..	28.42	
	Non-Haryana Region		
1	Upper Bari Doab Canal ..	7.89	27.89
2	Eastern Canal ..	3.49	
3	Sirhind Canal—		
	Punjab Branch ...	20.05	
	Pepsu Branch ...	16 29	
	Total	48.72	

4.12. The disparity in irrigated areas between the two regions was very much marked but even this does not reflect the true position as there was a great difference in the water allowance in the two regions. The main-stay of the Haryana Region was Western Jamuna Canal and since supplies available in the river Yamuna were low, the water allowance in the Western Jamuna Canal Tract was from 1.9 to 2.16 cusecs per thousand acres of C.C.A. at the distributary head, so that more areas could be covered by canal irrigation. On the other hand in the Non-Haryana Region the water allowance was 3 to 3.5 cusecs in the case of Upper Bari Doab Canal and 1.69 to 2.37 cusecs on Sirhind Canal and from 3.5 to 5.5 cusecs on the Eastern Canal which is a non-perennial channel.

4.13. On the attainment of Independence, the problem of rehabilitation, self-sufficiency in foodgrains, and the general development of the State engaged the serious attention of the National Government. A number of Grow-More-Food and Tube-well Extension Schemes were taken up. Simultaneously, the storage of waters of river Sutlej was envisaged in the form of Bhakra-Nangal Project. In the Haryana Region, the Sirsa Branch of the Western Jamuna Canal was transferred to the Bhakra system, thereby releasing 1,794 cusecs of Jamuna water for use in the rest of the Western Jamuna Canal tract, and for increasing the water allowance. Water was also increased in this canal by the installation of 256 tube-wells, of 2 cusecs capacity each, under the Jagadhri Tube-well Scheme. In the non-Haryana Region, irrigation was extended on the Upper Bari Doab Canal and the Sirhind Canal. In the latter case, certain areas were wholly transferred to the Bhakra system, while on others the intensity of irrigation was increased from this source. The Madhopur-Beas Link was constructed to divert 10,000 cusecs of water to the river Beas for utilisation in the Eastern Canal, Sirhind Feeder and the Rajasthan Feeder. The Sirhind Feeder was constructed to divert the source of supply of water for 1.7 million acres of area to Ravi and Beas, which were hitherto dependent on supplies from Sutlej. As a result of the execution of these schemes and the supplies available on the completion of the Bhakra Dam, the area irrigated by canals increased from 39.71 lakh acres to 79.62 lakh acres in 1963-64.

with the break up in the two regions as follows:—(Annexure 22)

(In lakh Acres)

	Haryana Region	Non-Haryana Region
1. Gross Cropped Area ..	109.33	113.20
2. C.C.A ..	55.19	76.96
3. Area irrigated (including State tube-wells) ..	30.67	48.95

It is pertinent to note that the area under actual canal irrigation in 1963-64 increased by 21.06 lakh acres in non-Haryana Region as against 18.85 lakh acres in the Haryana Region, even though the need of the Haryana Region was much greater, because of the paucity of rain and sub-soil water in most of the tracts in the region. This fact alone is sufficient to dispel the notion, commonly held, that the development of irrigation in the post-partition period has been largely in the Haryana Region.

Bhakra-Nangal Project

4.14. Even in regard to the Bhakra-Nangal Project, which was mainly, if not exclusively, meant for irrigating the 'barani' land in the Haryana Region, the position changed from time to time and in the final project the Haryana Region got only 55 per cent of the Punjab share of Bhakra waters. In this connection, the Department was asked to give the relevant information and they stated that the Project had undergone changes from time to time and the height of the Dam was eventually much higher than that envisaged in the earlier projects. Actually, four project reports were prepared, i.e., in 1919, 1939—42, 1946 and 1948. The shares of Haryana Region, the Non-Haryana Region and Rajasthan in the four Projects are given at Annexure 23. The position about the total share of Haryana and non-Haryana Regions in the four Projects is given below:—

(C.C.A. in Lakh Acres)

Project	Haryana Region	Non-Haryana Region	Total
1919 ..	23.62	8.27	31.89
1939 42 ..	23.93	9.13	33.06
1946 ..	18.63	14.23	32.86
1948 ..	27.33	22.08	49.41

It will be observed that the share of the Non-Haryana Region in terms of C.C.A. to be covered went up steadily from 8.27 lakh acres in the 1919-Project to 22.08 lakh acres in the 1948-Project, whereas for the Haryana Region it went up only from 23.62 lakh acres to 27.33 lakh acres in the two Projects. The conclusion is obvious that in the final Project, the share of the Haryana Region was, proportionately, much lower than what was originally conceived. Water was given even to Rajasthan for irrigating an area of 9.2 lakh acres, even though the needs of the Haryana Region had not been met up to the desired extent.

Water allowance and capacity factor of channels

4.15. The total area irrigated does not, in fact, give the full picture regarding the actual amount of water received by the cultivators as this is dependent on the water allowance as well as the capacity factor of the various channels. The position in regard to water allowance is as follows:—

(Water allowance in cusecs)

	Haryana Region	Non-Haryana Region
(i) Perennial	2.75 cusecs per 1,000 acres C.C.A. at Distributary Head	Same except in U.B.D.C. where water allowance is 3.5
(ii) Non-perennial	3.5	..
(iii) Restricted Perennial	2.25	.

During verbal discussions in the various districts, it has come to light that pending certain remodellings in a number of tracts, both in the Western Jamuna Canal and the Bhakra area, water allowance is even today only 1.9 cusecs. The intensity of irrigation in the Western Jamuna Canal area ranges from 43 to 50 per cent against 62 per cent intensity in the Bhakra area and 94 per cent in Upper Bari Doab area. The shortage of supply in the Western Jamuna Canal is so acute that the Hansi and Delhi Branches have to run in rotation with each other in almost all the non-monsoon months. The mean capacity factor of the Western Jamuna Canal during Kharif is 51 against .80 of Bhakra Canals and the mean capacity factor

during Rabi is .38 in the Western Jamuna Canal against .72 of Bhakra Canals. The following statement gives the capacity factors on the Upper Bari Doab Canal and the Western Jamuna Canal for four selected months:—

(Statement at Annexure 24)

———		U.B.D.C.	W.J.C.
June	...	0.90	0.51
September	...	0.90	0.57
December	...	0.56	0.35
March	...	0.70	0.39

Greater absorption losses

4.16. Another factor to be borne in mind is that a large part of the area in the Haryana Region, served by the canal system, is very sandy and there are very considerable losses due to seepage. This is particularly true of district Hissar where Bhakra irrigation is yet to be fully developed. In fact, there is need for a graduated water allowance in the various areas, which should specially take this factor into account. It is also to be noted that a number of tracts in the Haryana Region are at the tail-end of the channels and while they do not get even the meagre allowance of water when it is most needed, there is considerable damage during rains when there is excess of water.

Water actually received in U.B.D.C. and W.J.C. tracts

4.17. The result of the operation of these unfavourable factors is that the actual water received in the Haryana Region is much less than that in the non-Haryana Region. This would be clear from a comparison of the water actually received in the Western Jamuna Canal tract against what has

been received in the Upper Bari Doab tract in the years 1962-63 and 1963-64. The position is as follows:—

	U.B.D.C.	W.J.C.
1. C.C.A. in lakh acres ..	12.03	23.06
2. Quantity of water run from—		
(i) October, 1962 to June, 1963 (in million acre-feet) ..	1.80	1.92
(ii) October, 1963 to June, 1964 (in million acre-feet) ..	1.92	2.12

It will be observed that although the area covered by the Western Jamuna Canal was almost double the area covered by the U.B.D.C., the quantity of water actually run in the W.J.C. was only marginally higher than the quantity of water in the U.B.D.C. Put in another way, the quantity actually received per acre in the W.J.C. tract was almost half of that received in U.B.D.C. tract, although the water rate charged from the cultivators was the same as in the Non-Haryana Region. The heavy burden on the cultivators in this tract would be further realised, when it is stated that in addition to this, they are required to pay 'betterment' charges as well.

Overall Position

4.18. The factual position regarding canal irrigation may, now, be summed up. The gross area irrigated in the non-Haryana Region is 59 per cent higher than that in the Haryana Region. 45 per cent of the water from the Bhakra-Nangal Project goes to the non-Haryana Region even though the project was primarily assumed to benefit the Haryana Region. The water allowance in the W.J.C. tract in the Haryana Region is much lower than that on the U.B.D.C. and so is the capacity factor of the channels. Some of the channels have yet to be remodelled to carry the full capacity of water admissible. There are greater absorption losses and lesser water at the tail-ends. Coupled with all this is the fact that there is greater spreading of water by the cultivators in the Haryana Region for irrigating the maximum possible area and it is not difficult to visualize that the water actually received per acre by the farmer in the Haryana Region is far less than that in the non-Haryana Region.

This, then, is the factual position against which the Committee proposes to make its recommendations.

RECOMMENDATIONS

Completion of major and minor irrigation schemes

4.19. The Committee noted that Rs. 8.20 crores were being provided for major and medium irrigation schemes in the tentative Fourth Plan of Rs. 500 crores with the break up as follows:—

(Rupees in lakhs)

Name of Scheme	Total cost	Third Plan anticipated expenditure	Fourth Plan Outlay proposed
W.J.C. Remodelling Extension Projects—			
(a) Gurgaon Canal ..	746.02	223.07	500
(b) W.J.C. Remodelling Project ..	547.00	123.28	150
(c) W.J.C. Feeder Project ..	405.84	244.59	130
(d) Rewari Lift Irrigation Scheme ..	107.28	45.59	40
Total ..	1,806.14	636.53	820

Gurgaon Canal is a flow-cum-lift project which will irrigate 4.04 lakh acres of land in district Gurgaon and 1.06 lakh acres in Rajasthan. Supplies in river Yamuna/Okhla headworks can feed the regular discharge for 100 days only and perennial supplies will have to wait till the availability of water from the Ravi-Beas Complex. The Western Jamuna Project is continuing from the First Five-Year Plan period and envisages the remodelling and lining of the main canal and branches so as to increase water allowance from 1.9 to 2.4 cusecs per thousand acres. Moreover, the Sunder and Bhalaut branches will be converted from non-perennial to perennial and irrigation will be extended to some new areas. The purport of the Western Jamuna Canal Feeder Project is to interlink the Bhakra system with the Western Jamuna Canal system by constructing a channel with a capacity of 2,700 cusecs so that water from the Bhakra storage can be tansferred to the Western Jamuna Canal tract and the Gurgaon Canal area. The

Rewari Lift Scheme, on completion, will provide irrigation by lift to 1.38 lakh acres of culturable commandable area in Rohtak, Gurgaon and Mahendragarh districts.

4.20. In view of the background given in the earlier paragraphs and the absolute need for increasing the supply of water in the Western Jamuna tract, the Committee is strongly of the view that the entire remaining amount of about Rs. 12 crores required for completing these projects should be provided in the Fourth Five-Year Plan.

Tube-wells on the Western Jamuna Canal

4.21. Because of shortage of water in the Yamuna River, the Irrigation Department has prepared a project for the installation of 300 tube-wells, of 2 cusecs each, along the Western Jamuna Canal from Dadupur to Munak for augmenting supplies in the Western Jamuna Canal. The Committee has noted with satisfaction that a decision has been taken recently to instal 25 tube-wells out of these 300 tube-wells in this year. It is of the view that Rs. 2.29 crores required for the completion of this project should be deemed as a 'must' in the Fourth Plan period.

Dam on River Yamuna

4.22. The eventual solution of the Haryana Region in respect of canal irrigation has to be found by building dams on River Yamuna and its tributaries so that water can be drawn in abundance in the Western Jamuna Canal system. The Committee noted that the construction of these dams is in the hands of U.P. and Himachal Pradesh Governments. One such dam site which has already been investigated is at Kasau on river Tons, a major tributary of river Yamuna. It is proposed to construct a 770-foot-high arch dam and a power station of 750 MWH capacity near Kasau, upstream of Kalsi, which is at the confluence of river Tons and Yamuna. Another site is at Kaunch, 6 miles upstream of Tajewala headworks and 9 miles downstream of Paonta in Himachal Pradesh. Still another site is at Chandni on river Yamuna. The whole picture is quite fluid and it is not certain whether the execution of the Kasau Dam will be taken up at all by the U.P. Government in the Fourth Plan period. A sum of Rs. 50 lakhs has, however, been provided by the Punjab Government in its own Fourth Five-Year Plan on an *ad hoc* basis. While nothing is yet settled about

the distribution of the irrigation supplies which may be eventually available due to the construction of the Kasau Dam between the Punjab and the U.P., it is anticipated that it will be possible to irrigate large tracts in districts Gurgaon and Mahendragarh when water becomes available from this source. While there is, thus, no immediate possibility of getting water from this source, the Committee recommends that the Punjab Government should vigorously pursue the matter with the U.P. Government for the early construction of the Dam at Kasau. The Committee feels that, simultaneously, an attempt should be made to secure our appropriate share of irrigation water available from this source. It is further of the view that the Government of India should be approached to appoint an Inter-State Commission for this purpose.

Water available from the Ravi-Beas Complex

4.23. It is, thus, clear that additional water will not be available from river Yamuna in any foreseeable future. We have, thus, perforce to look to water resources which are available in Punjab and are under its direct control. In this connection, it may be stated that 7.2 million acre-feet of water will be available from the Ravi-Beas Complex after the construction of dams at Pong and Dahar on river Beas and Thein Dam on river Ravi. It has already been mentioned that the whole irrigation system in the Punjab is now a common grid and within certain very broad limits, it is possible to take water from any one place to another place in the Punjab. In the context of what has been said earlier, it is necessary that a very substantial portion, if not the whole of this water, should be earmarked for extension of irrigation in the Haryana Region. While, ideally, there would be a case for diverting canal water from areas where sub-soil water already exists, to areas like the Haryana Region, where sub-soil resources are comparatively poor and rain is scanty and erratic, Government should, in all fairness, be able to at least take a decision to the effect that the future available water would be given for the Haryana Region. However, the present position is just the reverse as would be clear from the Government's decision for the distribution of this water, which is as follows:—

	M.A.F.
(1) Extension of Irrigation on U.B.D.C. tract ..	1.835
(2) Chak Andhar tract ..	0.163

		M.A.F.
(3) Eastern Canal (Improvement of capacity factor)		0.232
(4) Makhu Canal	..	0.163
(5) Extension and Improvement of Irrigation on Bhakra and Sirhind Canal areas including removal of shortage	..	4.201
(6) Gurgaon Canal	..	0.307
(7) Sohna Lift Scheme	..	0.133
(8) Western Jamuna Canal (50 per cent intensity)	..	0.104
(9) Delhi Water Supply	..	0.119
Total	..	7.257

According to the information supplied by the Department, its *inter se* distribution between the Haryana and non- Haryana Region would be as indicated below:—

		M.A.F.
Non-Haryana Region	..	4.688
Haryana Region	..	2.569
Total	..	7.257

4.24. The Committee is of the view that the sharing of water between the two regions is not equitable. Water to the extent of 1.835 million acre-feet is proposed to be given in the Upper Bari Doab tract, where the intensity is already as much as 94 per cent and there is abundance of sub-soil water. In fact, the sub-soil water has been rising at an annual rate of 6 inches per year and there is a serious menace of waterlogging in this area. The position in the Sirhind Canal tract is also very favourable. The Committee considers that the bulk of this water must go to the Haryana Region. The Committee is also of the view that the entire supplies available in the Punjab should be treated as one common pool and the water allowance in all parts of Punjab should be on an equitable basis.

Sohna Lift Scheme, stage-II and stage-III

4.25. It needs no repetition that district Gurgaon and district Mahendragarh are among the least irrigated districts, the gross area of crops irrigated as percentage of the total cropped area being 6 per cent in district Mahendragarh and 13.2 per cent in district Gurgaon. For relieving the distress of this area, the Gurgaon Canal Project along with Sohna Lift

Scheme, Stage-I, II and III have been envisaged. Under the Gurgaon Canal Project, areas of Gurgaon Tehsil and Ballabhgarh Tehsil, Nuh, Palwal and Ferozepur Jhirka tehsils up to the foot of the Aravali Hills will be irrigated by flow and low-head lifts and areas on the Sohna Plateau and in the Rewari Tehsil by lifting water by about 300 feet at Sohna. Sohna lift scheme, stage-I, which has been already taken up, will irrigate 1.02 lakh acres up to the right bank of River Sahibi. The second stage envisages extension up to Alwar-Rewari-Dadri metre-gauge railway line covering a gross area of 2.20 lakh acres in district Gurgaon requiring a head discharge of 505 cusecs. The third stage envisages irrigating 1.70 lakh acres of Gurgaon District and 1.15 lakh acres of Mahendragarh District and will require 650 cusecs of water.

4.26. The Project Report on extension of irrigation for the Mahendragarh District prepared by the Irrigation Department envisages extension of irrigation to another patch of 1.10 lakh acres in tehsil Dadri, which is in the grip of frequent failure of crops because of lack of assured rainfall and deficiency in respect of ground water. The Department has proposed irrigating this area by a lift by extending the Dadri distributary of Western Jamuna Canal and this scheme would also need additional water for which a source will have to be found.

4.27. No action is being, presumably, contemplated on the Sohna Lift Scheme, Stage-II and Stage-III, and the Dadri Project on the assumption that water could be made available for these projects only after the construction of the dams on river Yamuna. In view, however, of the uncertain factors regarding the construction of dams on this river, the Committee is strongly of the view that these projects need not wait for the availability of water from river Yamuna, but should be straightaway undertaken and that water should be earmarked for these schemes from the Ravi-Beas Complex. The Committee considers that this will be the only realistic way of mitigating the distress of the two districts in respect of irrigation and work should be started on these projects as early as possible.

Water rates for lift irrigation

4.28. The Punjab Government took a decision sometime back to charge the same rate for irrigation water from State tube-wells as that for canal water. The Committee feels

that there is no reason why the same principle should not be applied for 'lift' irrigation also. The Committee, accordingly, recommends that the rate for lift irrigation should be the same as for canal irrigation.

Lining of canals and water-courses

4.29. It has already been stated that a large part of the Haryana Region, served by the canal system, is very sandy and there are very considerable losses due to seepage. Giving evidence before the Committee, Shri Bansal, Superintending Engineer, Irrigation, Hissar, stated that they must resort to lining in certain regions. He also stated that a scheme, giving details of the channels to be lined and the order in which they may be taken up, was already under the active consideration of the Bhakra Control Board for Hissar areas and that the approximate cost was of the order of Rs. 75 lakhs. Another valuable suggestion made by Shri Bansal was that main water-course in the length of one mile should also be lined to cut down absorption losses in the field. This could be done by way of advancing loans to the cultivator recoverable in easy instalments for the construction of line water-courses.

The Committee commends these proposals and urges that work on these lines may be taken up at an early date.

Minor Irrigation

4.30. The area irrigated from sources other than canal irrigation in the Non-Haryana Region is 21.99 lakh acres whereas in the Haryana Region, it is only 5.55 lakh acres (Annexure 15). The area in the Non-Haryana Region is, thus, about four times of that irrigated in the Haryana Region. A large part of this irrigation comes from tube-wells/pumping sets and ordinary wells installed by the private cultivators.

State Tube-wells and Number of Agricultural Connections

4.31. In order to boost up irrigation in the two regions, tube-wells have been installed by Government. The area covered by the State tube-wells is practically the same in the two regions, this being 1.29 lakh acres in the Haryana Region and 1.39 lakh acres in the Non-Haryana Region. As regards private tube-wells/pumping sets, an idea can be had

from the number of agricultural connections given by the Electricity Board in the two regions. The position of total number of connections as on 31st March, 1965, was as follows:—

(ANNEXURE 25)

		No. of agricultural connections
Non-Haryana Region	..	18,272
Haryana Region	..	9,936

It will be observed that the number of agricultural connections in the Non-Haryana Region is almost double of those in the Haryana Region.

Rural Electrification

4.32. The energising of tube-wells is tied up with the programme of rural electrification. The detailed picture in this regard is given in Annexure 4. In brief, the position is as indicated below:—

Region		Total number of villages/ towns	Villages/ towns electrified	Percentage
Hill	..	4,056	767	19
Non-Haryana	..	11,095	3,217	29
Haryana	..	6,495	1,175	18
Total	..	21,646	5,159	24

It will be seen that as against 18 per cent villages/towns electrified in the Haryana Region, the percentage of villages/ towns electrified in the Non-Haryana Region is 29, thereby indicating a lead of 61 per cent. Except for Rohtak, where the percentage of villages/towns electrified is 34, the percentage of villages/towns electrified in all the other districts in the

Haryana Region is lower than the State average of 24 per cent as indicated below :—

Hissar	... 18
Gurgaon	... 16
Karnal	... 19
Mahendragarh	... 13
Ambala	... 12
Sangrur	... 16

4.33. The percentage of villages/towns electrified, category-wise, is as follows:—

Population range	Hill	Non-Haryana	Haryana	Total (State)
10,001 to 50,000 ..	21.4	86.7	65.5	71.8
5,001 to 10,000 ..	43.3	51.2	42.0	44.4
2,001 to 5,000 ..	33.7	40.0	31.5	35.5
1,001 to 2,000 ..	28.3	35.3	20.8	29.2
Less than 1,000 ..	18.1	27.4	14.4	21.80

It will be observed that in each of the categories, the percentage of villages/towns electrified is much lower in the Haryana Region than that in the Non-Haryana Region. While the non-Haryana region has a lead of 32 per cent in respect of villages/towns with population of 10,001 to 50,000 and 22 per cent lead in respect of localities with a population of 5,001 to 10,000, the lead is higher as we go down to smaller villages/towns so that for villages/towns with a population of less than 1,000, the percentage of villages/towns electrified in the Non-Haryana Region is almost double of that in the Haryana Region.

4.34. Although one reason why the Haryana Region is lagging behind in the matter of development of minor irrigation is the inadequacy of sub-soil water, it is undeniable that the lack of electrification has also contributed a great deal to the present state of affairs. In fact, in certain areas water is so deep that it is not economical to draw it out except by pumping sets/tube-wells.

4.35. From the facts given earlier, it has become clear that even though concerted effort is necessary for extending canal irrigation in the Haryana Region, there will still be very wide gap in the irrigation needs of the area. In any case, it will be sometime before waters from the Ravi-Beas Complex and the dam on river Yamuna would be available. In this context, it is absolutely necessary that something substantial and urgent should be done with regard to irrigation in the short-term period as well. This can be done only by having a massive programme of minor irrigation and by providing the wherewithals for the same. In spite of the fact that water in a considerable part of the areas is either not sufficient or is brackish, there are nonetheless a number of tracts, where sub-soil water is available in sufficient quantity. The whole of the district Karnal except the South-Western tip of Assaund and Rajaund is well suited for this purpose. In Hissar, the area along river Ghaggar and in tehsil Hansi along the Western Jamuna Canal has great potentialities. It has been estimated by the Hydel Investigation Circle that about 666 pumping sets can be installed along Dohan and Krishnawati Nadis in district Mahendragarh, and about 1,634 pumping sets can be installed in district Gurgaon, in the area around Gurgaon proper, in the Sahibi Nadi area and on the western side of tehsil Rewari. The Jagadhri area in Ambala District has also great potentialities.

4.36. An effort has, accordingly, to be made to tap sub-soil water in the Haryana Region to the maximum possible extent. The Committee is of the view that an effort should be made to bring at least 10 lakh acres of land under this type of irrigation. The cost of irrigation in the Punjab generally is about Rs. 200 per acre, but in areas of the Haryana Region, the cost would be higher and may range between Rs. 300 and Rs. 400 per acre. Accordingly, a sum of Rs. 30 to Rs. 40 crores would be required for this purpose.

4.37. The Committee strongly recommends that the Government should provide this amount during the Fourth Five-Year Plan. In any case, it is of the definite view that at least 50 per cent of the total tentative allocation of Rs. 20 crores for minor irrigation should be provided for the Haryana Area. As the cost of putting a tube-well/pumping set in the Haryana Area is much higher than that in the Non-Haryana

Region, the Committee further recommends that an incentive should be given by subsidising the cost of tube-wells/pumping sets to the extent of 25 per cent.

4.38. The extension of minor irrigation is to a large extent dependent on the rapid extension of rural electrification. Indeed, rural electrification is one of the surest means of economic growth in the rural countryside. It has already been noted that the Haryana Region is lagging far behind the Non-Haryana Region in the matter of rural electrification. The electrification in the Non-Haryana Region is 61 per cent higher than that in the Haryana Region. The number of agricultural electric connections in the Non-Haryana Region is also almost double than those in the Haryana Region. The Committee feels that this deficiency in the matter of rural electrification must be made up at the earliest possible date and concerted efforts should be made to bring the Haryana Region at par with the Non-Haryana Region.

4.39. As stated earlier in the report, the percentage of towns/villages electrified in the Haryana Region is 18 as against 29 in the Non-Haryana Region. There is, thus, a lag of 11 per cent. The total number of towns/villages in the Haryana is 6,795 and if we are merely to cover the gap of 11 per cent, the total number of towns/villages which would require electrification would come to about 750. On a rough basis, a sum of Rs. 3 crores would be required for removing the existing disparity between the two regions in the matter of rural electrification.

4.40. Taking the existing situation in view, the Committee recommends that special weightage should be given to the Haryana Region in the matter o frural electrification. It is also of the view that an attempt should be made in the Fourth Five-Year Plan to electrify all towns/villages with a population of 2,000 or above. In areas with large potential in respect of sub-soil water and scope for power-based industries, electricity should be extended irrespective of popuation criteria. In view of the great disparity presently existing between the two regions, the Committee also recommends that at least 50 per cent of the funds provided for rural electrification during the Fourth Five-Year Plan should be specifically earmarked for the Haryana Region.

Trial bore and provision for Rigs

4.41. Apart from enabling the people of the area to put up tube-wells/pumping sets themselves in existing areas, it is of great importance that the whole of the region should be thoroughly scanned for sub-soil water and a detailed plan prepared showing concretely the areas where the sub-soil water existed as also the quality of water and depth at which it was found. The Committee feels that it is absolutely necessary that a large number of trial bores should be made in various tracts to find out if the sub-soil water exists. Power rigs should be utilised to undertake boring at great depths and the assistance of the Exploratory Tube-wells Organisation should be sought for this purpose.

4.42. While giving evidence before the Committee, the Agricultural Engineer, Ludhiana, explained that his Organisation was assisting the farmers in respect of boring for tube-wells and three of his seven circles under the charge of Supervisors were in the Haryana Region; at Ambala, Gurgaon and Hissar. He stated that he had three power units of the percussion type and a number of hand-operated units working in the Haryana Region. He mentioned that there were two schemes, one on the plan side for trial bores for new areas and no charges were levied from the cultivators if the bores were not successful, but the amount on this account was very meagre, being only Rs. 2 lakhs for the Third Plan period, and only three bores were undertaken in the Haryana Region in the recent past. The bulk of the work, he stated, was being done under the Non-Plan Scheme under which farmers were required to pay even when the bore was unsuccessful. He further stated that for an average type of bore of half a cusec involving a depth of 300 feet, the cost of putting the tube-wells might be in the neighbourhood of Rs. 10,000.

4.43. The Haryana Development Committee is of the view that because of the great importance of tapping sub-soil water in the Haryana Region, the scheme for making trial bores should be very much expanded during the Fourth Plan period and a number of power rigs should be provided for the Haryana Region. These should be made available to the public on easy terms and the cultivator should not be made to pay anything in case the trial bore is not successful. In order to push up the work at a faster pace, a separate Agricultural

Engineer should be provided for the Haryana Region and he should maintain a nucleus organisation in each of the districts in the region for expanding this programme.

Irrigation by other means

4.44. Under this head, it is proposed to consider irrigation by bunds, seasonal streams and drains, etc., as large areas in the Haryana Region are under this type of irrigation. In district Karnal, there are numerous seasonal streams such as Nai, Chautang, Rakshi and Umle, which have considerable water during the rainy season and similar is the position with regard to district Ambala, particularly tehsils Jagadhri and Naraingarh. Inundation canals like the Saraswati Canal have existed for some time. Of late, river Ghaggar has been having a lot of water, which can be utilised with advantage in districts Karnal and Hissar. In Gurgaon District, the only area in Rewari Tehsil which is generally free from drought conditions is the area around river Sahibi and large areas in tehsil Ferozepur-Jhirka along the Landoha stream are being irrigated by the spreading of its water. The Aravali Hills in district Gurgaon provide a lot of catchment area and there are a number of bunds and lakes which help in providing some irrigation and charging the sub-soil water. Similar is the case in distrct Mahendragarh which gets water from Dohan and Krishnawati Nadis.

4.45. A stage has been reached when a more systematic effort should be made for utilising the water available in the streams and drains. At a number of places, this can be done by constructing diversion channels but at other places lifts will be necessary. While giving evidence before the Committee, Shri A. L. Fletcher, Financial Commisioner, Revenue, who was also the Chairman of the State-Level Committee on Drainage Schemes, emphasised the need for proper co-ordination between the drainage and the irrigation sides and suggested that the water in the drains should be diverted to the irrigation channels wherever possible. Shri Fletcher gave a list of schemes for utilisation of flood water for irrigation and other purposes and this is at Annexure 26. Dr. Uppal, Director, Land Reclamation, Irrigation and Power Research Institute, Punjab, has suggested the diversion of water in drain No. 8 to tehsil Dadri and diversion of Ghaggar water in the Shatrana, Guhla and Rangoi tract. Some of the schemes proposed by Dr. Uppal

are given in Annexure 27. Although these schemes are for small areas, these can be of great importance for providing irrigation facilities in some of the areas where it is badly needed.

4.46. Another very useful experiment being conducted by Dr. Uppal in tehsil Rewari and district Mahendragarh is to study the possibility of improving the quality of underground water through charging with sweet water from the seasonal streams. Accordingly, a diversion bund has been constructed on the Sahibi Nadi in tehsil Rewari, about a mile upstream of village Jarthal to feed an experimental channel of 80—100 cusecs leading to the town of Rewari. Water from the diversion channel during the flow period of 1962 and 1963 was utilised for spreading in selected areas with a view to charging the brackish ground water with sweet water of river Sahibi. Similarly, a bund has been constructed on Dohan nadi near village Hamidpur and on Krishnawati Nadi near Narnaul, and experimental channels have been constructed to charge the sub-soil water with sweet water from these nadis. In fact, Dr. Uppal has even suggested the taking of the water from Dohan nadi through a channel right up to Loharu. These schemes are still at the experimental stage but the indications are that this technique would prove to be beneficial. These experiments will have to be carefully watched and extended, if considered useful and worthwhile.

Districtwise position regarding Irrigation

4.47. The general problems of the various districts have been covered in the preceding paragraphs and it is not necessary to repeat them again while giving the districtwise position. At this place it is only proposed to refer to some of the special problems and potential of the districts in the Haryana Region in respect of irrigation from various sources.

HISSAR DISTRICT

Tehsil Bhiwani

4.48. The most deficient area in respect of irrigation is tehsil Bhiwani, where, out of a total area of 6.25 lakh acres, only 20,207 acres are irrigated by canals. This being so, the area often experiences drought and famine conditions.

4.49. The canal irrigated area at present is being served by six minors, namely, Dang, Gujrani, Pahluwas, Bhurtana,

Dava and Bhiwani. All these minors can be extended. During verbal discussions, Sub-Divisional Officer (Civil), Bhiwani, strongly emphasised that this should be done immediately to bring more areas under irrigation. He apprised the Committee that the Superintending Engineer, Western Jamuna Canal, was already preparing a scheme for the extension of Gujrani minor and this would further irrigate an area of 16,000 acres in 14 villages and that work could be taken up on other minors if funds were made available. He also suggested that a channel should be constructed from Hansi to irrigate certain areas of Bhiwani, and, this could be done by lifting water by about 25 ft. in two to three stages. Shri Dina Nath, Executive Engineer, Western Jamuna Canal, stated before the Committee that more water could be supplied to tehsil Bhiwani by executing the following lift schemes:—

(1) Khanak Lift Scheme,

(2) Bhutana Lift Scheme,

(3) Chhabar Lift Scheme,

(4) Bagana Lift Scheme, and

(5) Kairu Lift Scheme.

All these schemes would approximately cost Rs. 20 to 30 lakhs and will irrigate about 20 thousand acres of land in addition to supplying water for drinking.

4.50. The Committee has considered these proposals and is of the view that serious attention must be given to the development of irrigation potential in Bhiwani and Loharu area. The Committee would also like to lay special emphasis on the need for extending rural electrification in Loharu sub-tehsil, where it is stated to have a sweet-water belt.

Sub-soil Water

4.51. From the point of view of minor irrigation, the belt along the River Ghaggar from Tohana to Ottu, is the most promising. Sub-soil water is found in abundance in Ratia, Bhunar and northern part of Fatehbad tehsil. One village Ladowas, in this area, has 30 to 40 tube-wells. Tehsil Hansi has also got plenty of water except the area in the south, and

in fact, the area between Hissar Major and Petwar Distributary is seriously waterlogged. The Committee is, accordingly, of the view that electrification in these areas should receive a high priority.

4.52. The Irrigation Department has suggested putting up 100 State tube-wells in the area along River Ghaggar. The Committee recommends this proposal to Government and suggests that work should be taken up for the installation of these tube-wells during the Fourth Plan period.

4.53. Sub-soil water is available in about 40 villages in Rania Block, which is near Rajasthan. The local representatives strongly pleaded that electricity should be got from the Rajasthan side for installing tube-wells and pumping sets in this area. The Committee considers that the matter should be taken up with the Rajasthan Government and equivalent power should be supplied to the latter elsewhere if necessary.

Utilisation of water of River Ghaggar for the Rangoi Tract

4.54. This tract comprises of an area of 1.5 lakhs acres extending between River Ghaggar and the Fatehabad Distributary, and in olden days, it used to be fed from an inundation canal known as Rangoi canal. The area is now covered by canal irrigation from the Bhakra system but the intensity of irrigation is low. Under this scheme, prepared by Dr. Uppal, it is proposed to take out a canal from the existing site with a discharge of 850 cusecs. The channel will provide kharif irrigation and will reclaim an area of about 50,000 acres, and is, accordingly, recommended by the Committee.

Canalisation of River Ghaggar below Ottu

4.55. At present 50 villages are being fed from flood waters beyond Ottu, but during the rainy season the water from river Ghaggar spreads in a considerable part of the area causing serious damage. The scheme is already under execution and the same should be completed as early as possible.

ROHTAK DISTRICT

Lift Irrigation in Sahlawas Area

4.56. Under the Rewari Lift Scheme, 95,000 acres of high area in southern part of Jhajjar tehsil has been already brought under lift irrigation, but there is another area of 1.40

lakh acres lying in Nahar and Salahwas Blocks of Jhajjar tehsil which is without irrigation. This would require 350 cusecs of water and involves a lift of 85 feet. The Committee considers that the provision of irrigation facilities in this area should be a matter of major priority.

Sub-soil Water

4.57. According to the Agricultural Engineer, Boring, Punjab, the district can be divided in the following three zones:—

(a) *Parts lying on east of Delhi Distributary on Western Jamuna Canal.* The water level is up to 15 feet from the ground surface. The wells and tube-wells can be sunk successfully at 35 feet to 300 feet from the ground surface.

(b) *Central Western parts* .—The water level is 5 feet to 25 feet from the ground surface. The water at shallow depth is suitable for irrigation purposes whereas it is saline in the deeper layers. Construction of small tube-wells or open percolation wells is successful.

(c) *Western parts of the district*.—The depth of sub-soil water level ranges from 25 feet to 80 feet from ground surface. Generally water in deeper layers is brackish or saline.

Minor irrigation programme can, accordingly, be stepped up in tehsil Sonepat and in certain patches in the central western part, and power should be provided in these areas on priority basis.

4.58. According to the Hydel Investigation Circle, there is abundance of water in the area between G. T. Road and Delhi Branch of the Western Jamuna Canal. The Department has suggested the installation of 100 state tube-wells of 2 cusecs each in this area. The Committee suggests that the scheme should be taken up during the Fourth Plan period for implementation.

Utilisation of water in Drain No. 8

4.59. It is proposed to take some water to district Mahendragarh from a place near village Bakrala. The possibility of utilising water from this drain by flow and lift irrigation in parts of district Rohtak should also be considered. The

water from Bhindawas depression can be put in the Sahlawas lift channel of Rewari Lift Scheme and about 332 cusece of water can be used in this manner. The cost of the scheme is expected to be Rs. 5 lakhs and the same should be duly executed.

GURGAON DISTRICT

Agra Canal

4.60. Supplies in the Agra Canal, which is under the control of the U. P. Government, are neither adequate nor timely. Although the gross area served by the canal is 2.25 lakh acres, the area actually irrigated annually is only about 48,000 acres. The water rate charges are also double than those in the rest of the State. During discussions, the local representatives stated that they had to undergo various hardships so much so that they were required to pay water rate even when their lands were flooded. In view of this, there is a unanimous demand in the district for urging upon the U.P. Government to give over administrative control in the Punjab area covered by the Agra Canal to the Punjab Government. The water rates should also be brought down to the same level as prevailing in the Punjab, and Government should provide subsidy to the extent of the difference, if necessary.

Sahibi Nadi

4.61. Sahibi Nadi is the life-line of tehsil Rewari, so much so that the only tract which remains free from drought and famine is the Sahibi tract. The people of the area are greatly agitated on the proposal of the Rajasthan Government to construct a dam at Hasora, across the river Sahibi, and it was urged that before the dam is built by the Rajasthan Government, it must be ensured that the Punjab gets the same quantity of water as hithertofore.

4.62. The question of putting up a dam on the Sahibi Nadi in the Punjab area came before the Committee but consensus of opinion seems to be against such a proposal as the Sahibi Nadi charges the sub-soil water along its two banks in the entire tehsil, and that there is a possibility of putting up tube-wells and pumping sets in about 80—90 villages in this area. During discussions, the Committee was informed that the project for electrification of 95 villages in this tract also stood sanctioned and it was

urged that its implementation should be take up as early as possible. In order to save villages which have been affected on account of flood action from Sahibi, it was suggested that ring bunds should be put up in 10—15 villages which are worse affected. These are Bawal, Bariti, Palwal, Ror, Gurawara, Balawas, Khara, Jarthal, Railwas, Nikhri, Khaliawas, Khar-khara, Wasani, Khalilpur, etc., etc. The railway tract near Khalilpur breaches during the rainy season because of obstruction caused by the railway line. A railway bridge should be constructed there.

Minor Irrigation

4.63. Apart from the area around Sahibi Nadi, in tehsil Rewari, which is pre-eminently suited for the installation of tube-wells, pumping sets, etc., there are a number of other areas in district Gurgaon which can be taken up where sufficient sub-soil water exists. In Nuh and Ferozepur Jhirka, there is a sweet-water belt along the two ranges of Kala Pahar and Mehrauli range in the width of 2 to 3 miles. Test bores in Taoru and Hathin areas have been successful and water is found fit for irrigation. The water is also sweet along Landoha stream which traverses long distances in Nuh and Ferozepur Jhirka. There is plenty of sub-soil water in Palwal and Ballabhgarh tehsils and the Khadar area is the most promising. Tube-wells can be, particularly, installed in a large tract around the Gaunchi drain. There is, thus, a considerable scope for extending minor irrigation programme intensively in large tracts in Gurgaon District. Since the district is devoid of canal irrgation, it must get enhanced attention in this regard and power should be provided in these areas as a matter of highest priority.

4.64. The Irirgation Department has suggested the installation of 130 State tube-wells, each irrigating 200 acres, in the areas mentioned above. The Committee considers that this will be one way of augmenting the irrigation facilities in the district and commends the same for early implementation.

Bunds

4.65. There are a large number of bunds in district Gurgaon and although the area actually irrigated by these

bunds is small, they help a great deal in charging the sub-soil water. Irrigation from wells, is, in fact, resorted to on a very large scale and there are as many as 19,000 wells in the district. The administrative control over these bunds has been passed over to the Zila Parishad which was earlier with the District Board of Gurgaon. These are not being properly maintained and instead of an Executive Engineer, only one S.D.O. (Bunds), is provided who stated before the Committee that only Rs. 2 lakhs were being provided for the maintenance of over 90 bunds and as such he was not able to pay adequate attention. He was further of the view that a sum of Rs. 30 lakhs was required for constructing new bunds and another Rs. 40 lakhs for remodelling the older ones. The provision of about Rs. 70 lakhs can, thus, go a long way in providing additional irrigation from bunds and charging the sub-soil water in large tracts in district Gurgaon. The amount for the maintenance of bunds also needs to be enhanced.

4.66. Giving evidence before the Committee, Dr. Rama Rao, Adviser, Soil Conservation, Punjab, stated that there was a great need of co-ordination between his Organisation and the one supervising the work of bunds in district Gurgaon. His idea is that an attempt should be made to absorb as much water in the soil 'locally' as possible and the catchment of the bunds should be restricted only to areas where the water cannot be so absorbed. The Committee agrees with this view and suggests that the work connected with the maintenance and construction of bunds should be closely tied up with the Soil Conservation Programme in district Gurgaon.

KARNAL DISTRICT

Sub-Soil Water

4.67. The sub-soil water in the district is quite high, excepting on the south-western side near Assand and Rajaund. The quality of underground water available in the district is not uniform and at places brackish water is found. The promising area from the point of view of tube-wells is the area falling on the eastern side of Thanesar Tehsil, Karnal Tehsil and the Panipat Tehsil. According to the investigations, carried out by the Irrigation Department, pumps can be installed in open wells in areas shattered by drains and creaks, to serve 56,640 acres. There is a great clamour in the district for electric connections for tube-wells and pumping

sets, and the Committee was told that applications for as many as 700 tube-wells are pending. The district is ideally suited for a 'crash programme' for minor irrigation, and concerted action, is, therefore, required to extend rural electrification in almost the whole of district Karnal.

4.68. As many as 424 State tube-wells have been installed in this district for providing irrigation facilities. 252 State tube-wells have been installed under the Jagadhri Tube-wells Scheme for augmenting supplies in the Western Jamuna Canal and 300 tube-wells have been earlier proposed for the purpose in the area stretching from Dadupur to Munik. The Hydel Investigation Circle of the Irrigation Department has suggested a lump-sum provision of 100 State tube-wells in the eastern part of Panipat Tehsil. This scheme should be taken up for execution during the Fourth Plan period.

Utilisation of water from Streams, Drains, etc.

4.69. As already stated, there are a number of schemes for the utilisation of water of seasonal streams, drains, etc., and these have been given in Annexure 26. It is proposed to utilise the waters of Ghaggar, Saraswati, Markanda, Rakshi, Chutang, Nai Nala, Tangri, etc., either by constructing new channels or by putting the water in one of the existing channels and then utilising it through the existing irrigation system. While these schemes can be of great assistance in saving certain areas from flood damage and in providing irrigation facilities to other areas, the scheme for canalisation of Saraswati, down-stream of Bibipur lake, came up for special attention in discussions with local representatives. Under the scheme, about a crore of rupees is proposed to be spent to raise the banks of Saraswati down-stream of Bibipur lake so as to save the adjoining areas from the action of flood waters. One of the banks of this drain has been recently raised with the result that the area lying behind this bund got no flood irrigation and one serious consequential result was that agrcultural production in this area went down steeply. The Deputy Commissioner, Karnal, therefore, strongly urged that further execution of this drain should be given up. The matter requires to be examined by all concerned in greater detail. It, however, needs to be emphasised that while taking up any flood protection works, the irrigation needs of the area should also be duly kept in view.

MAHENDRAGARH DISTRICT

Dohan and Krishnawati Rivulets

4.70. During oral evidence before the Committee, it was stated by some local representatives that bunds were being constructed on the Dohan and Krishnawati nadis in the Rajasthan area. As the two rivulets have a crucial importance for the economy of the district, it will have to be ensured that district Mahendragarh continues to receive the same quantity of water as hithertofore and that the immemorial rights in respect of water from these two sources are duly preserved.

4.71. Water is found in abundance in wells along the Dohan and Krishnawati rivers. At present, there are 388 wells, used for agricultural purposes along Krishnawati Nadi and 302 wells along Dohan Nadi. Out of these, 373 wells are stated to have ample supply of water. These can be fitted with pumping sets. According to the Hydel Investigation Circle, another 300 wells can be dug in the area and fitted with pumping sets. Power needs to be provided in this belt on a priority basis.

4.72. In line with what is being done in tehsil Rewari, bunds are being constructed on Dohan and Krishnawati Nadis for charging sub-soil water in the area. The maximum discharge of Dohan, though for a very short period, is around 2,000 cusecs, and it is proposed to head up flood water of Dohan near Hamidpur and to bring it to Narnaul by constructing a channel off-taking upstream of the bund area. Regulator will be provided at the head of the channel so as to utilize water only to the extent necessary. A spill-way and abetments consisting of stone-wire crates are being provided to pass the flood water and the remaining portion of the bund is an earthen one. Water will be similarly diverted in the Narnaul area from the Krishnawati Nadi. If the experiment is successfull, it is proposed to put up another bund on Dohan Nadi down-stream and take water right up to Loharu in a flow channel. These experiments have to be carefully watched and should be extended, if proved successful.

Utilisation of water from Drain No. 8

4.73. A scheme to divert 550 cusecs of water from Drain No. 8, near village Bakrala in District Rohtak has been prepared by Dr. Uppal to provide irrigation to the dry lands of

tehsil Dadri and to charge sub-soil water in this area. So far only about Rs. 10 lakhs have been spent out of the total cost of Rs. 46.75 lakhs and a channel of about 100 cusecs has been dug out. The experiment has to be carefully watched as there is some apprehension about waterlogging because of the presence of kankar layers just under the top soil, and can be extended if proved successful.

Minor Irrigation

4.74. The first essential in this connection, as far as the district of Mahendragarh is concerned, is to scan the entire district, even at great depths, for sub-soil water. Altogether trial-boring has been done at about 21 places in the district, but mostly the water has been found to be unfit for irrigation. The people of the district, however, feel that trial bores have not been made at the right places and that there is urgent need for taking up more work at other places.

4.75. As already mentioned, boring work is being done by the Organisation of the Agricultural Engineer, Ludhiana, who has two schemes—one on the Plan side under which nothing is charged if the bore is unsuccessful, and the other is on the non-Plan side where the farmer is required to pay even if the bore is not successful. The Organisation is a small one and there is only one Supervisor stationed at Gurgaon, who looks after Mahendragarh District also. The Committee considers the present position to be entirely unsatisfactory and recommends that one officer, with adequate organisation and resources, should be posted at Mahendragarh, and a very large number of test-bores should be undertaken in the district. The farmer should not be required to pay in case the bore is unsuccessful and even for successful bores, subsidy to the extent of at least 25 per cent should be given.

4.76. Apart from having trial bores in the new area, there is a great need for deepening of wells in Mahendragarh District and specialised equipment is required for this purpose. It is necessary that the requisite equipment is duly provided and the work taken up in all earnestness.

4.77. The overall position, as presently known, is that the sweet-water belt extends from the western part of Dadri

tehsil and the whole of Narnaul and Mahendragarh tehsils, except some isolated patches in this big belt. The area most promising is that of Nangal Chaudhari, Kanina and Ateli. The Committee was told that abundant water is available in villages Bhankari, Jodhapur, Badopur, Kaloti Kalan, Kaloti Khurd, Hamidpur, Mehropur, where there seems to be an underground river. There is already an electrification project for the Bawania group of villages in district Mahendragarh. Because of the depth at which the water is found, the cost of lifting water by the traditional means is very high. Since the area under irrigation is so little and the cost of lifting sub-soil water is so high, water is greatly-priced commodity in this district and there seems to be special justification for giving the topmost priority to electrification in sub-soil belts in Mahendragarh district.

Basin Irrigation

4.78. Besides Krishnawati and Dohan, there are small streams which originate from local hills and then either die out in the fields or join one or two main streams. Such streams have hardly a catchment of more than ten square miles and the discharge totally depends on the rainfall in the area and the nature of the soil. Although the area directly irrigated is very small, they greatly help in changing sub-soil water. It is, accordingly, appropriate to construct bunds on these local streams wherever possible. The possible sites are at Dhani Cheema Wali, Masnoota, Ganwari Jat, Durgu Nangal, Kalba, Attela Kalan, Kheri Bara.

AMBALA DISTRICT

4.79. The areas included under the Haryana Region are tehsils Jagadhri, Naraingarh and Ambala. There is no canal irrigation in tehsil Naraingarh and out of the total cultivated area of 1.54 lakh acres, only 1,235 acres is 'chahi' and 2,740 acres is 'abi'. About 20 villages of tehsil Ambala are irrigated by canal. The overall irrigation percentage is about 6.6, which is about the same as for district Mahendragarh though the area is not so badly hit because of moderate rainfall, particularly in the foot-hills.

Ghagger Dam

4.80. An attempt has to be made to increase the canal irrigated area in this district. A 215-foot-high earthen dam,

estimated to cost about Rs. 9.2 crores is proposed to be constructed on river Ghagger near Chandi Mandir and besides preventing floods would irrigate certain areas in district Ambala. Provision was made in the Third Five-Year Plan, but no work has yet been started. The project needs to be expedited.

Minor Irrigation

4.81. The Jagadhri and the Barara areas are the most promising from the point of view of minor irrigation. In Tehsil Naraingarh, sub-soil water is available in areas around Sadhaora and Naraingarh. A good number of tube-wells/ pumping sets have been installed. There are 31 tube-wells and 20 pumping sets which are mostly in Naraingarh. There is scarcity of water in Raipur Rani Block towards Trilokpur and Morni. According to the Hydel Investigation Circle of the Irrigation Department, the Ambala, Mulana and Raipur Rani area of about 48,000 acres on the eastern side of Ambala town is quite successful from the point of view of tube-wells.

Flood Irrigation

4.82. There are a number of seasonal hill streams like Som, Pathrala, Chautang and Rakshi, which pass through tehsil Jagadhri. Roon, Baigna and Markanda, etc. cover tehsil Naraingarh. Some local representatives appeared before the Committee and suggested that bunds should be put across the streams for providing controlled irrigation. The general consensus of opinion was against such a move as it might result in damage from floods in certain areas and may deprive other areas from valuable flood irrigation which had been resorted to for a long time.

Jagadhri Tube-well Scheme

4.83. A number of State tube-wells have been installed in tehsil Jagadhri for augmenting the supplies in the Western Jamuna Canal. While the effect of these tube-wells has been generally beneficial to the area which has a high water table, during discussions with local representatives of the district, it was suggested that these could serve dual purpose and water from these tube-wells should be made available to the local cultivators in winter months when the water level in the area fell very low. These suggestions would require serious consideration.

SANGRUR DISTRICT

4.84. Only tehsils Narwana and Jind fall in the Haryana Region. The culturable area of these two tehsils is 6.23 lakh acres out of which 2.36 lakh acres is irrigated by canals and just over 6,000 acres by other means. Canal irrigation has developed in this area in recent years and the water allowance in some areas is still 1.9 cusecs per thousand acres.

Canal Irrigation

4.85. Barwala Link Project is under execution for diverting Bhakra waters from Khanauri to the Sirsa Branch of the Western Jamuna Canal. This will be only a link channel which will not irrigate the adjoining areas. There is a unanimous demand from the people of the area that the possibility of giving some irrigation water to the area in Narwana tehsil from this link should be seriously considered.

Minor Irrigation

4.86. 247 pumping sets and 167 tube-wells are in operation in Jind tehsil, and only 2 pumping sets and 50 tube-wells are in operation in Narwana tehsil. In most of Narwana tehsil, water is brackish and many efforts at different places have been made by test boring by the people of the area, but in vain. There is, however, scope for extending minor irrigating programme in Kalayat Block of tehsil Narwana, particularly, in Haripur, Sangan, Dhanauri, and Barta area. There is plenty of water on the eastern strip along the Hansi branch of the Western Jamuna Canal and there is scope for extending minor irrigation programme in Jind Block of Jind tehsil as well. Power needs to be extended in these areas on a priority basis.

Betterment Levy*

4.87. There is another aspect of the case to which the Committee would like to draw the pointed attention of the Government. It has also already been mentioned in para 4.17, that although the area covered by the Western Jamuna Canal

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*The official members of the Committee are not associated with the observa tions made in this regard.

in the year 1962-63 and 1963-64 was almost double the area of the U.B.D.C. the quantity of water actually run in the Western Jamuna Canal was practically the same as that in the U.B.D.C. Put in another way, the quantity actually received per acre in the Western Jamuna Canal tract was almost half of that received in the U.B.D.C. tract, although the water rate charged from the cultivators was the same as in the Non-Haryana Region. Under the cricumstances, it seems absolutely unjustifiable that apart from paying the same water rate for half the amount of water, the cultivators in the Western Jamuna Canal tract should be required to pay betterment charges as well.

4.88. The Western Jamuna Canal Remodelling Project was framed in 1954 for an amount of Rs. 301.93 lacs but was subsequently revised to Rs. 2,685.60 lacs in 1959. The unproductive gap of the revised project was shown as Rs. 1,158.84 lacs. According to the productivity index fixed by the Government of India, the value of the crops should be 1.5 times the cost incurred on the project. This project should have been productive but it has been burdened with unnecessary and irrelevant schemes which have no bearing on this project.

4.89. Jagadhri Tube-well Project was sanctioned in the year 1949 for a sum of Rs. 41.79 lacs under Minor Irrigation Schemes and 256 tube-wells were installed on Western Jamuna Canal. This project has been accounted for towards the cost of the Western Jamuna Canal Remodelling Project. Similarly, the various works sanctioned prior to the framing of Western Jamuna Canal Remodelling Project of 1954 under Grow-More-Food Scheme amounting to Rs. 66.64 lakhs have also been included in the cost of the remodelling project. Certain works of extension and improvement such as remodelling of head works, remodelling of escapes, provision of silting tanks and silt rejectors etc. have also been accounted for towards the cost of the remodelling project.

4.90. In case of U.B.D.C., all such works have been charged to Grow-More-Food or Extension and Improvement Schemes and financial forecast so adjusted that no betterment levy is necessary. The remodelling of head works on U.B.D.C., remodelling of main canal, construction of silt rejectors etc. have been charged to a project of Madhopur-Beas Link, the cost of which has been charged to Rajasthan State. Intensive

remodelling works for bringing new areas under irrigation and for improvement in water allowance, have been executed on the U.B.D.C., system and in fact the whole canal system has been overhauled but the expenditure has been so arranged that the cultivators have not been required to bear the burden of betterment levy.

4.91. If we carefully go into the financial returns from the Western Jamuna Canal, we will find that it has been a paying proposition and as such there is absolutely no justification for imposing betterment levy which should come in force only when the capital cost exceeds the revenue earned. Government have already realized a sum of Rs. one crore in the shape of betterment levy from the cultivators which is not justified at all. C.P.W.C. has raised numerous objections on Western Jamuna Canal Remodelling Project of 1959 and have asked the Punjab Government to recast the whole project on a realistic basis. The Committee is, accordingly, of the view that the whole matter should be gone into in detail and betterment levy imposed in the Western Jamuna Canal tract should be withdrawn as early as possible.

Flood Control, Drainage and Anti-waterlogging

4.92. The problem of floods in the Haryana Region is an acute one due to the fact that there are no natural outlets for excess water during rains. The extent of the damage caused in the various districts of the Haryana Region would be clear from the following statement:—

(In lakh acres)

Districts	*Area damaged*		
	1960	1962	1964
1. Sangrur ..	4.99	1.34	2.15
2. Karnal ..	.62	3.80	0.94
3. Hissar ..	0.78	0.71	0.22
4. Rohtak ..	3.24	0.11	4.26
5. Gurgaon ..	0.51	0.03	0.18

4.93. The Haryana Region falls into two tracts, namely, Ghaggar tract and the Western Jamuna Canal tract. Districts Hissar, Sangrur and most of the Kaithal tehsil of Karnal

District fall in the Ghaggar tract while the rest of the districts are in the Western Jamuna Canal tract. The following are the main problems of the various districts.

KARNAL

4.94. (i) Panipat Tehsil is served by a number of drains and the water from these drains eventually finds its way into diversion drain No. 8. It has not been possible to remodel and activise these drains because the work on diversion drain No. 8 has yet to be completed.

(ii) The Kaithal town and the surrounding villages constitute the problem area of the district. It is proposed to construct 3 drains, i.e., Kaithal, Pondri and Amin for the relief of the area. Out of these, only Kaithal drain is under construction. Work on the other two, i.e., Pondri and Amin drains could not be undertaken because they have their outfalls in river Ghaggar and unless arrangements are brought about for the disposal of the Ghaggar water below the Ottu, it will only aggravate the situation in that area.

(iii) The Saraswati Drain which is to have, ultimately, a capacity of 16,000 cusecs is, at the present, dug only for 3,000 cusecs capacity with the result that areas below the Bibipur Lake get flooded whenever the pressure on this reservoir is released.

ROHTAK

4.95. The major problem is in the Jhajjar area. Water stands in vast area inflicting great damage to crop and property. Water from the upper reaches in District Karnal and District Rohtak finds its way to the depressions in tehsil Jhajjar from the northern side even though diversion drain has been constructed near Gohana to carry out a part of the surplus water. From the western side it is joined by the Sahibi Nadi from Rajasthan. The water is carried through a cut to the Najafgarh Jheel and from there through regulators in Dhansa bund, it goes to river Yamuna through Delhi territory. Satisfactory arrangements for the disposal of this water have yet to be worked out. Giving evidence before the Commitee, Shri A. L. Fletcher, Financial Commissioner, Revenue, expressed the view that diversion drain No. 8 was useful only at the time of floods and was only a partial solution of the problem of floods in the Jhajjar Area.

(ii) The other problem area is in Tehsil Sonepat. Here the problem is essentially one of drainage and of prevention of spills from river Yamuna.

HISSAR

4.96. Three important drains, i.e., Lassara Nala, Sirhind Choe and Barreta Drain have their out-fall in river Ghaggar. The situation is complicated by the fact that the the completion of work on the above drains will add to the discharge in the river Ghaggar and would thereby worsen the situation both above and below the Ottu Lake unless and until Rajasthan constructs an additional syphon below the Rajasthan Canal for passing water into the Rajasthan territory.

GURGAON

4.97. The two major drainage systems in this district are the Nuh-Ujina and the Gaunchi Drain systems. In the Nuh-Ujina area the problem is one of co-ordination between the States of the Punjab, Rajasthan and the U.P. The Gauchi Drain is a spill-over drain and the problem is that of saving villages close to the drain particularly in the outfall reaches. Parts of the district also get flooded from Sahibi and Indri Nadi and Nathupur Nallah. Certain areas in Mewat are flooded from the Landoha Stream. The long-term solution lies in putting bunds on these nadis in the upper reaches which are in the Rajasthan area.

Expenditure up to 1964-65 on Flood Control and Drainage

4.98. The total amount spent from 1955-56 to 1964-65 in the whole of the Punjab State on flood control and drainage is Rs. 28.35 crores, out of which the expenditure on unbreakable items benefiting the State as a whole is Rs. 1.25 crores. Out of the balance of Rs. 27.10 crores, only Rs. 7.8 crores have been spent in the Haryana Region in spite of the fact that the problem in this region is much more acute.

water-Logging

4.99. Apart from the problem of floods, the problem of waterlogging has also appeared in a number of tracts in the Haryana Region. The tehsil Hansi, tehsil Gohana and Safidon area of tehsil Jind are particularly waterlogged. The total area waterlogged is about 5 lakh acres in the Haryana Region. Since, the first priority is to execute schemes regarding flood

controll and drainage, anti-waterlogging measures have been given a low priority.

General Recommendations

4.100. The Committee discussed the details of the flood controll and drainage programme with Shri S. S. Grewal, Secretary, Irrigation and Power, and Shri G. S. Sidhu, Chief Engineer, Floods, and later with Shri A. L. Fletcher, Financial Commissioner, Revenue, who was the Chairman of the State Level Committee on Drainage Schemes. In the light of these discussions, the Committee makes the following general recommendations:—

(i) The outfall of the river Ghaggar as well as a number of drains in the Western Jamuna Canal tract lies in the adjoining areas of Rajasthan, the U.P. and Delhi. Effective co-ordination and collaboration is necessary with the various authorities involved for inter-State co-ordination (Ceneral Water and Power Commission, Central Flood Control Board, North-West Rivers Commission, Ganga River Commission, Brahmputra River Commission, Yamuna Committee). Co-ordination is also required with outside authorities such as Indus Water and Power Commission, the Northern Railway and Central Water and Power Commission.

(ii) The Committee noted that out of the expenditure of Rs. 28.35 crores incurred so far from 1955-56 onwards, only Rs. 7.8 crores have been spent in the Haryana Region even though the problem of floods in the area has been very acute. The amount required according to the existing Master Plan is Rs. 38.7 crores for the Ghaggar tract and Rs. 23.60 crores for the Western Jamuna tract. A part of the Ghaggar Tract falls outside the Haryana Region but giving evidence before the Committee, it was observed by Shri A. L. Fletcher, Financial Commissioner, Revenue, that the Ghaggar tract would have to be treated as a single whole. The provision made in the tentative Fourth Five-Year Plan of Rs. 500 crores, for flood control and drainage and anti-waterlogging measures is Rs. 25 crores but the Department has

not so far indicated the amount which will be spent in the Haryana Region. The total amount required, according to the Master Plan for the two tracts comes to Rs. 62 crores, and the amount required even for the emergent schemes for areas falling in the Haryana Region is about Rs. 15 crores. In view of the comparatively less attention in the past and the need for urgent action, the Committee recommend that 75 per cent of the provision made during the Fourth Five-Year Plan period should be spent in the Ghaggar tract (including areas outside the Haryana Region) and in the Western Jamuna Canal tract.

(iii) While giving evidence before the Committee, Shri Fletcher strongly emphasised that the magnitude and complexity of the problem in the two regions were such that it required the whole-time attention of a Chief Engineer. He stated that if the drainage work was inadequate for one Chief Engineer, this Chief Engineer could be given additional charge on the irrigation side as well. The Committee whole-heartedly agrees with this proposal and recommends it to Government for acceptance.

(iv) The Committee noted that to an extent, programme in the Ghaggar Tract was one of soil conservation and that effective co-ordination was required between the Agriculture Department, the Forest Department and the Director of Irrigation and Power Research Institute who are dealing with the subject. The Committee is also in agreement with Shri Fletcher that it is necessary to have proper co-ordination between the drainage and the irrigational side and that water in the drains should be diverted to the irrigation channels wherever possible. Shri Fletcher gave a list of schemes for the utilisation of flood water for irrigation and other purposes. These have already been mentioned in Annexure 26. The Committee feels that the utilisation of flood waters would be another way of removing the deficiencies of the Haryana Region in respect of irrigation and recommends that the whole matter should be

thoroughly examined with a view to making adequate provision in the Fourth Plan itself.

4.101. Apart from emphasising the need for providing adequate funds and Administrative machinery for taking up flood control, drainage and anti-waterlogging work in the Haryana Region during the Fourth Five-Year Plan, the Committee would also like to draw the urgent attention of the Government to the following problems:—

(i) *Seepage from Canals in Karnal District.*—The seepage from canals has assumed distressing proportions in district Karnal, as the main Western Jamuna Canal and Sirsa, Hansi and Delhi Branches leading water to the adjoining districts of Rohtak and Hissar pass through this district. During oral discussions, the Deputy Commissioner, Karnal, stated that, although an area of about 11 lakh acres is 'thur'-affected in varying degrees, the problem is particularly acute in an area of half a mile on each side along the main canals, which are unlined and this area was gradually increasing. The Executive Engineer, Irrigation, Karnal, stated that about 100 miles of canals pass through Karnal District and as such about 100 sq.-mile area is badly affected. The problem is particularly acute on both sides of the Sirsa Branch in the Kaithal Tehsil. The Committee feels that this situation needs to be rectified urgently and is, accordingly, of the view that the lining of the main canals in district Karnal needs to be taken up during the Fourth Plan period. It will also be simultaneously necessary to instal a large number of shallow tube-wells along the main canals and for this purpose, electricity should be provided in this belt as a matter of priority.

(ii) *Transfer of Hansi Area to the Bhakra-system*:— While giving evidence before the Committee, Shri S. N. Kapur, I.S.E., stated that the Hansi Branch below Munak generally and particularly between Anta and Jind has created extensive waterlogging because it runs along a depression with the result that the rain water stands on both sides of the Hansi Branch. He has suggested

that this area may be transferred to the Bhakra system in the following manner:—

(a) Transfer of some parts of Hissar and Masoodpur distributary to the Barwala Branch of the Bhakra system. (Project was prepared by Shri Lakhanpal, Executive Engineer, Hissar, in 1959 costing about Rs. 8—10 lakhs).

(b) Releasing of waters from the Sirsa Branch through Chautang Nala, which can be developed into a regular channel. The water can be brought to a place, six miles above Jind, where a regulator can be constructed and a channel taken off to link up this place with the tail of the Hansi Branch to feed the Petwar system. (Project prepared by Shri Soni, Executive Engineer, in 1959).

(c) Extending the channels of Hansi system to take over the small channels of Jind Tehsil, which now take off from Hansi Branch.

Shri Kapur stated that while saving the entire area between Anta and Rajthal from water-logging, it will release some water in the Western Jamuna Canal system, which can be usefully utilised elsewhere. The Committee feels that this would be one way of relieving the distress caused by acute waterlogging in the area and recommends it to Government for action at an early date.

(iii) *Floods from Sahibi Nadi.*—A large area in tehsil Gurgaon and tehsil Jhajjar of district Rohtak are flooded on account of waters coming in the Sahibi Nadi from the Rajasthan side. Bunds for flood protection have to be constructed on these nadis in the upper reaches by the Rajasthan Government and by Punjab in district Gurgaon. The Committee is of the view that the Centre should be approached for the early execution of these projects. Since there is considerable damage to railway lines and to crops and property in the Delhi territory and as both the Rajasthan and the Punjab Governments are involved, these schemes should be 'Centrally Sponsored' and the Punjab's share should be provided by the Central Government.

CHAPTER V

INDUSTRIES

Existing Position

The figures of over-all employment in the Industrial Sector are available in the Census Report, 1961. According to these (Annexure 2), the position in the household industry and the manufacturing industry was as follows:—

(Workers per 1,000 population)

Region	In Household Industry	In Manufacturing other than Household Industry
Hill ..	33	8
Non-Haryana ..	26	22
Haryana ..	26	14
Punjab State ..	27	17

It will be seen that the Non-Haryana Region is far ahead of the Haryana Region in respect of employment in organised industries. The lead in this respect by the Non-Haryana Region is a substantial one and it will take long to bring the Haryana Region at par with it.

5.2. For a detailed examination of the employment in the Industrial Sector we must look at the district-wise figures which are as follows:—

Name of the district	(*No. of workers per thousand of population*) In Household Industry	In Manufacturing other than Household Industry
1. Hissar ..	17	12
2. Rohtak ..	31	13
3. Gurgaon ..	27	16
4. Karnal ..	28	13
5. Mahendragarh ..	24	5
6. Ambala ..	27	31
7. Sangrur ..	31	7

Thus as far as Household industries are concerned, only Hissar District is considerably lagging behind the average for Punjab. As regards employment in 'Organised Industries' only Ambala District with 31 workers per thousand of population has a higher percentage of workers than the average for Punjab which is 17 and that of Non-Haryana Region which is 22. The employment position in Mahendragarh and Sangrur districts is very poor indeed. The position of Ambala District in this sector is better because of the concentration of Scientific Instruments units at Ambala and the Utencils Industry at Jagadhri. The growth in district Gurgaon is a recent one, and its impact on the employment position is being realised only in recent years.

Number of Registered Factories

5.3. Analysing the matter further, we may have a look at the registered factories in the various regions. The district-wise figures of factories registered under the various categories are given at Annexure 6. The overall position in this respect in the two regions as on 31st December, 1964, was as follows:—

Registered Factories

Region		Total number	Number per lakh of population
Hill	..	145	6.0
Non-Haryana	..	3,776	36.5
Haryana	..	1,124	14.9
Punjab State	..	5,045	24.8

It will be observed that the number of registered factories per lakh of population in the Haryana Region is only 14.9 as against 36.5 in the Non-Haryana Region, thereby indicating that the Non-Haryana Region is one and a half times ahead of the Haryana Region in this respect. In fact, the more relevant figure is that of factories employing more than 10 workers with power. Under this category, the number of factories in the Haryana Region is 874 as against 3,120 in the Non-Haryana Region, thereby indicating that the Non-Haryana Region is more than two and a half times ahead of the Haryana Region.

5.4. The districtwise position in the Haryana Region was as follows:—

Name of district	Total number of registered factories	Factories per lakh of population
Hissar ..	152	9.9
Rohtak ..	146	10.3
Gurgaon ..	280	22.6
Karnal ..	197	13.2
Mahendragarh ..	7	1.3
Ambala ..	324	39.4
Sangrur ..	18	3.9

It is clear that only Ambala District is ahead of the State average of registered factories per lakh of population. The rest of the districts excluding Gurgaon, are considerably behind the State average. The position of Mahendragarh District is really depressing with only 1.3 factories per lakh of people.

Number of Large and Medium-Scale Units

5.5. We may, now, have a look at the number of large, medium and small-scale units in the two regions. In respect of large and medium-scale industries, the total licences issued under the Regulation of Industries Act, 1951, for the State as a whole, is 670. Out of this, the number of licences for location in Haryana is 268. On a close examination, it would, however, be found that out of 268 units, 95 units are in satellite towns around Delhi, as indicated below:—

1. Faridabad	...	150
2. Ballabhgarh	...	8
3. Gurgaon	...	7
4. Badarpur	...	2
5. Palwal	...	1
6. Aurangpur	...	6
7. Bahadurgarh	...	11
8. Sonepat	...	9
9. Ganaur	...	1
Total	...	195

It is generally known that a major portion of the industries established in the satellite towns is owned and operated by the people of Delhi. While it is undeniable that certain advantages accrue to these areas, the fact remains that the share of the local population in labour, management as well as the profits of these enterprises is very insignificant. In fact the local representatives stated that some of their most valuable land, on which they used to grow *mehndi*, earning valuable foreign exchange, had been taken away for the setting up of industries without any consequential advantages to them.

Small-scale Units

5.6. Looking at the small-scale sector for which the Punjab is known throughout the country, the picture is even more discouraging. The district-wise number of small-scale units as on 31st December, 1964, is given in the statement at Annexure 28. The region-wise position is as follows:—

Hill	...	747
Non-Haryana	...	12,839
Haryana	...	4,133

The number of small-scale units in the Non-Haryana Region is 12,839, as against 4,133 in the Haryana Region, which indicates a two times lead for the Non-Haryana Region. This more or less tallies with the picture obtained regarding the number of registered factories in the two regions. If we examine the district-wise position in the Haryana Region, we find that Mahendragarh had only 28 units, while Ambala with 999 units had the highest number in the Haryana Region. Compared with this, there are four districts in the Non-Haryana Region which have more than 1,000 units and district Ludhiana alone has as many as 3,981 units.

Consumption of Power

5.7. Another indicator of growth is the extent of power, whether thermal or electric, consumed in the two regions. District-wise position regarding number of connections

and energy consumed is given in Annexures 25 and 29. The region-wise position is as follows:—

Region	No. of Industrial connections on 31st March, 1965	*Units consumed during* 1964-65 (In lakhs)		
		Small Industrial Supply	Medium Industrial Supply	Large Industrial Supply
Hill ..	1,034	68.43	30.68	14.41
Non-Haryana ..	16,729	1,070.83	969.74	1,075.73
Haryana ..	7,072	395.94	488.19	1,449.87

It will be observed that the number of connections in the Non-Haryana Region are more than double than that in the Haryana Region. The units consumed by the Small-scale Sector in the Non-Haryana Region are more than 2½ times than that in the Haryana Region and by medium industries about twice as much. The better position of Haryana Region in the large-scale sector is due to concentration of industries at Faridabad and other ring towns of Delhi.

5.8. The district-wise position in the Haryana Region regarding the number of connections and units consumed is as follows:—

Name of the district	No. of Industrial connections as on 31st March, 1965	*Units consumed in* 1964-65 *(in lakhs)*		
		Small Industrial Supply	Medium Industrial Supply	Large Industrial Supply
Hissar ..	1,445	44.63	54.12	258.13
Rohtak ..	1,393	74.24	105.29	35.23
Gurgaon ..	1,605	94.42	116.80	489.14
Karnal ..	1,311	95.00	78.63	10.43
Mahendragarh ..	315	16.38	7.27	224.67
Ambala ..	738	49.01	118.27	385.70
Sangrur ..	265	22.26	7.81	46.57

It will be seen that the number of industrial connections in Mahendragarh and Sangrur districts is very small. Similarly, the number of units consumed in small and medium industries in these districts is very low. On the large-scale industry side, the position of Karnal and Rohtak Districts is very poor. Gurgaon District leads all other districts because of concentration of large industries at Faridabad while the position of Mahendragarh District has been inflated by the cement factory at Dadri.

Consumption of Coke

5.9. The region-wise position regarding the number of wagons of hard coke allotted in 1964-65 for industrial purposes was as follows (details in Annexure 30):—

(i) Hill Region	...	16
(ii) Non-Haryana Region	...	2,881
(iii) Haryana Region	...	725

It will be observed that the consumption of coke in the Non-Haryana Region is about four times as much as that in the Haryana Region. If we examine the district-wise position in this connection, we will find that Mahendragarh District did not receive any hard coke while Sangrur, Hissar and Rohtak Districts, put together, received only 15 per cent of the allocation for the Haryana Region and 85 per cent of the coke was consumed in Ambala, Gurgaon and Karnal Districts.

Allocation of Scarce Commodities

5.10. A large number of scarce commodities which play a very important part in the development of industries are controlled by the Industries Department. The position, region-wise, in this regard in 1964-65, was as follows:—

(Details in Annexure 30):—

	Hill	Non-Haryana	Haryana
1. Plain sheets and plates (in tons) ..	64	2,152	764
2. Pig-iron (in tons) (decontrolled recently) ..	65	43,584	4,891
3. Copper (in metric tons) .	11	1,650	1,016
4. Zinc (in Metric tons) ..	5	958	739
5. Imported steel (in thousnad rupees) ..	4	1,559	472

The figures above clearly indicate that except in respect of industries depending on copper and zinc, the Non-Haryana Region has a decisive lead in all other spheres. This is so because there is a large utensil-making industry depending on these metals in two big centres, i.e., Jagadhri and Rewari in the Haryana Region. If we examine the district-wise position in the Haryana Region, we find that Mahendragarh District received only one ton of steel and 2 tons each of zinc and copper. The position of Sangrur District also is not very encouraging.

Industrial Estates and Areas

5.11. One of the ways adopted by the Department to encourage the development of industries is to establish Industrial Colonies, Urban Industrial Estates and Rural Industrial Estates. In the Second Five-Year Plan, five Industrial Estates were established, the places being Ludhiana, Malerkotla, Nilokheri, Sonepat and Batala. The total number of sheds in these Industrial Estates was 335, out of which the number of sheds in Nilokheri and Sonepat which fell in the Haryana Region was only 32. In the Third Five-Year Plan, only 14 Urban Industrial Estates have been established out of which 4 are in Haryana Region, 7 in the Non-Haryana Region and 3 in the Hill Region. As regards Rural Industrial Estates, the total number put up in the State is 46 out of which 12 are in the Haryana Region, 25 in the Non-Haryana Region and 9 in the Hill Region.

5.12. There is, thus, ample evidence to show that the Haryana Region is lagging far behind in the matter of industrial development and the Government will have to assist in a big way to accelerate the industrial development in the Haryana Region.

Recommendations for Industrial Growth

5.13. Initiating a process of economic growth in any field is not an easy task; all the more so in the industrial field, particularly, if the object is to take it to the backward areas. There is a natural tendency on the part of entrepreneurs to cluster around the existing developed areas and they would

not take to new areas, unless conditions are created under which industry can thrive and unless special inducements and concessions are given to them to make it worthwhile for them to take the risk and inconvenience involved. This would broadly involve the creation of social over-heads as well as provision on land, power, credit and essential raw materials, etc., on equitable terms. In regard to the latter, special concessions would have to be given to act as definite inducements to people to locate industry in the backward areas. Efforts have to be, simultaneously, made to generate local enterprise and to disseminate technical skills throughout the country-side.

Location of Central Government Projects

5.14. The urgent task before the Government, therefore, is to create an atmosphere in which the entrepreneurs find it sufficiently attractive to take industry to the Haryana Region. The Committee feels that a decisive lead in this direction must be given by Government by locating State-owned and State-sponsored projects in this region. The first logical step in this direction would be the location of industrial projects sponsored by the Government of India. It is common knowledge that this State has been treated very unfairly in the first three Five-Year Plans, inasmuch as, against the total outlay of Rs. 2,130 crores, it has been allotted only two projects with a total outlay of Rs. 30 crores, which constitutes only 1.4 per cent of the total investment. Even out of these projects, one is the Nangal Fertilizers Factory which is more a liability than an asset because it takes away a good portion of power produced at Bhakra. While the Committee is fully aware that there are a number of projects, depending upon essential raw materials like iron, coal or oil, the locations for which have to be necessarily fixed, it is of the view that there are other projects which are not so tied down and can be located in the Punjab because of the existence of the necessary technical skills. (Projects like Heavy Electricals and Ball Roller Bearing Projects would fall under this category). The Committee is, accordingly, of the view that the State Government must make a concerted attempt to impress upon the Government of India the urgent need for locating some of its projects in the Fourth Five-Year Plan in the Punjab. The Committee further recommends that any Central project, given to the State, should be located in the Haryana Region.

State-owned and State-sponsored Projects

5.15. The next logical step would be for the State Government to locate its own large and medium-scale projects in the Haryana Region in the Fourth Five-Year Plan. The following provision has been made in this respect by the Industries Department in its tentative Fourth Five-Year Plan.

(Rs in crores)

Project	Total cost	*State Contribution*		Capacity
		Third Plan	Fourth Plan	
Seamless Tubes Mill ..	9·00	0·35	1·15	72,000 tons per annum
Pig Iron Plant ..	4·89	0·45	2·00	100,000 tons per annum
Stainless Steel Plant ..	5·00	..	1·27	7,000 tons stainless steel bars and rods per annum
Heavy Electrical Plant ..	20·00	..	3·98	3 milion KVS transformers per annum and switch gears of the value of Rs 5 crores per annum
Forging Plant ..	4·50	..	0·67	9,000 tons of forgings per annum. Mainly autonomobile and tractor components
Manufacture of agricultural tractors and farming machinery	2·00	..	0·50	2,000 tractors per annum of which 50 per cent will be in H. P. range 5-6 and remaining in H. P. range 10—14
Coke-oven Plant ..	4·50	..	0·75	1,600 tons coke per day
Oscillocope Factory ..	0·55	..	0·18	1,200 oscillocopes per annum
Machine tools ..	1·00	..	0·24	Out-turn of Rs 2·25 crores per annum
Newsprint Mill and Cement Factory	..	..	2·50	
Total ..	..	..	13·50	

5.16. The Committee is glad to note that steps are being taken during the Fourth Five-Year Plan to locate the Pig Iron Plant at Hissar. According to the available information, a public limited company has been formed for putting up the Seamless Tubes Mill but the rest of the projects, which still are at the feasibility study stage will be State-sponsored.

The Haryana Development Committee is of the definite view that both from the point of view of developing ancillary industry and the other locational advantages, the bulk of these industries must be established in the Haryana Region. The Committee, accordingly, recommends that steps should be initiated right from now for locating most of these units in the Haryana Region.

Inducements to Private Entrepreneurs—Concessions Announced in July, 1963

5.17. Apart from locating State-owned and State-sponsored projects, it will be necessary for the State Government to have a deliberate and clear-cut policy to induce private entrepreneurs to take industry to the backward areas. Although, certain announcements have been made in this respect in the recent past, little seems to have been done to back it up with resources. Also, the necessary administrative arrangements for implementing the decisions announced have not been made. In July, 1963, the Government announced subsidy equal to 20 per cent of the cost of building (excluding land) and the machinery installed thereon for entrepreneurs taking industry to the backward areas. The precise terms for eligibility of the subsidy were as follows—

(i) the industrial unit must be situated at a distance of more than 5 miles from an industrially developed centre;

(ii) the industry is of a nature in which the end-product is different from the starting raw material;

(iii) the industrial unit is in the small-scale sector, i.e., the investment in fixed assets (land, building and fixed machinery) does not exceed Rs. 10 lacs and the unit is of the size that involves an investment of at least Rs. one lac in such fixed assets and also the employment of at least 8 workers in a single shift. These limits may, however, be varied later on in the light of the experience gained and the progress made in the industrialisation of the rural areas;

(iv) no fixed assets, taken into account in calculating the amount of subsidy, shall be removed for a

period of at least 5 years except for replacements or improvements thereof;

(v) the subsidy given will be recovered if the factory does not function at the site for a period of at least 5 years;

(vi) Cold Storages, Ice-manufacturing Units, Flour Mills, Rice-husking, Khandsari and Poultry, etc., will not be eligible for this assistance; and

(vii) only new units set up in rural areas after 1st April, 1962, will be eligible for grant of subsidy.

Modifications in May, 1965

5.18. In May, 1965, the following clause was substituted for clause (iii) above-:—

> "The industrial unit is in the small-scale sector, i.e., the industrial unit should have capital investment in fixed assets like land, building, machinery and equipment not exceeding five lakh rupees in the case of an industrial unit which is an independent one and of not more than ten lakh rupees in the case of a unit which is ancillary to or subsidiary of another industrial unit, irrespective of the number of persons employed therein. Minimum investment in fixed assets shall not be less than one lakh rupees except that in the case of an Industrial Unit set up in Hill Area, it shall not be less than twenty thousand rupees."

It seems that pending formulation of rules, no subsidy has been given under the July, 1963, letter. The May, 1965, letter also lays down that the subsidy would be given only to such industries as are set up at 'focal points' in rural areas to be selected by the Industries Department. These focal points have yet to be selected.

Budget Announcement by Finance Minister—1965-66

5.19. Apart from these policy decisions, the Honourable Finance Minister in his budget speech for 1965-66, announced a number of incentives for industrial ventures which may be

located in and around the focal points approved by Government (extract at Annexure 31). Briefly, the Finance Minister stated that land would be made available for factory sites, industrial and residential housing on a 'no profit, no loss' basis; that Government either directly or through the proposed Industrial Corporation will under-write or participate in the share capital of selected public limited companies; that special concessions will be offered to power-based industries and entrepreneurs generating power themselves; that sales-tax on raw materials purchased by the industry and on finished products will be refunded for an initial period of five years and that certain other incentives like sharing the cost of feasibility studies, preference in 'store-purchase' by Government and provision of controlled building materials would also be given.

General Recommendations regarding, dispersal of Industry

5.20. Keeping the above policy decisions in view, the Haryana Development Committee recommends the following for Government's urgent consideration :—

Need for conscious policy for the dispersal of Industry

(i) The Department of Industries should have a conscious and deliberate policy for the dispersal of industry. Since the Haryana Region, barring the 'ring towns' around Delhi, and the area around Jagadhri, is so glaringly backward in respect of industrial development, the industrialisation of the region should be a special responsibility of the Department. It is all the more important to do so as a lot of expansion is visualised in the Fourth Five-Year Plan and the gap would widen unless something is done with a sense of great urgency. For this purpose, an officer of the rank of Additional Director should be appointed in the Industries Department and he should be made responsible for the industrial development of the Haryana Region.

Development of 'Focal Points'

(ii) A beginning should be made by taking up a dozen focal points in the Haryana Region. Some of these focal points should be taken up in the developed areas while others should be taken up in the comparatively more backward areas within this region. What is more important is that a decision should be taken in this regard as early as possible,

and steps should be taken immediately for the development of these 'focal points' in a comprehensive way from the point of view of roads, provision for power, water supply, sanitation, industrial and residential housing etc. While an accurate idea of the costs involved in a comprehensive development of such focal points can be had only by working out the details of the places actually selected, the Committee feels that funds of the order of Rs. 5 crores would be required for the development of these 'focal points' in the Haryana Region. What the Committee would like to stress, at this stage, is that adequate lump-sum provision must be made in the State Fourth Five-Year Plan for the development of focal points in the Haryana Region.

Minimum Investment in Fixed Assets

(iii) According to the May, 1965, letter quoted earlier, the minimum investment in fixed assets of the industrial units claiming subsidy, should not be less than rupees one lakh except that in the case of industrial unit set up in the Hill Areas, it should not be less than twenty thousand rupees. It is considered that the concessions allowed to Hill Areas should also be made applicable to 'focal points' in the comparatively backward areas in the Haryana Region.

Concessions for both Large and Small-Scale Industry

(iv) The concessions announced in the Finance Minister's Budget speech, as well as the subsidy announced earlier (para 5.19), to be given at and around the 'focal points' should be available for large and medium-scale as well as small-scale industry.

Specific recommendations regarding assistance/ concessions for Industry

5.21. The Harvana Development Committee has further gone into the need for other specific concessions for the dispersal of industry (large and medium as well as small-scale) and makes the following recommendations :—

(i) *Land on no profit, no loss basis.*—The Finance Minister has stated that land would be acquired and sold out on 'no profit, no loss' basis and the

price would be recovered in easy instalments. He further mentioned that loan on similar conditions will also be given for the establishment of subsidised industrial housing and residential colonies for the staff of industrial undertakings. While the Committee welcomes this announcement, it feels that it does not go far enough. It, accordingly, recommends that for 'focal points' to be developed in the comparatively backward areas within the Haryana Region, subsidy to the extent of at least 30 per cent should be given in respect of land for industrial and residential purposes.

(ii) *Assistance by way of industrial credit.*—The Finance Minister further promised that the Punjab Government, either directly or through the proposed Industrial Development Corporation, would under write or participate in the share capital of selected public units. He also stated that the operation of the Punjab Financial Corporation would be further extended by enabling the Corporation to raise the additional capital so that larger number of units could be given medium and long-term loans.

The Haryana Development Committee is of the definite view that Government will have to assist the Haryana Region by way of participation and underwriting in a big and decisive way, if it is to help the people of Haryana to take to industrialisation. The Committee, accordingly, recommends that the State must provide the requisite financial resources for setting up a large number of industrial units in the Haryana Region. As a further incentive, the rate of interest charged should be lower than that from entrepreneurs in the developed areas and the repayment period should also be longer. It is recommended that this concession should be available to entrepreneurs putting up industry at all the 'focal points' in the Haryana Region excepting the satellite towns around Delhi.

(iii) *Provision for Raw Materials.*—Another item of considerable importance to which Committee wants to draw Government's attention is that regarding the provision of raw materials at a reasonable rate. It has been seen earlier in this chapter that a majority of the small-scale units depend on

'scarce commodities' for which quotas are fixed by the Industries Department. In this context, the Haryana Development Committee recommends that a special quota should be earmarked for industries located/to be located in the Haryana Region. Of course, it will have to be ensured that raw materials so allowed are actually utilised by the industrial units concerned.

(iv) *Subsidy on Power.*—The Finance Minister also announced that special concessions will be offered to power-based industries and to encourage self-generation of power, suitable subsidy on the capital cost of the generating equipment would also be granted. The Committee feels that these concessions do not go far enough. The Committee would like to draw the attention of the Punjab Government to the report of the Committee on Dispersal of the Small-Scale Industries, Government of India, wherein it has been recommended that power should be made available to small-scale industries at subsidised rates. It has been further recommended that for the backward areas, the cost of laying transmission lines from the nearest point of distribution up to factory site or the industrial site, as the case may be, as also the cost of switch gear and transformers required by the factory should be subsidized by the State Government. The Committee supports these recommendations of the Dispersal Committee and urges acceptance of the same.

(v) *Subsidy on Freight.*—The Committee on Dispersal of Small-Scale Industries, Government of India, also expressed the opinion that it was necessary to grant concessions on expenditure which an entrepreneur incurred on account of transport for either bringing the raw material or sending finished products. The recommendations of the Committee are as follows:—

(a) The entrepreneur should be given refund of 1/5 of the cost incurred by him in the transport of capital goods, i.e., 20 per cent;

(b) For the transportation of raw materials, the refund should be 33⅓ per cent;

(c) For outgoing finished goods, the concessions would apply up to the point of first delivery whether inside or outside the district concerned and would be 33⅓ per cent; and

(d) These concessions should be admissible for five years from the date of production.

The Haryana Development Committee fully endorses these suggestions and recommends them for urgent consideration by the Punjab Government.

Major Industries : Scope in the Haryana Region

5.22. Having dealt with the over-all measures, which could be adopted for accelerating the pace of industrial development, the Committee now proposes to draw the attention of the Government to specific industries for which there is considerable scope in the Haryana Region. The crucial factor for the development of a number of industries, particularly, engineering and chemical industries, is the availability of 'scarce commodities', particularly, imported raw material, and it has already been recommended that a special quota should be earmarked for developing such industries in the Haryana Region. The other type of industries are the resource-based industries, which can be broadly divided into industries based on agricultural products, livestock and minerals. Starting with the last category first, we find that minerals are available in Mahendragarh District only. A cement factory and a marble factory already exist in the district and a pig-iron plant, based on iron ore available in this district, is proposed to be set up in the near future. For developing the livestock-based industry, the first essential is to improve the quality of the available stock by better breeding and the whole position in this regard, particularly the scope for industries based on processing of milk, has been dealt with in a separate chapter. At this place, it is only proposed to draw attention to the leather industry for which there is a considerable scope in the Haryana Region. Among the agro-based industries, it is proposed to examine the detailed position in respect of industries based on agricultural products such as, sugarcane, cotton, oilseeds, and rice.

Sugar and other Ancillary Industries

5.23. Sugar industry is one of those resource-based industries which is tied down in the matter of location because it involves bulk transportation of huge quantities of raw sugarcane. The result is that if the industry is to come up at all, it must be located in the sugarcane-growing areas. In this context, first of all, it is proposed to give the present factual

position pertaining to the Haryana Region. This is as follows:—

(1) Out of a total area of 6.95 lakh acres under sugarcane in 1964-65 in the Punjab, 3.73 lakh acres, i.e., 54 per cent of the total sugarcane area, was in the Haryana Region. Not only this, there has been faster trend towards the cultivation of sugarcane in the Haryana Region; as in the year 1950-51, the non-Haryana Region had a larger area under this crop than the Haryana Region, this being 1.95 lakh acres against 1.37 lakh acres in the Haryana Region.

(2) Apart from the fact that the area under sugarcane in the Haryana Region is larger, the yield per acre in the Haryana Region is also generally higher than that in the non-Haryana Region. The cultivation is also concentrated and two districts of the Haryana Region, viz., Rohtak and Karnal account for more than 40 per cent of the total production of the State. The yield per acre in these two districts is higher than that in all the districts in the non-Haryana Region, except Ferozepur. Considering that the Haryana Region is comparatively more backward in respect of agricultural techniques, it seems obvious that there is greater scope for increasing the yield per acre of sugarcane in the Haryana Region still further in the near future.

(3) Changes in the cropping pattern in the areas being newly irrigated are still taking place, and with the completion of the Gurgaon Canal and other irrigation projects, there will be a further trend towards cash crops and both on this account and due to waterlogging conditions in certain parts of the region, the area under sugarcane is likely to increase significantly.

(4) There are three sugar mills in the Haryana Region, out of which two (Rohtak and Panipat) have a crushing capacity of 1,000—1,200 tons and the third mill at Yamunanagar has a capacity of 3,250 tons. The capacity of the former two mills is proposed to be increased to 1,500

tons and that of the latter to 4,000 tons during the Fourth Plan. The total present capacity of these three mills in the Haryana Region is 5,250—5,650 tons per day, while the total capacity of the five existing sugar mills in the Non-Haryana Region is only 4,950—5,150 tons per day.

(5) Out of the total production of 116.7 lakh tons of sugarcane in 1964-65, 68.82 lakh tons, representing 59 per cent of the total production, was produced in the Haryana Region. On the basis of a normal crushing season of 140 days, the three mills in the Haryana Region consume only about 7.62 lakh tons of sugarcane, representing only 11 per cent of the total production. Even after expansion of the capacity of these mills, only 14 per cent of the present production will be consumed by these three sugar mills.

(6) The position, therefore, is that on present capacities, 89 per cent, i.e., 61.20 lakh tons of the total sugarcane in the Haryana Region, is being processed in conventional sugarcane crushers for manufacture of gur, etc. Considering that the juice extracted in the sugar mills varies from 68 to 72 per cent, with a mill efficiency of 88—92 per cent and from 50 to 55 per cent in conventional cane crushers with a mill efficiency of 50 per cent, it will be seen that the conventional cane crushers in the Haryana Region produce only 30.60 lakh tons of juice, whereas the sugar mills would have extracted 42.84 lakh tons of juice from the same quantity of sugarcane. On these calculations, the juice being wasted is of enormous quantity, this being as much as 12.24 lakh tons and this fact should be taken note of by all concerned. Even if we assume that we cannot tap all the scattered areas in any region, it seems obvious that a lot of waste could be avoided if we could get even half of this sugarcane processed by the mill industry.

5.24. It is, thus, clear that the Haryana Region is better suited for sugarcane production, that the area under the crop is likely to rise still further in the foreseeable future, and, that

the bulk of the crop is being crushed in conventional crushers which involves enormous wastage. The strategy of future planning, therefore, should be to process as much of sugarcane as possible through sugar mills so as to attain better recovery. For areas for which sugar mills are not feasible, some other processes must be adopted to secure better milling efficiency.

Sugar Mills

5.25. The economic crushing capacity of a sugar mill is considered to be 2,000 tons per day requiring, on the basis of working season of 140 days, 2.8 lakh tons of sugarcane annually. According to the expert view, a mill can function profitably if it can procure the required quantity of cane within 10—15 miles of its radius. The average yield per acre of sugarcane in the Haryana Region works out to 18.4 tons per acre and the acreage required for 2.8 lakh tons of sugarcane comes to about 15,000 acres. However, keeping in view the fact that there may be variations in yield per acre from year to year and the total sugarcane produced in the 'gate areas' may not be available to the sugar mill, it may be stated roughly that 25,000 acres under sugarcane within the 'gate area' would be necessary for establishing one sugar mill. In this context, it would be pertinent to visualize the districtwise production of sugarcane, which is given below (tehsilwise position given in Annexure 32) :—

District		Area (in thousand acres)	Production (in thousand tons)
Hissar	..	31.4	830
Rohtak	..	122.9	2,590
Gurgaon	..	35.2	530
Karnal	..	118.5	2,200
Mahendragarh	..	3.6	60
Ambala, Naraingarh, Jagadhri tehsils	..	42.7	496
Jind and Narwana tehsils	..	18.9	176

5.26. The above figures show that there is a big concentration of sugarcane in Rohtak and Karnal. There are three tehsils each in Rohtak and Karnal which have more than 25,000 acres under sugarcane. Tehsils Gohana and Sonepat

of district Rohtak and tehsils Karnal and Thanesar of district Karnal have an area of 25,000 acres within a radius of 10—15 miles and these are without sugar mills. The average yield per acre of sugarcane in Rohtak District is 21.1 tons and in Karnal it is 18.6 tons. There is only one sugar mill each in Rohtak and Karnal and the mill at Jagadhri also draws sugarcane from Karnal. There is, therefore, great scope for expanding the capacity of the present mills to at least 2,000 tons per day and of installing more sugar mills in these two districts. As a practical proposition, the Committee suggests that besides expanding the present mills, at least two more sugar mills should be established in each of the two districts of Rohtak and Karnal. One more mill can be established at either Jind or Narwana which can draw sugarcane from Hansi and other adjoining areas as well. Tehsil Palwal of district Gurgaon has an area of 19,500 acres under sugarcane within a radius of 10—12 miles and the setting up of a smaller unit here, say of one thousand tons capacity, can also be usefully considered.

Khandsari Industry

5.27. While every effort, thus, has to be made to set up more sugar mills, large areas have to be necessarily left out because a sugar mill can be set up only if the necessary quantity of sugarcane can be produced within the 'gate area' of 10—15 miles radius. For smaller areas, we have, thus, to look to another alternative. In this context, it is relevant to mention that improved khandsari units were being set up in U.P. in which juice extraction varies from 65 to 68 per cent with a mill efficiency of 78—80 per cent against about 50 per cent in conventional village cane crushers. A khandsari unit of this type will crush about 6,000 tons of sugarcane which can be easily supplied within a radius of 3 miles in a sugarcane-growing area. The cultivator can easily transport sugarcane on his own bullock cart or trolly and the time-lag between harvesting and crushing can be minimised so as to increase recovery.

5.28. The Punjab Government deputed a team along with Shri Darbari Lal Gupta, Member, Punjab Public Service Commission, to study the working of this industry in U.P. and in its report given to Government, the Committee has made the following observations:—

(i) The recovery in the improved *khandsari* units in U.P. is of the order of 8.5 per cent against 3.4

to 4.5 per cent recovery in various units in the State ;

(ii) the capital investment cost per ton is Rs. 55 as against Rs. 140 per ton in case of a normal sugar mill;

(iii) unlike the molasses produced by sugar mills, the molasses produced by improved *khandsari* units are edible and may be utilised as animal feed or for purposes other than alcoholic distillation;

(iv) an average khandsari unit will employ 140 to 145 men, including 125 to 130 seasonal labour and the other permanent skilled and semi-skilled staff; and

(v) the wide-spread adoption of improved khandsari units will act as a channel for the flow of mechanical knowledge to villages and would, thus, help in accelerating the pace of rural industrialisation.

5.29. The Committee has stated that for diverting half the sugarcane presently crushed in the villages, we will need to instal at least 1,000 new khandsari units with an annual crushing capacity of 3—6 thousand metric tonnes per unit. In the phased programme suggested by the Committee, it has recommended setting up of at least 500 new units during the Fourth Five-Year Plan period. The Haryana Development Committee agrees with this view and suggests that a massive programme of setting up of improved-type khandsari units should be taken up during the Fourth Five-Year Plan and Government should give special assistance by way of credit and technical know-how for this purpose. Since the Haryana Region leads in the matter of sugarcane production, concentrated attention will have to be given in this respect to the Haryana Region.

5.30. As mentioned earlier, the Haryana Region produced 68.82 lakh tons of sugarcane in the year 1964-65. This would yield about 24 lakh tons of bagasse. Bagasse is a valuable raw material for the manufacture of paper and board. It produces short-fibred pulp which, if mixed with long-fibred plup, yields good quality of paper. There is only one paper manufacturing unit at Yamunanagar in the Haryana

Region, which is making use of bagasse for the manufacture of paper and the rest of it is being used as fuel, both in mills and *kohlus.*

5.31. There was a proposal to put up a paper mill at Panipat during the Third Five-Year Plan, but, because of certain difficulties, it has not materialised. Panipat is ideally suited to be a location for a bagasse-based paper mill, as it can be fed by 3 sugar mills in the area, i.e., Rohtak, Panipat and Yamunanagar. This can also utilise the bhabbar grass which is available in a considerable quantity in the Haryana Region. The Committee, accordingly, recommends that an effort should be made to put up a paper mill in this area during the Fourth Plan period. It is to be pointed out that consequential action will have to be taken to convert the existing boilers into coal-fired boilers or to instal improved type of boilers so that the consumption of bagasse to generate the same amount of heat is considerably reduced.

5.32. Another industry which can be developed from bagasse is chip-board. The Committee saw one such factory near Karnal which is running quite successfully. The Committee recommends that the possibility of establishing more such factories during the Fourth Plan should be given special consideration.

Textile Industry

5.33. The textile industry can be divided mainly into three categories, i.e., (i) organised mill sector; (ii) powerloom sector; and (iii) handloom sector. In Punjab, most of the organised mill sector consists of cotton textile and woollen/worsted textiles. The powerloom sector mostly consists of art silk, stapple and worsted textiles. The handlooms in the State are mostly working on cotton yarn and are also producing woollen and shoddy goods at some places like Amritsar, Panipat, Dhariwal, etc. The art silk handloom industry is decreasing day by day and at this stage it is just negligible.

Cotton Textile Industry (Mill Sector)

5.34. Punjab is one of the principal cotton growing States and during 1963-64, it produced 11.65 lakh bales, representing 21 per cent of the total production in the country. Long-stapple cotton is regarded as best fibre material for producing durable cloth and Punjab is a heavy producer of this variety of cotton.

While this is the position regarding cotton production, the number of cotton spindles, installed in the Punjab up to 1st

January, 1964, was only 1.93 lakhs, as against 146.61 lakh spindles in the country, representing only 1.3 per cent of the total spindlage installed in the country. During the Third Plan the Government of India allotted 2.57 lakh spindles to Punjab which have been allotted to 22 textile mills. Even with the installation of these spindles, which will take some time, Punjab will have only a small portion of the total spindles installed in the country. In respect of looms, the position is much more unsatisfactory as out of a total of 202,747 looms in the country, as on 1st January, 1964, Punjab had only 2,064 looms, representing one per cent of the cotton-looms in the country.

5.35. The *per capita* consumption of cotton cloth in the Punjab is the highest as compared to other States, i.e., 25 yards annually as compared to 18 yards which is the average for the country. On this basis, Punjab needed 51 crore yards of cloth in 1961, against which its production was only 8.27 crore yards. There is, thus, a very strong case for increasing the number of spindles as well as looms in the Punjab.

5.36. Having established the huge scope for expansion of textile industry in the State, we have now to examine the position in Hill, Haryana and Non-Haryana Regions of Punjab. The trend in cotton cultivation in these three regions is as follows:—

Region	*Area under cotton (in thousand acres)*				Average yield 1961—64 (in lbs)
	1950-51	1955-56	1960-61	1963-64	
Hill ..	36	23	11	15	134
Non-Haryana ..	545	1,045	1,095	1,256	262
Haryana ..	134	230	229	432	253

5.37. It can be seen that the trend in cotton cultivation in both Haryana and Non-Haryana regions has been encouraging. However, the area in Non-Haryana Region has increased by 130 per cent while in Haryana it has increased by 222 per cent over 1950-51. In fact the cropping pattern in large tracts in the Haryana Region is fast changing after

availability of Bhakra waters and it is expected that in the days to come, Hissar may well beat Ferozepur and Bhatinda in the matter of cotton production. There is likely to be a significant increase in the area under cotton in Gurgaon after completion of the Gurgaon Canal Project. The area under cotton in the Haryana Region in the Fourth Plan is, accordingly, likely to increase significantly.

5.38. In the year 1963-64, there were five mills with 96,904 spindles and 1,202 looms in the Non-Haryana Region, as against six mills with 1,31,346 spindles and 928 looms in the Haryana Region. Though the comparative position in the Haryana Region is better, as explained earlier, the state as a whole consumes very small percentage of its production. The Haryana Region has considerable locational advantages because of its proximity to the consuming markets and there is great scope for increasing the number of spindles and powerlooms in the Haryana Region in the Fourth Five-Year Plan period.

Woollen Sector

5.39. In the year 1963-64, there were 42 units in the Punjab. Out of these, 33 units were in the Non-Haryana Region and 9 in the Haryana Region. The district-wise position of spindles and powerlooms is as follows :—

Name of district		Spindles				Powerlooms
		Shoddy	Woollen	Worsted	Total	
Non-Haryana Region						
Amritsar	..	1,732	8,965	20,096	30,793	263
Ludhiana	..	2,019	1,880	18,780	22,679	96
Gurdaspur	..	..	8,640	7,620	16,260	230
Ambala	..	..	2,052	1,104	3,256	18
Haryana Region						
Karnal	..	..	3,992	..	3,992	..
Total Punjab	..	3,751	25,529	47,600	76,980	607

5.40. It will be seen that out of 76,980 spindles, only 3,992 representing 5.1 per cent of the spindles, are in the Haryana

Region. The spindles for worsted yarn are based on imported raw materials, but the spindles on woollen and 'shoddy' are mostly based on indigenous raw materials. If we examine the position regarding sheep which is the principal source of raw material for this industry, we find that there were 3.54 lakh sheep in the Non-Haryana Region as against 3.34 lakh sheep in the Haryana Region. The availability of raw material in both the regions is, thus, the same, and there seems to be no reason why woollen industry should not be expanded in the Haryana Region. The largest number of sheep are found in district Hissar (130,200), followed by Karnal (55,600), Gurgaon (44,300), Mahendragarh (38,200). With the implementation of the recommendations made regarding development of sheep and wool in the Animal Husbandry chapter, the availability of wool in the Haryana Region can be expected to increase considerably. The possibility of more spindles in this area during the Fourth Five-Year Plan should be specially considered.

Decentralised Powerloom Sector

5.41. There are 9,834 powerlooms installed in the State in the decentralised sector. Out of these about, 1,300 powerlooms are working on woollen/worsted and the remaining on silk/staple fibres. The region-wise position is as follows (District-wise position is at Annexure 33):—

Hill Region	...	Nil
Non-Haryana Region	...	9,422
Haryana Region	...	412

It will be seen that this is the most important sector of the textile industry as the total number of looms in the organised mill industry is only 2,671 (cotton 2,064, woollen/worsted 607) against which the number of looms in the decentralised sector is 9,854. The Haryana Region is lagging far far behind in this very important sector of the textile industry and special efforts will have to be made to increase the number of powerlooms in this sector during the Fourth Plan period.

Handloom Sector

5.42. The handloom industry is one of the traditional industries and ranks next only to agriculture from the point of size and employment provided. Region-wise details of handlooms as on 31st December, 1962, are as follows:—

Hill Region	...	5,868
Non-Haryana Region	...	40,381
Haryana Region	...	10,149

It will be seen that the Haryana Region is backward even in this sector. The Textile Industry Committee recommended that handlooms will have to be replaced by powerlooms in the present-day competitive structure of the textile industry. Much headway has not been made in this direction in the recent years and it has been proposed to review the whole position during the Fourth Five-Year Plan and lay more emphasis on conversion of handlooms into powerlooms. In view of the fact that the Haryana Region is lagging far far behind in respect of powerlooms, the Committee hopes that the Haryana Region will be given a special consideration in respect of conversion of handlooms to powerlooms during the Fourth Plan period.

Leather Industry

5.43. It is a well-known fact that we have a large cattle population and the largeness of the population itself is a hindrance in the way of better breeding and better milk yield from cows and buffaloes. The disadvantage of large population, from the point of view of animal husbandry, can, to some extent, be counter balanced if we properly utilise the dead animals. This is a source of wealth which is not being fully tapped because of certain techno-economic and socio-economic factors. Since the Haryana Region has large cattle wealth, tapping of this resoruce can be a very important means of developing the economic potential of the people in this area.

5.44. According to the 1961 Livestock Census, the total number of livestock in the Haryana Region, whose hides and skins, etc., can be utilised in the leather industry, was as follows :—

(i) Cattle	...	22.23 lakhs
(ii) Buffaloes	...	16.40 lakhs
(iii) Sheep	...	3.34 lakhs
(iv) Goats	...	3.56 lakhs
Total	...	45.63 lakhs

5.45. The mortality rate is about 10 per cent in cattle and buffaloes and more than 50 per cent amongst sheep and

goats. Thus, the availability of dead animals in the Haryana Region would be as follows:—

	Lakhs
(i) Cattle	... 2.23
(ii) Buffaloes	... 1.64
(iii) Sheep	... 1.67
(iv) Goats	... 1.78
Total	... 7.32

On this basis, the availability of dead animals in the Haryana Region would be about 2,000 per day.

5.46. During the post-Independence period, the slaughter of cattle has completely stopped on account of the migration of the Muslim population and this has affected the slaughter of buffaloes also. The hides are, thus, made available from the dead cattle alone and, consequently, the quality is generally poor on account of imperfect and delayed flaying. The dragging of dead animals by feet is very common, resulting in damage to the hide. The carcass of the animal, which can be put to various uses, remains practically unutilised. Due to deep-rooted prejudices and the giving up of the profession by hereditary artisans, a large proportion of the dead animals is being buried in the Haryana Region without even flaying. The annual loss on account of improper utilisation or under-utilisation of dead animals' bodies in the State is roughly of the order of Rs. 1.5 crores.

5.47. The result is that the State has primarily remained as an exporter of raw skins/hides and is dependent for its requirement of quality leather on other States. This fact was corroborated by the Liberty Shoe Manufacturing concern at Karnal, which is importing even sole leather from other States. The irony of the situation is that raw skins/hides are being supplied by us to the States like Madras from where these are either exported or returned to us after being converted into quality leather.

5.48. The existing potential for the development of leather industry and other subsidiary industries, thus, remains

largely untapped and there is an urgent need for developing the industry on a wider scale, covering all aspects such as flaying, disposal of carcasses, tanning and footwear in both urban and rural areas. A beginning has been made in this direction in the Punjab by having three Hide Flaying and Carcass Utilisation Centres, one of which is located at Hissar in the Haryana Region. Since this centre will be able to cope with only 15 carcasses of adult animals per day, it will touch only a fringe of the problem. The Industries Department has a scheme whereby it is proposed to set up 100 primary Flaying Centres in the districts of Rohtak, Hissar, Gurgaon and Mahendragarh which will be charged with the duty of flaying of the animals which may die around 5—7 miles radius of these centres. The report of dead animal will be made by the owner of the live animal or his agent who will be obliged to do so within a specific time of the death of the animal. The owner of the cattle or the hereditary flayer, with the approval of the owner, will be given suitable compensation for the carcass, after which the carcass will be carried to the flaying centre. The owner of the dead cattle will be paid specific transport charges in addition to the compensation for the carcass, if he carries the carcass to the flaying centre himself. The amount of compensation and the transportation charges will be so fixed as to prove an attractive incentive to break the prejudice barrier. Apart from flaying and curing the skins, the primary flaying centres will also be capable of extraction of tallow flakes from the animals, collection of bones, horns, hoofs, etc., and preservation of animal meat from the dead bodies for poultry feed. Apart from these primary flaying centres, there will be one main centre in each of these four districts and this will be charged with the following duties:—

(i) Re-processing of animal meat having been collected from primary centres.

(ii) Bone products from bones having been collected from primary centres.

(iii) Purification and refining of animal tallow having been collected from primary centres.

(iv) Precessing of intestines into guts.

(v) Providing suitable storage accommodation to the various products having been received from primary centres as such or re-process afterwards.

(vi) Supply of various chemicals, tools and equipment to the primary centres.

(vii) Dissemination of technical know-how to the primary centres.

(viii) Disposal of products.

5.49. The Committee feels that the scheme is on the right lines and hopes that measures will be taken in the immediate future to put it on the ground. The Committee is further of the view that similar centres should be opened in other districts of the Haryana Region. In order to give further fillip to the leather industry, the Committee is of the view that a big state-sponsored tannery, on the lines of the one existing at Kapurthala, should be established in the Haryana Region during the Fourth Five-Year Plan. The State should also give incentive to the private enterpreneurs through participation in the share capital of the commercial tanneries and should ensure that a sizeable number of these tanneries come up in the Fourth Plan period. The Committee is also of the view that a State-sponsored unit manufacturing about 1,000 shoes a day should be established in the Haryana Region.

5.50. The Committee is glad to note that the State Government has recommended to the Government of India for the location of a Regional Training Centre for flaying and carcass utilisation at Hissar. This is a centrally-sponsored scheme and concerted efforts should be made to get the location decided in our favour.

Oil Industry (Rape and Mustard)

5.51. Out of the total area of 7.89 lakh acres under rape and mustard in the Punjab in 1963-64, the Haryana Region accounted for as much as 5.41 lakh acres. It is widely known that 'sarson' produced in the Haryana Region, especially in districts Mahendragarh and Gurgaon, is of a very high quality. Most of it is exported to places in U.P. and Calcutta, where it is milled and marketed.

5.52. In the large-scale sector, there are only two units in the Haryana Region, but most of it is crushed in village 'ghanis' as a cottage industry. The Committee is of the view that an effort should be made to have more large-scale units

in the Haryana Region during the Fourth Plan period. The districts which are well-suited for setting up oil mills are Hissar (production 71,000 tons), Gurgaon (production 25,000 tons), and Mahendragarh (production 15,000 tons). Where putting up of oil mills is not possible, the available oilseeds should be crushed in village 'ghanis' of the improved type.

5.53. The crushing of oilseeds leaves behind oil-cake which still contains 11 to 15 per cent of oil, and it is possible to get oil from the cake by solvent extraction methods. In view of the large area under oilseeds in the Haryana Region, there is a practical possibility of having solvent extraction units in this region, particularly, in Hissar, Gurgaon and Mahendragarh.

5.54. During the tour of various districts, the Committee had talked to some people who had tried to put up oil-mills industry in this region about their difficulties. The Committee was informed that one of the major bottlenecks in the way of development of this industry was that a number of potential areas were served by the metre-gauge and, as such, involved transhipment at Delhi, for taking oil to the Calcutta side, which is the main consuming centre. There is also great difficulty about obtaining tankers for the transportation of oil.

5.55. The position regarding railways in the region has been dealt with in the chapter under 'Communications'. At this place the Committee would like to emphasise that the extension of broad-gauge to the main centres of the region, and better road communication facilities generally throughout the region, would help a great deal in the industrialisation of the area.

Rice Milling

5.56. Rice has become one of the important crops of the Haryana Region in recent years and out of the average produce of 741.3 tons obtained during the years 1961-62 to 1963-64, 280 tons, representing 37.8 per cent of the total production was in the Haryana Region. The rice-producing area is mostly concentrated in districts Karnal and Ambala which together account of 3.25 lakh acres out of 3.95 lakh acres area put under paddy in the Haryana Region. Rice is also being grown in Hansi tehsil of district Hissar due to waterlogging conditions. There is, thus, great scope for rice milling in these areas.

5.57. Rice bran is obtained as a by-product and can be useful as a source of vegetable oil. The removal of the oil does not reduce the value of the bran as cattle feed but, in fact, reduces spoilage during storage. A major problem in the operation of the rice bran oil industry is the collection of the desired quantities of bran as soon as possible after milling so that rancidity developed due to fermentation is the minimum. Since the area under rice in the Haryana Region is concentrated, the collection of rice bran is easy, indicating scope for oil industry based on this source.

Barley

The total area under barley in the Haryana Region was 1.88 lakh acres in 1963-64. Gurgaon District grows some of the best barley available in the country and husked and pressed barley under the trade name of 'Pearl' barley has been widely sold in the market. There is scope for resorting to barley processing on a larger scale.

Problems of Industrial Centres

5.58. During the tour of the various districts, the Committee visited the major industrial centres in the Region, such as, Faridabad, Sonepat, Bahadurgarh, Panipat, Jagadhri and Rewari. The local representatives placed a number of their problems before the Committee which cannot be dealt with at length at this place. In order, however, to highlight the nature of the problems, it is proposed to refer to them briefly in the succeeding paragraphs. The Committee hopes that the Government will look into these and other connected problems of these industrial centres in a comprehensive way and would take suitable measures for removing the existing deficiencies.

Faridabad

(i) The industrial belt in the Faridabad-Ballabhgarh area consists of three separate Municipal Committees of old Faridabad, New Township Faridabad, Ballabhgarh and a number of panchayat areas, with the result that a lot of haphazard growth is taking place in the area and it lacks several civil amenities. It was suggested that a single Local Body in the shape of a Corporation should be formed to serve this entire area.

(ii) The Town and Country Planning Department is executing a Housing-cum-Industrial Estate but the progress is very slow, and even this would not be sufficient for the needs

of the expanding labour force. Under the circumstances, it is necessary that work on the existing labour colonies should be completed expeditiously and land should be made available to the Land Improvement Trust at reasonable rates for setting up industrial colonies.

(iii) There are no railway siding facilities at Faridabad Railway Station. The industrialists there have been demanding the setting up of a Flag Station at Mewala Maharajpur. This place is in the middle of Tuglakabad and Faridabad and is quite appropriate for this purpose. This demand needs to be specially looked into.

(iv) Faridabad has no depot for raw materials like steel and iron, etc., and the industrialists are required to purchase most of their requirements from Delhi. A raw material depot is one of the urgent needs of the town.

(v) It was represented to the Committee that Faridabad should be declared a 'Dry Port' for imported raw materials and the materials should be supplied to the industrialists at Faridabad at the same rates as at Calcutta and Bombay. This suggestion requires to be seriously examined by all concerned.

(vi) The industrialists have to depend on Delhi for many of the services but the bus services are very infrequent, with the result that a lot of time is wasted by the passengers to reach Faridabad from Delhi and *vice versa*. While the Delhi Transport Authority is not putting more buses on this route, it has been stated that due to certain agreements with them, it is not possible for the Punjab Roadways to take up this route. The matter needs to be discussed between the transport authorities concerned so as to find out a solution at an early date.

(vii) The local inhabitants have received large amounts as compensation for lands acquired for industries, but it seems that because of lack of experience, the money so available to them is not being put to productive uses. Managerial and other assistance should be given to them so as to enable them to set up industrial enterprises on a co-operative basis.

Sonepat

(i) There is no direct road from railway station to the industrial area and goods have to be transported through Mandi Main Bazar, covering a distance of three miles, involving a lot of expense and inconvenience. Approach roads are also lying

incomplete and there are no pucca roads within the industrial area. Roads which have become unserviceable due to rains have also not been repaired. Similarly, kachha open drains have been provided in the lay out which obstruct the traffic during rains, causing a lot of inconvenience. All these problems have to be looked into on a priority basis.

(ii) There are no street lights and inadequate facilities for drinking water, presumably due to the fact that the industrial area is outside the Municipal limits. There is a long-standing dispute between the industrialists and the local body on this issue, and the industrialists are against the inclusion of this area within the municipal limits as this will burden them with additional cost. While it is difficult to give a straight answer, it is necessary that the dispute should be settled at an early date.

(iii) The present transportation agency charges are very high and some authorised booking agencies, duly recognised by banks, should be opened.

(iv) Sonepat has not been declared fit for siding coal wagons and coal has to be brought from Panipat. Siding facilities should be provided at or near Sonepat.

(v) Sonepat town should be upgraded so that fire brigade facilities become available.

(vi) There should be a direct telephone service between Sonepat and Delhi.

Bahadurgarh

(i) The most important problem of this town from the point of view of industry is the non-availability of drinking water and other soft water required essentially for ceramic, textile and other chemical industries. Augmentation of water supply is possible either through canal or by putting up pumping sets on the side of the Najafgarh Jheel. In any case, urgent action is required to solve this problem.

(ii) The absence of an overhead bridge on the Delhi-Bahadurgarh Road just near the Delhi Industrial Area acts as a major transport bottleneck and is inhibiting the growth of Bahadurgarh as an industrial centre. It is, accordingly, necessary that the Punjab Government should take up the matter with the Railway authorities/Delhi Administration.

(iii) The flood protection measures have been inadequate, with the result that floods in 1961-62 submerged the industrial area, diverting the attention of the indusrialists from Bahadurgarh to other areas. It has, now, to be ensured that such a situation is not repeated.

(iv) The industrial area has not been fully developed and proper drainage facilities have not been provided. This difficulty can be removed by extending the limits of the Municipal Committee to the industrial area and by ensuring that the former provides drainage and other civic amenities.

(v) There is lack of housing facilities for labour. Concerted efforts have to be made for the provision of labour colonies.

(vi) According to the Sub-Divisional Officer, Civil, Jhajjar, supply of electricity is inadequate and there is lack of continuous and uninterrupted supply. These difficulties have to be carefully looked into.

(vii) The industrial area has not been properly linked by pucca road with railway station. A road link of 2-3 furlongs is urgently required.

Panipat

(i) The site of the industrial area is low-lying and water-logged. Till 1957, most of the plots used to be under water during the rainy season making it impossible to take construction work in hand. Large patches of stagnating water were also a big deterrent in this respect. A link drain was constructed in 1957, but no trunk drain was provided for, with the result that the basic problem still remains unresolved.

(ii) Development charges were levied by Government at the rate of Rs. 2,000 per acre, but no development worth the name has taken place in this area. The area has not improved even though it has now been included in the municipal limits. All the other roads are badly constructed and there is very little maintenance of these roads.

(iii) There is a sizeable handloom industry in the town and it is well-known for its tapestries, bed-sheets, khes, etc. In order to make this industry more competitive, there is an urgent need for the opening of a design centre at this place. In order to train the local people for employment in this industry, there should be a training programme for the artisans as well.

(iv) Panipat is a big market for raw wool. There is a purchase tax of 6 per cent on this wool in Punjab, while there is no such tax in Delhi. This has adversely affected the wool market in Panipat and the question of reducing the purchase tax on this item should be carefully considered.

Jagadhri and Rewari (Utensil Industry)

Jagadhri and Rewari have been known for utensil industry for a long time but the industry is dying out as it has been declared as a non-essential industry with consequential reduction in the quota of non-ferrous metals. The result is that a very large number of workers in these two towns are facing unemployment. According to the Government instructions, quota of non-ferrous metals can be given only for setting up of new and rare industries. In order to enable the pseople to do so it is necesary that Government takes some positive steps to guide the people in this respect. Since artisans' skill is available in abundance, Government should consider the possibility of starting a project each at these two places for intensive development of small industries on the lines of one already started at Malerkotla.

CHAPTER VI

COMMUNICATIONS

Existing Position

Road mileage (Comparative Regional Position)

The position regarding metalled road mileage in the various regions in the years 1950-51 and 1963-64 is given in the following statement (Districtwise details are in the statement at Annexure 34):—

Region	*Road Mileage*		*Road mileage per 100 Square Miles*	
	1950-51	1963-64	1950-51	1963-64
Hill ..	345	694	2.8	5.6
Non Haryana ..	1,712	3,512	9.5	19.5
Haryana ..	1,182	2,994	7.0	17.8
State ..	3,239	7,200	6.8	15.2

It will be seen that the road mileage in the State has increased from 3,239 to 7,200 and in the Haryana Region from 1,182 to 2,994 miles. In the year 1950-51, the non-Haryana Region had a metalled road length of 9.5 miles per 100 square miles as against 7.0 in the case of Haryana Region, thereby indicating that the non-Haryana Region had a lead of 2.5 miles for every 100 square miles. The road mileage in the two regions has more than doubled during the period 1950-51 to 1963-64, this being 17.8 miles per 100 square miles for Haryana Region as against 19.5 miles for the Non-Haryana Region. It is, thus, clear that although the gap in the road mileage in the two regions has been narrowed down (from 2.5 miles to 1.7 miles per 100 square miles), it has not been completely bridged and the Haryana Region is still lagging behind the non-Haryana Region in this respect, even though the difference is marginal.

Rail mileage (Comparative Regional Position)

6.2. For having a comprehensive picture regarding the availability of transport facilities within a region, it is necessary to visualise the extent of rail mileage also. The detailed position regarding the approximate rail mileage in the two regions is given in Annexure 35 (broad gauge) and Annexure 36 (metre gauge). The over-all position is as follows:—

	Haryana Region	Non-Haryana Region	Total
Broad gauge ..	433 (26.9%)	1,176 (73.1%)	1,609
Metre gauge ..	348 (77.7%)	100 (22.3%)	448
Total rail mileage ..	781 (38.0%)	1,276 (62.0%)	2,.057

It will be seen that only 433 miles of broad gauge tract is in the Haryana Region as against 1,176 miles in the Non-Haryana Region. Even if we take the metre-gauge into consideration, which generally has a much lower intensity of traffic, the total mileage of railway tracts in the Haryana Region comes to 781 as against 1,276 in the Non-Haryana Region.

Recommendations

6.3. It has already been stated that the Haryana Region has a great potential for development in the field of agriculture and animal husbandry and that significant increases can be expected in the next 5—10 years. The Committee has separately recommended the establishment of focal points for the development of industry and these focal points have to be properly linked with the various consuming and raw material producing centres. There is a large drought-affected area in the Haryana Region and establishing a net work of roads in such areas is one way of linking their economy with the rest of the State and in releiving their distress in needy times. Measures have also to be taken to ensure that flood-affected areas are also made accessible.

6.4. The comparative position regarding the rail and road facility, as given in the earlier paragraphs clearly indicates that the Haryana Region is backward as compared with the non-Haryana Region in terms of its communication system. This is even otherwise clear as, barring Karnal and Ambala, none of the other district headquarters in the Region are directly connected by train to the State Headquarters. Hissar is not connected to Delhi and Rohtak by broad gauge, excepting by a circuitous route via Jakhal, involving an additional distance of 75 miles. There is no direct link with Narnaul, and reaching Narnaul, Mahendragarh and even Dadri by train is an ordeal. Similarly, Rewari which is sort of a gate-way to Rajasthan, is still on the metre gauge. In fact, a large part of the Haryana Region is served by the metre gauge on which frequency of services is quite low.

6.5. Keeping the existing situation in view, it is apparent that extension of rail facilities and conversion of metre gauge into broad gauge is one of the pressing needs of the region. While all efforts should be made in this direction, the Committee is aware that because of various pressures and the limitation of

resources at the Government of India's level, it will be quite some time before such extension of rail facilities becomes a practical proposition. The Committee, accordingly, considers that the only other alternative for the State is to gear up its own roads programme, so as to cover the deficiency of the Haryana Region in the matter of rail facilities. Taking all these factors into view, the Committee considers that at least 66 per cent of the expenditure on roads in the plains area during the Fourth Five-Year Plan should be incurred in the Haryana Region.

Highways

6.6. There are two main highways in the State. One is the main Grand Trunk Road from Delhi to Amritsar, and the other from Delhi to Fazilka via Rohtak, Hansi, Hissar. There are three other inter-State highways serving Gurgaon District; (a) Delhi—Agra highway which serves the Faridabad—Ballabhgarh belt, (b) Delhi—Alwar highway which serves Nuh, Ferozepur Jhirka area, and (c) Delhi—Jaipur highway which is under construction, and would serve Rewari, Bawal area.

The Delhi—Fazilka highway is in the process of widening and so far widening has taken place only upto Hissar. The progress of work on this highway is quite slow and an effort has to be made to ensure that the work is completed as early as possible.

6.7. While these highways are of great importance for the Haryana Region, there are large areas in the interior of the Region which are at present served only by small arterial roads. The Committee has considered the whole position and is of the confirmed view that there is pressing need for having at least one major road, which should connect as large a number of urban centres in the Region by a shorter route with the State headquarters, as possible. This objective can be achieved if we have a major 22-foot wide trunk road, off-taking from Ambala and going right upto Rewari, via Pehowa, Kaithal, Jind and Dadri. Certain portions of this trunk road already stand constructed and have only to be widened, while certain other portions are covered by existing 'kacha' roads. Large tracts in districts Karnal, Sangrur, Hissar, Mahendragarh and Gurgaon will be covered by this trunk road and it should be possible to have a regular service plying on this route. The Committee has given considerable thought to this matter and recommends that the construction of this trunk road should be taken up during the Fourth Plan.

Districtwise Position

6.8. The following statement gives the overall position of roads in the year 1963-64 in the various districts of the Haryana Region.

District	Road mileage 1963-64	Road mileage per 100 square miles, 1963-64
Hissar ..	780	14.5
Rohtak ..	507	21.7
Gurgaon ..	607	25.8
Karnal ..	480	15.6
Mahendragarh ..	196	14.6
Ambala (Haryana part) ..	296	22.3
Sangrur (Haryana part) ..	128	12.2

The above statement indicates that districts Rohtak, Gurgaon and Ambala are comparatively well-developed from the point of view of over-all road mileage on area basis. Till recently, Mahendragarh was also quite backward, but with the taking up of famine roads, the position has improved considerably and is likely to improve still further. Districts Karnal, Hissar and Sangrur are comparatively lagging behind and the Committee recommends that efforts should be made to bring these areas at par with the other parts of the region and elsewhere, as early as possible.

6.9. The Buildings and Roads Department, which was asked to go into the matter, has suggested the following additional mileage for these districts to cover the existing gap:—

District	*Mileage*
Karnal ..	139
Hissar ..	40
Sangrur ..	68

The Department has also suggested some additional road mileage to meet the existing deficiency in respect of railway mileage. The details of both these proposals are given in Annexures 37 and 38. The Committee considers that this total additional mileage of 365 miles should be taken up as a matter of highest priority in the Fourth Five-Year Plan and the necessary funds should be provided for this purpose. The Department has placed

the cost of constructing this road mileage at Rs. 3.65 crores on the basis of Rs 1 lakh per mile, but the cost in actual practice may work out to be somewhat less than the amount so proposed.

6.10. The local representatives in all the districts placed a number of demands before the Haryana Development Committee when the latter visited the various districts. While it is not possible for the Committee to go into the details of the roads which are required to be taken up in the various districts, it would like to stress that future road programme should be worked out on the basis of the following considerations:—

(i) Connecting various trade mandis among themselves and to district headquarters.

(ii) Opening up country-side for transport of agricultural produce to market.

(iii) Transport of sugarcane from larger area around sugar mills.

(iv) Providing missing links between important road communications.

(v) Connecting the areas submerged during rains to ensure supplies of food, medicine and other necessities during floods.

(vi) Providing approach roads to stone quarries.

(vii) Connecting police station and other important places in the districts to tehsil headquarters and railway stations.

(viii) Providing pucca roads to connect Block headquarters.

6.11. The Committee would like to stress another aspect of the case and that is with regard to some of the uncompleted roads. During the tour of the various districts it has been brought to the notice of the Committee that some of the roads are continuing from First Five-Year Plan and have yet to be completed. In some cases, local representatives stated that the roads included in the First, Second and Third Five-Year Plans, have not been started as yet. The Committee has considered the matter and would like to stress the need for taking up and completing all the roads which have been included in the various Plan programmes.

Maintenance of Existing Roads

6.12. At present the funds earmarked for the maintenance of existing roads are most inadequate. In addition to allowing

the Haryana Region its proportionate share from the funds normally earmarked for maintenance of roads, the Haryana Development Committee recommends that an additional sum of Rs. 50 lakhs per annum should be provided for the region.

Famine Relief Roads

6.13. A special road construction porgramme was taken up in the drought-affected areas of districts Mahendragarh, Hissar, Gurgaon and Rohtak. The Committee feels that the roads so started should be completed at the earliest and funds for the same should be provided immediately.

Bridges

6.14. The problem of district Ambala in the Haryana Region is not so much of roads as of bridges, so much so that even Jagadhri and Naraingarh tehsil headquarters are not connected with the district headquarters by an all-weather road. The district is criss-crossed by a number of nadis like Tangri, Markanda, Umla, Begna, Roon Nadi and Shahzadpur Nadi, etc., and a number of bridges are required to connect the various important centres in the district. The Committee is of the view that a comprehensive plan for the construction of bridges should be drawn up for this district and, as a first step, bridges should be provided on the Ambala-Jagadhri and Ambala-Naraingarh roads so as to connect the district headquarters with the tehsil headquarters by an all-weather road.

Over-head Bridges

6.15. The most urgent over-head bridge, in terms of its importance, is the one required on the Delhi-Bahadurgarh road near the Delhi Industrial Area. The absence of such an over-bridge is proving to be a great communicational handicap in the way of growth of Bahadurgarh as an industrial centre. The Committee recommends that the matter should be taken up with the railway authorities and the Delhi Administration as early as possible.

6.16. The railway line divides the industrial town of Yamunanagar into two parts and the gates at the railway crossing remain closed for long periods. To facilitate traffic, an over-bridge is necessary. Such an over-bridge is also necessary at the railway crossing on the main highway passing through Hissar. These should be duly provided for.

Inter-State Co-ordination

6.17. The economy of the border districts, particularly that of Mahendragarh and Gurgaon, is, to an extent, tied up with the economy of the adjoining areas in the Rajasthan State and the road-programme should take this factor duly into account. In some cases, roads are to be constructed in the Punjab area upto the border so as to link up with the roads in the Rajasthan State, whereas in other cases, it is necessary to persuade the latter to build small strips near the border for linking up the main roads in the Rajasthan areas to those in the Punjab areas. One such example is of Narnaul-Khetri road which has assumed a special importance because of the huge copper plant which is coming up at Khetri. A road already exists in the Punjab from Narnaul to village Rambas and the strip from Rambas to Gorir in Rajasthan area is required to be constructed to connect it with the road leading to Khetri. In such cases, it should be possible for the Punjab Government to persuade the Rajasthan Government to take up the construction of links required for connecting the main centres in the two States.

Road Transport

6.18. Apart from roads, the Haryana Region is also backward in regard to road transport. During its tours to the various districts, the Committee was told that the frequency of State-operated passenger buses was very inadequate and that mostly inferior type of buses were plying on most of the routes in the Haryana Region. The local representatives in Hissar, particularly, demanded the introduction of a deluxe service between Hissar and Delhi. The Committee considers that the present situation is quite unsatisfactory and suggests that the whole question of road transport should be gone into comprehensively by the transport authorities with a view to providing adequate facilities in the Haryana Region.

CHAPTER VII

GENERAL EDUCATION AND TECHNICAL EDUCATION

Part 'A' General Education
Existing Position

Over-all literacy in the Regions

According to the information available in the Census Report, 1961, the position of literacy in the three regions is as follows :—(District-wise details in Annexure 7).

Name of Region	Literate (in lacs)	Illiterate (in lacs)	Literate as percentage of population in the region
Hill ..	6.58	17.71	27.1
Non-Haryana ..	27.65	75.86	26.7
Haryana ..	14.94	60.33	19.8
Total Punjab .	49.17	153.90	24.2

The above table shows that the Non-Haryana Region has a lead of 6.9 per cent over the figure of 19.8 per cent for the Haryana Region. It is, thus, clear that the Non-Haryana Region is about 33 per cent ahead in the matter of literacy over the Haryana Region. It may be worthwhile noting that the Hill Region, which is otherwise backward, is quite advanced in respect of literacy. This is due to the fact that literacy percentage in Simla (43.6) and Hoshiarpur (28.8) districts is higher than the average for the State as a whole.

Female Literacy

7.2. The position regarding female literacy in the various regions, is as follows:—

Name of Region	Literate (in lacs)	Illiterate (in lacs)	Literate as percentage of total female population
Hill ..	1.73	9.95	14.8
Non-Haryana ..	8.33	39.14	17.6
Haryana ..	3.20	31.80	9.1
Total Punjab	13.26	80.89	14.1

The above statement highlights the distressing fact that the extent of female literacy in the Haryana Region is almost half of that in the Non-Haryana Region.

7.3. The following statement gives the over-all position with respect to the number of colleges with science facilities and the number of students:—

(a) Number of Colleges teaching Science:—

Region	Government	Percentage	Government & Private combined	Percentage
Hill ..	3	11.1	9	17.1
Non-Haryana ..	16	59.3	46	54.8
Haryana ..	8	29.6	29	28.1
Total Punjab ..	27	100.0	84	100.0

(b) Number of Students:—

Region	Students	Percentage
Hill ..	4,074	8.7
Non-Haryana ..	28,329	60.6
Haryana ..	14,348	30.7
Total Punjab ..	46,751	100.0

The position that emerges from the above statements is that, taking both the private and Government colleges, the Haryana Region has 28.1 per cent of the colleges in Punjab. Since the population of the region is 37.06 per cent, the lag is about 24 per cent. The lead that the Non-Haryana has over the Haryana will be clearly visualised from the fact that the number of students in the Non-Haryana Region is almost double of that in the Haryana Region, whereas the population of the Non-Haryana Region is only 38 per cent higher.

B.T./B.Ed. Teachers' Training Colleges/Extension Centres

7.4. None of the six Government Training Colleges giving B.T./B.Ed. degrees is located in the Haryana Region. The places at which these are situated are Simla, Dharamsala, Jullundur, Faridkot, Patiala and Chandigarh. There is only one such college in the region, namely, the State College of Education at Kurukshetra which admits students after the Higher Secondary stage and awards degrees of B.A./B.Sc. (integrated Course). There are two colleges in the State having M.Ed. course and none of them is in the Haryana Region. Similarly, out of six Extension Centres, there is only one in Haryana which is located at Kurukshetra.

7.5. Apart from Government Colleges, there are 15 Private Colleges, out of which 11 are situated in the Non-Haryana Region and only four in the Haryana Region.

Junior Basic Training Schools

7.6. The following statement gives the position regarding full-fledged Junior Basic Training Schools in the three regions:—

Region		Schools	Percentage
Hill	..	4	20
Non-Haryana	..	10	50
Haryana	..	6	30
Total	..	20	100

Haryana has thus, got 30 per cent of the J.B.T. Schools. These are located at Naraingarh, Karnal, Dujana (district Rohtak), Gurgaon, Faridabad and Papra (district Hissar).

Model Schools

7.7. There are 12 Model Schools in the entire State as follows:—

Junior Model Schools	... 8
Senior Model Schools	... 1
Model Higher Secondary Schools	... 2
Model High School	... 1
Total in the State	... 12

Out of these there are only two Junior Model Schools in the Haryana Region, one at Sirsa and the other at Rai in district Rohtak.

Sainik Schools

7.8. There is only one Sainik School in the Haryana Region which is situated at Kunjpura. Against this, there are two Sainik Schools in the Non-Haryana Region situated at Kapurthala and Nabha.

High and Higher Secondary Schools

7.9. The Education Department has gone through an exercise regarding the number of institutions required at the Higher Secondary and the High School level for satisfying 100 per cent educational needs of the different districts. On the basis of a double-section school, one school has been considered sufficient for an average of 200 students. Making calculations on this basis, the districtwise position is given in Annexure 39. The regionwise position is as follows:—

Region	High Schools					
	Existing Institutions			*Excess (+) Deficiency (—)*		
	Male	Female	Total	Male	Female	Total
Hill ..	211	46	257	+27	—9	—9 (+27)
Non-Haryana ..	641	247	888	—144 (+5)	—15 (+49)	—159 (+54)
Haryana ..	450	104	554	—103	—64 (+9)	—167 (+9)

The figure of 'minus' indicates deficiency in the matter of schools whereas the figure 'plus' indicates that the number of schools already existing are more than what is required according to the norm. The position in the Hill Region regarding schools for boys is very favourable and there is a deficiency of only nine schools for girls. Of course, one reason which can be given is that since the population in the Hill Region is scattered the norms may not be strictly applied. In respect of schools for boys, the deficiency in the Non-Haryana region is

144 and in the Haryana Region 103. In district Kapurthala five more schools exist than what is required according to the norm and that is why plus five is indicated under Non-Haryana Region. Considering that the population of the Non-Haryana Region is 38 per cent higher and the deficiency in respect of High Schools is also 40 per cent higher, it will be seen that the two regions are more or less at par in respect of number of schools for boys. The real position would, of course, be vastly different if we take the qualitative aspects into account. In respect of schools for girls, the Non-Haryana Region has a deficiency of only 15 institutions, as against 64 in the Haryana Region. At the same time, most of the districts in the Non-Haryana Region have more girls' schools than what is required according to the norm, the excess being as much as 49 in the Non-Haryana Region against 9 in the Haryana Region.

Middle Schools

7.10. A similar exercise has been gone through in respect of Middle Schools. Here the norm is one school for 150 students. The position region-wise is as follows (Annexure 40):—

Region	Existing Institutions	Deficiency (—) Excess (+)
Hill ..	527	(+)83
Non-Haryana ..	1,682	(—)264 (+)10
Haryana ..	1,240	(—)162 (+)13

It will be observed that the Hill Region has a much larger number of Middle Schools than what is required according to the norm prescribed, although, as stated earlier, perhaps, there is a case for relaxing the norms for the Hill Areas. The deficiency in the Non-Haryana Region is 264 against 162 in the case of Haryana Region. This comes to a deficiency of 63 per cent over the Haryana Region although the population of the Non-Haryana Region is higher by only 38 per cent. The Haryana Region has, thus, got some lead in respect of Middle Schools over the Non-Haryana Region.

Expenditure on Education

7.11. The over-all position regarding expenditure under Head 28—Education (Staff and Contingencies, etc.), for the year 1963-64 after excluding grants to Universities, is as follows:—

(Rupees in lakhs)

Region	Plan	Percentage	Non-Plan	Percentage	Total	Percentage
Hill ..	167·44	14.2	56.13	19.1	223.57	15.2
Non-Haryana ..	615.95	52.2	149.79	51.0	765.74	52.0
Haryana ..	395.66	33.6	87.63	29.9	483.29	32.8

7.12. The above figures show that 33.6 per cent of the Plan expenditure and 29.9 per cent of the Non-Plan expenditure is in the Haryana Region. Taking education as a whole the expenditure is 32.8 per cent, which is lower than the percentage of Haryana population which is placed at 37.06 per cent. The Non-Haryana Region has an expenditure of 52.0 per cent against a population of 50.98 per cent.

Contribution by Village Communities

7.13. It is a known fact that during the last few decades the village communities in the Haryana Region have made very substantial contributions, running into crores of rupees, for providing buildings, staff, equipment for extending school education. Precise information regarding contributions made by the village communities in the State to the Education Department is available only after the re-organisation of schools (from 1961-62) and the region-wise position that emerges therefrom is as follows:—

	(Rupees in lacs)	Percentage
Hill Region ..	9.60	11.5
Non Haryana Region ..	27.13	32.5
Haryana Region ..	46.68	56.0

From the figures given above, it is evident that the village communities in Haryana have been showing much greater enthusiasm towards creating educational facilities than people in the other regions.

RECOMMENDATIONS

Educational Backwardness

7.14. Backwardness in the sphere of education is one of the major reasons for the over-all socio-economic backwardness of the Haryana Region. The figures quoted above, in fact, do not portray a full picture because they refer merely to quantity and can, in the naure of things, say nothing about 'quality'. The picture is also obscured by the fact that certain educational institutions which the Education Department would describe as common to the State, catering to the needs of all districts, are so located that the districts of the Haryana Region can hardly derive any benefit from their existence. But even the picture which emerges from the figures given above confirms the belief universally held that the Haryana Region lags far behind the greater part of the Punjabi Region in the matter of educational facilities.

7.15. The present unsatisfactory situation is a result of a number of developments over the last few decades. Certain denominational bodies such as the Arya Samaj and the Sanatan Dharam Sabha organised schools in the Central Punjab Region even before the Partition of the country, thus, giving it a distinct lead over the Haryana Region. Whatever convents and public schools were established by Christian Missions were also, by and large, outside the Haryana Region. The schools were established in a spirit of competition with other denominational bodies existing in joint Punjab and great emphasis was given on the quality of education. The Haryana Region was generally left out and whatever schools were there, were organised by the local bodies which were themselves in a bad shape and could not pay adequate attention to these schools. After the provincialisation of the schools, emphasis has been on expansion of education and sufficient attention does not seem to have been paid to properly equip the existing institutions. The village communities in the Haryana Region have made strenuous efforts for the last few years and have made large contributions in the shape of land,

building and equipment. It has already been seen in the earlier paragraphs that the contribution of the people in the Haryana Region has been much larger than that of the Non-Haryana Region but the village communities, in the nature of things, have neither the resources nor the personnel to devote the attention required for the organised running of these institutions on a long-term basis. Added to these difficulties was the fact that a large part of the Haryana Region was lagging behind in respect of social amenities with the result that the better category of teachers were disinclined to go to this area.

Problem: No. of Institutions and Quality of Education

7.16. The result was that to start with, a smaller number of institutions existed in the Haryana Region and the quality of education imparted in these institutions was not very satisfactory. In view, however, of the large contributions coming from the village people in the Haryana Area and the enthusiasm exhibited by them, belated attempts have been made by Government to fill the existing gap on an *ad hoc* basis but the quality of education imparted still leaves much to be desired. A good test of the education facilities in the area would be the percentage of competitive jobs which the students from the area are able to obtain. While it is needless to go into exact numbers, it is safe to say that very few students from this area are able to find a place in technical and professional institutions and the higher services. The representation of the area in the higher services is particularly meagre. The problem of education has, thus, to be examined from the point of view of the number of educational institutions as well as the quality of education imparted.

Number of Institutions: Primary and Middle Level

7.17. The over-all position regarding the number of institutions at the Primary and Middle levels is not altogether unsatisfactory. At the Primary level, the Department is attempting 100 per cent coverage in all areas. As already mentioned, the Department has worked out the deficiency in respect of Middle Schools at the rate of one school for 150 students. While the over-all position of the Haryana Region is not unfavourable, districts Karnal, Hissar and Sangrur are definitely lagging behind to a very considerable extent. The

deficiency in district Sangrur is to the extent of 25 per cent, in district Hissar 22 per cent and in district Karnal 21 per cent. It will be absolutely necessary to remove this deficiency in the shortest possible time and the Committee recommends that special attention should be given to these districts in the Fourth Five-Year Plan.

No. of Institutions at High School level (Boys and Girls)

7.18. The norm adopted by the Department is to have one school with two sections for 200 students. The Department has worked out the deficiency, district-wise, on this basis separately for boys and for girls. As has been seen earlier, the two regions are more or less at par in respect of number of institutions for boys. In the case of High Schools for girls however, there is a great disparity. The position in this respect is given below:—

	Deficiency	*Excess*
Non-Haryana Region ...	15	49
Haryana Region ...	64	8

7.19. As has been earlier explained, most of the districts in the Non-Haryana Region have an excess of girls' schools if the norm is to be strictly applied. In the Haryana Region the deficiency is most prominent in the districts of Hissar, Mahendragarh and Gurgaon, where it is to the extent of 66 per cent, 50 per cent and 46 per cent respectively. In the districts of Rohtak, Karnal and Sangrur, it ranges between 30 per cent to 40 per cent.

7.20. Taking all these factors in view, the Haryana Development Committee strongly recommends that necessary funds should be provided in the Fourth Five-Year Plan for removing the deficiency of the Haryana Region in respect of High Schools for girls. The task is so urgent that the Committee feels that the Government must consider it as one of its major priorities.

Upgrading of Schools

7.21. The present practice for upgrading of schools in the rural areas is that, in addition to providing additional accommodation required, the villagers are required to contribute

in cash an amount equivalent to the salary of the additional staff for a period of three years. This amount comes to about Rs. 8,000 for upgrading a primary school to the middle school standard and Rs. 27,000 for upgrading a middle school to the High School standard.

7.22. During the course of visits to the various districts, it was, time and again, represented before the Committee by the public representatives that, because of the backwardness of the Haryana Region in respect of educational facilities, this cash contribution should be waived off as a special case. The Committee has carefully considered the matter and recommends that cash contributions should be completely waived off in respect of schools upgraded in the drought-affected areas and other areas, officially declared as backward.

College and Post-Graduate Education

7.23. The region is particularly deficient in respect of education at the College and Post-Graduate stage. It was earlier noticed that there are only 8 Government Colleges in the Haryana Region as against 16 in the Non-Haryana Region. The combined strength of Government and private Colleges, teaching science, is only 29 for Haryana Region as against 46 in the Non-Haryana Region. The number of students in the Non-Haryana Region is double than that of the Haryana Region although the population of the Non-Haryana Region is higher by 38 per cent only. In the Haryana Region, Post-Graduate courses exist only at the Government College at Rohtak but here too, instructions are not given in all subjects. There is not a single B.T./B.Ed. Government College in the Haryana Region, although there are 6 in the Non-Haryana Region. Taking all these factors in view, the Committee recommends as follows:—

(i) The provision of only 2 Colleges for the Fourth Plan period for the State as a whole is wholly inadequate. In view of the large disparity already existing, the Committee is strongly of the view that provision should be made for at least 6 Government Colleges for the Haryana Region during this period.

(ii) In order to further remove the deficiency in respect of College Education, financial assistance

should be made available to private organisations. There is a great enthusiasm in the area for setting up new Colleges and people are ready to come forward with liberal contributions. The Committee recommends that this source should be fully utilised and the Government should assist by giving at least 50 per cent building grant and 90 per cent grant towards recurring expenditure.

(iii) The Panjab University should open at least two Regional Centres for Post-Graduate teaching in all subjects in the Haryana Region.

(iv) At least one College for Physical Education for boys should be opened in the Haryana Region.

(v) One Home-Science College for girls in the Haryana Region is an absolute necessity and must be provided for in the Fourth Five-Year Plan.

(vi) At least two to three Post-Graduate Teachers' Training Colleges should be opened in the region during the Fourth Plan period.

(vii) Greater attention should be paid to the qualitative aspect. Special attention should be given by the Department to the region by way of appointment of senior and qualified staff, and provision of buildings, laboratories, libraries etc.

Quality of Education

7.24. It has been earlier stated that a large number of educational institutions have been upgraded or opened in the very recent past and gains so made have yet to be consolidated. The provincialised local body schools are particularly in a bad way. The schools lack equipment, and the teaching of science is of poor quality. Reference has already been made to the fact that the competitive ability of the students from the Haryana Region is much less than that of the Non-Haryana Region.

7.25. While giving evidence before the Committee, the Education Department representatives stated that Rs. 350 crores were being provided by the Planning Commission on the

centrally-sponsored side for improving the quality of education. The Haryana Development Committee strongly feels that the Department should make all possible efforts to secure a large share for Punjab from the centre and at least 60 per cent of this allocation should be spent in the Haryana Region.

'Quality' Schools.

7.26. It has already been noted that the region is particularly deficient in respect of Model Schools. Out of the 12 Model Schools of various categories, there are only 2 Junior Model Schools in the Haryana Region, one of which was started only a few months back. There is not a single Senior Model School or a Model Higher Secondary/High School in the area. The opening of model schools is a 'must' for improving the standard of education in the region. If the region could produce 3,000 to 4,000 students with competitive ability, the region should get a fair share in technical and other professional institutions. An attempt should be made to secure at least this number of students from the various areas of the Haryana Region. It is, accordingly, proposed that there should be at least one 'Quality' School in each of the tehsils in the Haryana Region and it should be able to admit the best students from schools in the entire tehsil. The schools should be properly staffed and equipped and should provide adequate hostel facilities for the students. The fees charges from the students should be the same as in other Higher Secondary Schools. The Committee further recommends that it will be appropriate if one of the existing Higher Secondary Schools is taken up for conversion into a 'Quality' School in each tehsil. It should also be possible to give technical training, in these schools by attaching a unit organised under the Junior Technical Schools Programme.

Sainik Schools

7.27. It is a well-known fact that the Haryana Region is one of the major recruiting centres for the Indian Armed Forces. The Sainik School at Kunjpura is doing yeoman's service in educating the children of servicemen, but it is not enough for the entire needs of the region. Foundation stone was laid for opening a Sainik School at Jhajjar, sometime back and even land was acquired but no steps have yet been

taken to establish the school. The Committee is of the view that an effort should be made to secure at least two more Sainik Schools for this region during the Fourth Plan period.

Girls' Education

7.28. It has already been indicated that literacy percentage in the female population is only 9.1 in the Haryana Region as against 17.6 in the Non-Haryana Region. This is a very depressing state of affairs indeed and special efforts will have to be made by the Government if the existing deficiency is to be covered in any foreseeable future.

7.29. The problem of girls' education, partly arises from the fact that, because of lack of social amenities, better type of women teachers are not prepared to go into the interior of the Haryana Region. This is particularly so because there are few women teachers from the Haryana Region itself and if there are any, they are mostly from the urban areas. It is also a fact that great hardship is experienced by these women teachers in securing residential accommodation. Keeping the situation in view, the Haryana Development Committee feels that an effort should be made to provide residential accommodation for at least 75 per cent of the total requirements during the Fourth Five-Year Plan. The Committee is also of the view that incentives should be given by way of loans and scholarships at the middle and high school level and J.B.T. level so that more and more of girls from within the area take to the teaching profession. Scholarships should also be made available for girls at the college level.

7.30. The problem is further complicated by the fact that co-education has been introduced in all the Government schools right up to the middle level. The Committee tried to get the consensus of the people of the area and the latter were also unanimously of the view that the introduction of co-education after the primary level (6th class and onwards) was a little premature. The Committee is generally in agreement with this view and would suggest that the Government should consider the possibility of having separate schools for boys and girls at the middle school level, at least in the rural areas in the Haryana Region.

Kurukshetra University

7.31. One of the major handicaps in the way of the development of the Kurukshetra University is the location of

the Campus away from a big urban centre. While the Punjabi University has been a going concern right from the beginning because of its location in Patiala, the Kurukshetra University has no such advantage and, in fact, the students from the adjoining areas are facing transport difficulties. Moreover, a number of colleges, like the Medical College, the Engineering College, the Sports College and the Mahendra College already existed at Patiala and have been affiliated to the Punjabi University. At Kurukshetra, there is only one College of Education and the Regional Engineering College has come up only recently.

7.32. Giving evidence before the Committee, the Vice-Chancellor, Kurukshetra University, emphasised that financial assistance would have to be given in a big way for turning the Kurukshetra University into a full-blown premier educational centre. He stated that a number of new departments like Botany, Zoology, Statistics, Geography, Psychology, Sociology and Public Administration were required to be added. He also stated that for completing the Agricultural Faculty, there was need for adding the Departments of Dairying and Animal Husbandry. Taking an over-all view, the Vice-Chancellor, Kurukshetra University, pressed before the Committee that a sum of at least Rs. one crore was required during the Fourth Five-Year Plan for fulfilling some of these aims. The Vice-Chancellor also expressed the view that the Kurukshetra University should be turned into an affiliating University.

7.33. The Committee has considered the whole position and is of the view that the Kurukshetra University has a vital role to play in fulfilling the educational needs of the Haryana Region. The Committee, accordingly, agrees with the views expressed by the Vice-Chancellor and commends them to Government for urgent and immediate action.

PART B—TECHNICAL EDUCATION

Existing Position

7.34. First of all, it will be appropriate to visualize the present position of the Haryana Region *vis-a-vis* the other regions in respect of location of various categories of Technical

Institutions. This is given in the following statement (Districtwise details at Annexure 41):—

		Hill	Non-Haryana	Haryana	Total
Degree level	No. of Institutions	.. ..	3	1	4
	Seats	.. ..	810	120	930
Diploma Level	No. of Institutions	.. 4	8	6	18
	Seats	.. 390	1,410	1,015	2,815
I.T.I.s.	No. of Institutes	.. 7	25	17	49
	Seats	.. 2,456	9,520	7,184	19,160

As regards the degree level, there are three colleges in the Non-Haryana Region, i.e., at Chandigarh, Ludhiana and Patiala with 810 seats. Besides, there are 51 seats at the Post-Graduate level in the college at Chandigarh. In the Non-Haryana Region, only the Regional Engineering College has just started functioning at Kurukshetra. At the diploma level, there are 6 institutions in the Haryana Region against 8 in the Non-Haryana Region. The seating capacity in the Non-Haryana Region is 39 per cent higher, i.e., 1,410 against 1,015 in the Haryana Region. Besides this, there are some part-time courses at the diploma level in various institutions in the Non-Haryana Region. No polytechnic has so far been located in district Mahendragarh, district Gurgaon and Jind and Narwana tehsils of district Sangrur. At the I.T.I. level the number of seats in the Haryana Region is 7,184 against 9,520 in the Non-Haryana Region.

7.35. In the draft Fourth Five-Year Plan, a provision of Rs. 23 crores has been made as against an anticipated expenditure of about Rs. 6 crores in the Third Five-Year Plan. The intake capacity at the various levels at the end of the Third

Five-Year Plan as well as the additional target in the Fourth Five-Year Plan are given in the following statement:—

Item	Achievement at the end of Third Plan	Target for the 4th Plan (Additional)
Post Graduate ..	75	315
Degree ..	930	590
Diploma ..	2,815	1,140
Special Diploma in Production Engineering ..	120	120
Junior Technical Schools ..	330	6,570
Industrial Training Institutes ..	19,160	10,000

7.36. The position regarding the addition on the polytechnic side is given in the statement below:—

(a) Delayed implementation of target of the Third Plan by Y.M.C.A. Institute (Special Course), Faridabad ...	120
Amritsar Polytechnic ...	120
(b) Six Specialised Courses of 30 each ...	180
(c) Expansion in 4 Polytechnics, 60 each (Jhajjar, Sirsa, Hoshiarpur and Ludhiana) ...	240
(d) Four new Polytechnics 4 × 120 ...	480

Production Engineering Course

7.37. In respect of Production Engineering, 120 seats exist at the Engineering College at Chandigarh and 120 seats each are proposed to be provided in the Engineering Colleges at Patiala and Ludhiana.

Junior Technical Schools

7.38. At the moment, there are three Junior Technical Schools and they are located at Kangra, Kapurthala and Gurgaon. As against 330 seats under this category at the end of the Third Plan, the additional seats being provided are

6,570. For this purpose, a tentative provision of Rs. 8.40 crores is being made in the draft Fourth Five-Year Plan. The idea is to catch the boys after the Middle standard and to provide for intensive workshop training, in addition to the studies of Humanities and Science which is generally provided at the higher secondary level in the 9th, 10th and 11th classes. It is expected that apart from preparing terminal products who can enter the employment market, it will be possible to so arrange the matters that certain students from the Junior Technical Schools, who get first division in the 10th class, may be admitted to the first year of the Three-Year Diploma Course in Polytechnics. A few of these Schools can be located on the campus of the Higher Secondary Schools where sufficient facilities exist and resources for the technical works can be provided from the Technical Education Plan. Some of the Junior Technical Schools are proposed to be attached to Polytechnics. At the same time, it is also envisaged that some independent Junior Technical Schools should also be opened.

Industrial Training Institutes

7.39. The number of seats in the Industrial Training Institutes at the end of the Third Plan will be 19,160, out of which 7,184 seats are in the Haryana Region. In the tentative Fourth Five-Year Plan, it is proposed to add 10,000 seats. It is proposed to open 11 Industrial Training Institutes with an intake capacity of 250 each, and the rest of the addition will be by expansion of the existing Industrial Training Institutes.

Loans

7.40. Against the Third Plan outlay of Rs. 1.50 crores in this regard, the Fourth Plan envisages an outlay of Rs. 4.55 crores. Out of this about Rs. 1.50 crores would be required for old loanees and the rest of the amount, i.e., Rs. 3 crores or so would be available for being given to new entrants during the Fourth Plan period. The loan has been provided on an average payment of Rs. 1,100 per annum for 60 per cent of the Degree students and Rs. 700 per annum for 40 per cent of the Diploma/Draftsman students. The provision of such a loan is of great assistance for deserving students with insufficient means.

Recommendations

7.41. It has been seen in the Chapter on Industrial Development that the Haryana Region is lagging far behind

the Non-Haryana Region with regard to industrial development and that whatever industry is there, is largely concentrated in the satellite towns around Delhi. One of the essential pre-requisites for the dispersal of industry is the acquisition of technical skills by a large number of people from all economic levels within the region itself and for this purpose widespread dissemination of technical education is absolutely necessary. The quantitative and qualitative advance which will be made by the Haryana Region in respect of technical education during the Fourth Five-Year Plan will have a crucial significance for the pattern of industrial growth in the next 10/15 years.

7.42. In the field of technical education there are two broad issues:—

First.—It should be ensured that an equitable number of institutions of the various levels are actually located in the Haryana Region.

Second.—It is to be ensured that the people from the region get an adequate share in the admissions to the various institutions, particularly in the institutions located within the region. It will be necessary to examine the position separately in respect of these two issues.

Location of Technical Institutions

7.43. From the factual position given earlier, it will be clear that the position with regard to location of technical institutions in the Haryana Region is not very satisfactory. At the moment, there are three Engineering Colleges, i.e., at Chandigarh, Ludhiana and Patiala and all of them are outside the Haryana Region. A fourth Regional Engineering College is coming up at Kurukshetra. While it would certainly add to the potential for technical education, it is to be noted that it has no special importance for Haryana as admissions are made on all-India basis. The number of seats at the diploma and craftsman level is also higher in the Non-Haryana Region than that in the Haryana Region.

7.44. The spread of technical education is a pre-requisite for industrial development. A climate for industrialisation is yet to be created in the Haryana Region and people have to be

made industrial-minded. There is a wide gap in the matter of seats at the degree level and the Committee recommends that at least one Government Engineering College, over and above those provided in the draft Fourth Plan, should be established in the Haryana Region during this period. The Committee would also like to emphasise that special efforts will have to be made to take Haryana Region forward in the matter of industrial development during the Fourth Five-Year Plan and that for achieving this objective, it would be necessary to locate a larger number of institutions at the Polytechnic and I.T.I. level in the Haryana than what was warranted on a pure population basis.

Regional share in Technical Institutions

7.45. The guiding principle in respect of technical education, as enunciated by the Department, is to improve the competitive efficiency of our boys in the All-India Market and the Committee fully supports this objective. At the same time, it feels that steps must be taken to raise the competitive ability of the boys coming from the Haryana Region also and it should be ensured that they do get an adequate share of the facilities available in the State. As it is, it is not infrequent that the location of technical institutions in a backward region only helps in creating greater dissatisfaction, as the students from the local area are unable to get admissions in the institutions which are so visibly amidst them. The real problem is at the degree and the diploma level. The total number of seats at the degree and the diploma level is 3,000-4,000 and it should not be difficult to get at least 1,500—2,000 students from the Haryana Region who can compete with candidates from the other regions. Under the circumstances, the Committee recommends the following:—

(i) It has already been commended under General Education that the objective during the Fourth Five-Year Plan should be to establish at least one 'Quality' School in each tehsil in the Haryana Region. The Committee wants to emphasise that if raising the competitive efficiency of the boys from the Haryana Region is a definite objective, and it feels that it should be one, then the establishment of 'Quality' Schools as suggested by the Committee is an absolute 'must'. Unless

and until the higher-secondary base is strengthened generally, and a large number of 'Quality' Schools are opened in the Haryana Region, there seems to be no hope that the boys of the region would be able to compete with their counterparts in the other regions in any foreseeable future.

(ii) The idea under the Junior Technical Schools Programme is to catch the boys immediately after the middle standard and to give them technical training from the point of view of having terminal products who can enter the employment market. It has also been mentioned that a certain degree of flexibility is proposed to be introduced with a view to permitting boys who get first division in the 10th class to be admitted to the 1st year of the three-year polytechnic diploma course.

Since, the Junior Technical Schools will admit students after the middle standard, the Committee feels that it would be possible for a larger number of local students to get admissions in these institutions. These institutions will also give a definite technical bias to the whole educational system. The Department is proposing a huge expansion in as much as the number of seats proposed at the end of the Fourth Five-Year Plan is 6,570 as against 330 at the present moment. It is possible that the programme may have to be cut down because of certain ceilings for the country as a whole which may be enforced by the Government of India. But whatever be the final programme accepted for the Fourth Five-Year Plan, the Haryana Development Committee feels that a very large number of the institutions should be located in the Haryana Region, particularly as it is not getting its due share at the diploma and the degree level. The Committee has considered the matter carefully and is of the view that 50 per cent of the Junior Technical Schools should be opened in the Haryana Region.

(iii) As mentioned earlier, a loan provision of Rs. 4.55 crores exists in the tentative Fourth Five-Year Plan, out of which about 3 crores would be available for new entrants. In view of the lower economic capacity of the people in the Haryana Region than that in the Non-Haryana Region, as also the dire need for bringing up the Haryana Region in the technical sphere, a large portion of new loans during the Fourth Five-Year Plan should go to students from the Haryana Region. The Committee, accordingly, suggests that 50 per cent of the amount so provided should go to students from the Haryana Region.

CHAPTER VIII

WATER SUPPLY AND SANITATION

Rural Water Supply

The problem of providing water for drinking purposes is particularly acute in a number of tracts in the Haryana Region where the level of sub-soil water is very low and even where water is found, more often than not, it is brackish. The problem is acute in districts Mahendragarh and Gurgaon and there are large tracts in other districts which come under this category. The position worsens as we move towards the west and south-west, and, in certain areas, people still get drinking water from tanks and 'diggis'. The rainfall in this area is very scanty and in times of drought, even these tanks get empty. In certain areas, covered by the Bhakra irrigation system, the irrigation potential has not developed to the maximum desired extent because of difficulties in respect of drinking water supply. The magnitude of the problem can be visualised from the fact that out of 8,500 villages requiring water supply, 3,600 lie in the Haryana Region (another 3,000 villages are in the Hill Areas). In financial terms, the amount required for solving the problem in the Haryana Region alone is of the order of Rs. 40 crores.

8.2. As the problem is particularly acute in the South-Western parts of the region, a number of schemes have been prepared for providing water supply in this area. A scheme has been prepared for district Mahendragarh costing Rs. 6.24 crores for catering to the needs of 553 villages in district Mahendragarh and 85 villages in tehsil Loharu of district Hissar. It is proposed to filter water at Dadri and Bhiwani and also exploit the water resources of Dahina and Zainabad. Fifty per cent of the villages in tehsil Bhiwani are also without any reasonable water-supply arrangements and scheme for covering 16 villages (A-II) has been completed. There are other schemes (A-I, A-III, B-I, B-II) which can cover about 122 more villages. Similarly, a scheme worth Rs. 8 lakhs has been prepared for 21 villages in tehsil Rewari.

8.3. Against this background, it is worthwhile to visualise the present position. A provision of Rs. 3.55 crores was made for water supply (urban and rural) during the Third Five-Year Plan, but during the 'Emergency' this was one of the first schemes

to be axed and the provision was reduced to Rs. 2.45 crores. The provision for drinking water supply for the country as a whole for the Fourth Plan has been tentatively placed at Rs. 3.40 crores. The objective before the country, as Shri Asoka Mehta, Deputy Chairman, Planning Commission, explained during discussions with the Haryana Development Committee on 18th June, 1965, was to solve the drinking water supply problem in 2½ Five-Year Plans.

RECOMMENDATIONS

Outlay during Fourth Five-Year Plan

8.4. The Punjab State has provided only Rs. 5 crores in its draft Fourth Five-Year Plan, out of which Rs. 3.75 crores are provided for the rural water-supply schemes. Considering that the total amount required for the State as a whole is Rs. 60 crores, out of which Rs. 40 crores are for the Haryana Region, it will be readily realised that at the present rate it will take 25—30 years to solve this problem. The conclusion is obvious that though the provision for drinking water-supply schemes is of great significance for the Haryana Region, at the State level it is not being considered as such. The Haryana Development Committee feels that this situation needs to be rectified on an urgent basis and, accordingly, recommends that Rs. 20 crores should be made available in the Fourth Plan proposals. Only by doing so, it would be possible to solve the problem by the end of the Fifth Five-Year Plan.

8.5. It may be mentioned that schemes worth Rs. 85.65 lakhs already stand administratively approved but are being held up for want of funds. Schemes worth Rs. 7.80 crores have been forwarded by the Public Health Department to the Panchayats Department for arranging administrative approval, and schemes worth another Rs. 25.27 crores are already lying ready with the Department.

Water Supply for district Mahendragarh

8.6. As already mentioned, the total cost for providing water supply to scarcity-affected villages and towns in District Mahendragarh amounts to Rs. 6.24 crores. Since it may, in actual practice, be difficult for the Government to earmark funds of this order for this scheme, the Committee suggests that the scheme may be taken up in phases. The Committee asked the Public Health Department as to whether this could be done and the latter have stated that the programme can be implemented in 3-4 phases. The break-up of this scheme in those various phases is at Annexure 42.

The Committee would again like to emphasise the urgency of taking up water-supply scheme for district Mahendragarh and would suggest that, in case of paucity of funds, the scheme may be taken up in phases as indicated in the said Annexure.

Water Supply for tehsil Bhiwani

8.7. Out of the various schemes for this tehsil, only scheme A-II has so far been executed. The Committee was told by the local officials at Bhiwani that the scheme had not been functioning satisfactorily as the supply of canal water in the storage tank at Talwandi-Ruka, from where the 16 villages under the scheme were fed, was inadequate. Furthermore, breakdown at either the water-works at Talwandi-Ruka or at the distribution end at Siwani dislocates the water supply in all the 16 villages. It has, accordingly, been suggested that instead of having a large number of villages under one scheme, it will be more appropriate to have schemes for 4-5 villages each and pumping set/tube-well may be provided in one of these villages which may supply water to the other adjoining villages as well. An arrangement of this type would do away with the dependence on the uncertain canal water source and would, at the same time, ensure that the breakdown at any particular place does not affect a large group of villages. It was also stated that it would be possible to cut down capital costs in this manner.

In view of what has been said above, the Committee recommends that A-II scheme should be comprehensively reviewed before the work on A-I and A-III schemes is started by Government.

Other Problem Areas

8.8. Apart from district Mahendragarh and tehsil Bhiwani, the most acute problem is in tehsil Rewari and sub-tehsil Nahar of District Rohtak, which fall in the drought-affected areas. In District Gurgaon, there are large tracts in Nuh and Ferozepur Jhirka which have drinking water problem. There is scarcity of water in 100 out of 135 villages in tehsil Narwana. In District Karnal, water is brackish in a number of villages of Rajaund and Madhlauda Blocks. The shortage of drinking water is particularly acute in the Trilokpur and Morni areas in tehsil Naraingarh of district Ambala. The Committee wants to draw the attention of the Government to all these problem areas and earnestly hopes that steps will be taken to alleviate the suffering of the people as early as possible.

Urban Water-Supply and Sanitation

8.9. The low priority given to the water-supply schemes is, perhaps, due to a general notion that the provision of potable water supply is an 'amenities' programme which can wait till the productive potential of the people developes. On a close analysis of the situation, however, it is found that provision of urban water supply is indeed one of the pre-requisites for initiating the process of economic growth of the area. It was seen earlier that the process of urbanisation is lower in the Haryana Region, for, although the population of the non-Haryana Region is only 38 per cent higher, the urban population is almost double than that of the Haryana Region. One of the basic reasons for a slower rate of urbanisation is the inadequacy of drinking water-supply schemes. As an instance, it may be stated that a number of industries that came to Bahadurgarh because of certain other locational advantages, are facing a lot of difficulty on account of inadequate water supply in the town. It has been earlier mentioned in the Chapter on Industrial Development, that focal points should be developed for the growth of industry. The Haryana Development Committee feels that adequate provision of water supply in these towns would be a first 'must' from this standpoint.

8.10. The provision for urban water-supply schemes in the draft Fourth Five-Year Plan is only Rs. 1.25 crores. The overall position regarding urban water-supply schemes in the Haryana Region is that 36 towns, out of 59 towns, stand partially covered by these schemes. The Chief Engineer, Public Health, has stated that a sum of Rs. 10 crores would be required to meet the needs of the towns in the Haryana Region. Another sum of Rs. 11 crores would be required for Sewerage schems. The provision of Rs. 1.25 crores in the Draft Fourth Five-Year Plan is, thus, quite inadequate. The Committee recommends that at least Rs. five crores should be provided for the Haryana Region alone during the Fourth Five-Year Plan.

CHAPTER IX

OTHER ASPECTS OF DEVELOPMENT

Some of the major aspects of development have been dealt with in the preceding chapters and it has been seen that in almost all of these spheres, the Haryana Region is comparatively lagging behind. The Committee would not like to burden the Report by dwelling on each and every aspect of the development programme in the hope that sufficient indication has been given of the leeway that has to be covered in the development sphere. While the Committee hopes that the Government would make an endeavour to bridge the gap in all other spheres, it will very briefly like to bring the following other matters to the notice of the Government:—

(i) Health and Medical facilities.

(ii) Co-operation.

(iii) Welfare of Schedule Castes and Backward Classes.

(iv) Social Welfare.

(v) Tourism.

Health and Medical Facilities

9.2. The region-wise position regarding number of Hospitals, Dispensaries, Primary Health Centres and Maternity and Child Welfare Centres is given in Annexure 43. It will be seen that the Haryana Region is deficient in almost all the above categories. The region is particularly lagging behind in respect of rural Hospitals and Maternity and Child Welfare Centres. Besides this, there are only 334 beds in the Medical College at Rohtak against 1,805 beds in Government Medical Colleges in the Non-Haryana Region.

9.3. During the course of visits to the various districts, the Committee was informed that there was a general shortage of doctors and medical staff of all categories in almost all the districts. The problem was particularly acute in Mahendragarh district where only 40 per cent of the sanctioned staff was in position. Some of the other shortcomings that were brought to the notice of the Committee are as follows:—

(i) Proper buildings have not been provided for Primary Health Centres at a number of places. According

to the Department there are 81 such centres in the Haryana Region. 18 out of these centres have no buildings while buildings for 29 centres are still under construction.

(ii) The residential accommodation for doctors and other medical staff has either not been provided or is inadequate at most of the places.

(iii) There is a general shortage of lady doctors in all the districts. In Mahendragarh District, there was no lady doctor except one at Narnaul. Another example is that of Hissar where only a class-II post of lady doctor exists inspite of the fact that Hissar is the biggest district in the State. There is urgent need to upgrade this post to class-I grade.

(iv) Due to widespread prevalence of trachoma disease, there are large-scale rejections for recruitment to the army.

9.4. The Committee recommends that steps should be taken as early as possible to remove all the deficiencies listed above. The Committee would also like to stress the need for providing all the necessary staff and equipment at the Medical College, Rohtak, to bring it at par with the other medical institutions in the State. It has already been indicated that the provision made for medicines at the Rohtak hospital in 1964-65 was only Rs. 0.34 lakhs for 330 beds as against Rs. 8.14 lakhs for 662 beds at Patiala. The Committee hopes that the deficiency of the Medical College, Rohtak, in this regard would be duly removed and steps would be taken to ensure that the requirements of all the hospitals and dispensaries are met on an equitable basis.

9.5. The provision of one Medical College for the Haryana Region is not enough. With a view to overcoming the shortage of doctors as well as to provide better medical facilities to a large part of the Harvana Region, the Committee considers that one more Medical College should be established in the region during the Fourth Plan period.

9.6. The present trend is towards provision of specialised medical facilities. There is no hospital in the Haryana Region except one at Karnal which is providing specialised medical facilities. On the other hand a number of hospitals in the Non-Haryana Region are providing specialised medical facilities. The

Committee, therefore, recommends that all the district hospitals in the Haryana Region should be upgraded during the Fourth Plan period so as to provide specialised medical facilities.

Co-operation

9.7. The position regarding Agricultural Credit Societies has already been discussed in the chapter on Agriculural Production and it has been seen that the Haryana Region is lagging far behind the Non-Haryana Region in respect of credit societies. The weakness of the Haryana Region in this regard is, in fact, symptomatic of the weakness of the co-operative movement in the Haryana Region in general. What is true of credit societies is also true of co-operative marketing societies, co-operative consumer's stores as well as cooperative industrial, housing and labour societies. The fact of the matter is that the control over the apex cooperativ institutions is, in accordance with the existing bye-laws, with the representatives of the areas which are already developed in the co-operative sector with the result that the needs of the Haryana Region are not being fully appreciated. The matter will have to be looked into in great detail by the Government with a view to rectifying the present position, which, from the regional point of view, is wholly unsatisfactory.

Welfare of Scheduled Castes and Backward Classes

9.8. A number of schemes costing Rs. 4 crores are being provided in the tentative Fourth Five-Year Plan of the State for the welfare of Scheduled Castes and Backward Classes. In addition to this, Rs. 96 lakhs are being provided on the centrally-sponsored side. While it has not been possible for the Committee to assess the work done in the various regions during the Third Five-Year Plan, it is of the view that budgetary provision for the Fourth Five-Year Plan schemes should be worked out on the basis of population of Scheduled Castes and Backward Classes residing in the various regions of the State.

9.9. During the course of the visits of the Haryana Development Committee to the various districts, it was pointed out by the local representatives that the amount of subsidy given for the purchase of agricultural land and sites for building houses is insufficient. The Committee has considered the matter and is of the view that the total provision of funds under the scheme as well as the amount of subsidy to be given to individuals needs to be suitably enhanced.

Social Welfare

9.10. Apart from schemes, like old age pension scheme, foster care scheme, etc., which are administered directly from the Headquarters, the Social Welfare Department has set up a number of institutions both in the Haryana and Non-Haryana Region of the State which provide facilities to the destitudes and socially and physically handicapped persons. The Department should ensure that both in respect of such institutions as also other facilities adequate attention is given to the needs of the handicapped people in the Haryana Region.

9.11. Following unprecedented rains in 1964, the Social Welfare Department set up 16 welfare centres in the marooned villages of Rohtak and Gurgaon districts. These centres were intended to provide training to women folk in one craft or the other and to look after their children. These centres have proved very popular and need to be continued for sometime more.

Tourism

9.12. There are two places in the Haryana Region which need special mention in this regard. The first one is Kurukshetra, which is known throughout the country and indeed in the world as a place of Hindu pilgrimage. The Tiraths/Tanks and temples at this place are poorly maintained and there are hardly any tourist facilities. The location of the Kurukshetra University near this place has given it a special importance but nothing has been done as yet to improve the existing conditions. The Committee considers that urgent steps should be taken to remove these deficiencies and the place should be developed into a premier centre of pilgrimage and tourism.

9.13. The other place to which the Committee would like to make a pointed reference is Sohna which is situated within easy reach of the Delhi metropolitan area. The place is known for its hot springs, and, if properly developed, it can be a big health resort and tourist centre. It is learnt that the Government of India are willing to sponsor a scheme for the development of this place as a first-class tourist centre, with hostel and other facilities. The Committee would like to urge that this should be pursued vigorously with a view to its early implementation.

CHAPTER X

IMPLEMENTATION

We have already indicated the extent of the backwardness of the Haryana area in various fields of development. We have also attempted to state clearly and precisely the major needs of the area and have suggested the lines on which, in our view, an attempt should be made to meet them. As regards some of these needs, we have suggested specific allocation of funds or the proportion in which the funds available for various schemes of development in the Fourth Plan should go to Haryana. In cases in which we have made no such suggestions, the departments concerned will naturally have to work out the area's needs in financial terms.

10.2. We are also of the view that the districts of Haryana, markedly deficient in most of the fields of development, can be brought at par with the advanced districts of the Punjabi Region only if, during the Fourth Plan period, they are allowed sufficient financial weightage with regard to district-wise or regional schemes. These districts have been neglected so much during the last three Five-Year Plan that no less than 50 per cent of the total allocation for such schemes during the Fourth Plan will suffice to remove the existing deficiencies. The Budget for 1966-67 is currently under preparation and the extent to which the Government provides separate funds for various schemes relating to Haryana will be an indication of its earnestness to bring this area at par with the Punjabi Region. There are other projects, concerning the State as a whole. Some of these, like irrigation and power projects, have to be located at particular places. But there would be institutions and projects which could be located in Haryana Districts as suitably as anywhere else and we urge that the claims of Haryana Region in this regard should be borne in mind in future.

10.3. The Committee noted with great concern that not only were certain schemes, so necessary for the development of the area not provided in any of the earlier Plans, but, even the schemes which were actually sanctioned were not speedily executed either for want of sufficient financial provision or for

want of attention during implementation. A typical example which may be cited in this connection is the Western Jamuna Remodelling Project which has been hanging fire for the last 11 years. A very small portion of the total estimated expenditure of Rs. 18 crores for the project has been incurred so far. A common complaint made to us at places which we selected for visits was that not unoften the funds provided in the budget for certain schemes either lapsed for want of speedy utilisation or were diverted to other areas outside Haryana. It, accordingly, seems absolutely necessary that there is, in future, an effective machinery to watch and ensure the proper implementation of the development programme to be undertaken in the area.

10.4. We have recommended in the chapter relating to Industries that an Additional Director should be appointed in the Industries Department specially to look after the industrial development of the Haryana Region. We feel that similar arrangement should be made in other major departments like Agriculture, Animal Husbandry, Co-operation, Education, etc., etc. Then, as in the case of the Hill Areas, an officer of suitable seniority should also be appointed to coordinate the entire developmental activities for the Haryana Region as a whole. We are further of the view that the development of the Haryana Region should be made a special charge of one of the Cabinet Ministers. In addition, there must also be a 'Board' with a strong non-official element to continuously watch the implementation of various development programmes and to advise.

Representation in Services*

10.5. Another question to which we would like to draw special attention relates to the representation of Haryana in 'Services' under the Government. Annexure 44 indicates the woefully meagre share of the area in these Services. If the figures of Hill Areas of Simla and Kangra are eliminated, the percentage of the Haryana goes further down. This again results in continuing backwardness. The men in administration have much to their discretion even if they are not partial to their near and dear ones.

10.6. It is true that without amending the Constitution no reservation in services is possible for the backward areas,

*The official members of the Committee are not associated with the observations made in this regard.

yet there are some other ways open to the men at the top and in the body of administration. Whenever a strong and efficient man has found an important place in the selection of services, the candidates from backward areas have been encouraged and benefited. The Committee feels that special reasonable efforts should be made to help in raising the percentage of the Haryana people in the services. The following few suggestions are made in this direction:—

(1) By adopting local and regional competitive basis in the selection of subordinate services;

(2) By appointing efficient and qualified persons from Haryana on the Subordinate Services Selection Board and Public Service Commission. The Chairmen of the two Commissions should be at least alternately from the Haryana Region.

(3) By providing guidance and coaching to the candidates with high marks for the services.

(4) By granting more scholarships and loans to brilliant students of the area.

(5) By declaring the entire Haryana Region as 'backward areas,' for the purpose of services and admission to technical and professional institutions.

Compensatory Allowance and residential accommodation for field staff

10.7 Another connected question to which we would like to draw Government's pointed attention is in respect of postings and transfers of field personnel of the Development Departments. It is common knowledge that, because of lack of social amenities, there is reluctance on the part of competent staff to be posted in a number of tracts in the Haryana Region. While the departments must ensure that the right type of persons are posted in the backward tracts and retained there for a period of at least three years, it would also be appropriate to give certain inducements to staff to serve in such areas. In this connection, it may be mentioned that compensatory allowance to the extent of 10 per cent of the emoluments, subject to a minimum of Rs. 10 and maximum of Rs. 50 is being given to Government employees posted in Mahendragarh District whose total emoluments do not exceed Rs. 850 We have carefully considered the matter and are of the view that this

allowance should be further extended to all the drought-affected areas, i.e., tehsil Bhiwani and sub-tehsil Nahar of tehsil Jhajjar and other specially backward areas of the Region, i.e., Nuh and Ferozepur Jhirka.

10.8. One of the reasons for reluctance on the part of Government employees to be posted in the backward areas is the difficulty experienced by them in finding residential accommodation. Financial provision for residential accommodation for Government employees has to be made on the non-Plan side and funds are generally not allocated because of the low priority accorded to it. In actual fact, the absence of such accommodation is one of the major factors retarding the entire development efforts in the backward areas. We are, accordingly, of the considered view that a very high priority needs to be given to the construction of residential accommodation for the field staff of the development departments, particularly in areas which are declared as 'backward' by the State Government.

10.9. We hope that the recommendations made by us would be duly implemented by Government at an early date and that requisite provisions would be made in the Fourth Five-Year Plan for removing the existing backwardness of the Haryana Region as early as possible.

Acknowledgements

10.10. We wish to place on record our sense of deep appreciation and gratitude for the energetic and efficient manner in which our colleague, Shri L. C. Gupta, I.A.S., organised the whole work of the Committee, while sharing with us his full responsibilities as Member. It was a very stupendous task, which was carried out by him in record time most meticulously.

We also wish to place on record our appreciation for the hard work put in by Shri Rabinder Nath, Statistical Officer and other members of the staff who helped the Committee in expediting the Report.

SHRI RAM SHARMA.	GAJRAJ SINGH.
SHER SINGH.	NIHAL SINGH.
SURAJ MAL.	G. L. BANSAL.
SAROOP KRISHEN.	R. S. RANDHAWA.
A. N. KASHYAP.	HOSHIAR SINGH.
GURDIT SINGH.	L. C. GUPTA.

I am recording my note of dissent, which the Chairman is refusing to admit.

HARDWARI LAL.

Dated the 15th January, 1966.

Observations of Pt. Shri Ram Sharma, Chairman, Haryana Development Committee, Punjab, on the note recorded by Ch. Hardwari Lal.

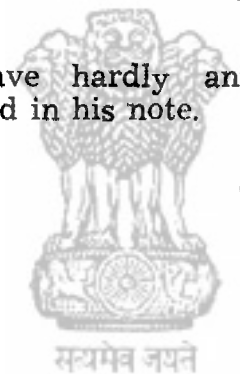
In his observations my esteemed colleague, Ch. Hardwari Lal, has discussed the controversial political matters, which are beyond the purview of the Committee under the terms of reference. The political matters discussed by him have no relevance with the subject matter of the Report, which, according to the terms of reference, is confined to the socio-economic aspects of the case. Therefore, I hold that his observations are not a 'note of dissent' in the real sense, and I rule that these observations will not form part of the Report.

My friend Ch. Hardwari Lal may send his note directly to the Government.

Personally, I have hardly any difference with his political views expressed in his note.

SHRI RAM SHARMA.

Dated the 15th January, 1966.



SUMMARY OF MAIN CONCLUSIONS AND RECOMMENDATIONS

Haryana Region (Population and Area)

1. The Haryana Region which consists of the districts of Rohtak, Guraon, Hissar, Karnal, Mahendragarh, Ambala, Jagadhri and Naraingarh Tahsils of Ambala District, and Jind and Narwana Tahsils of district Sangrur, is a compact area forming the southern part of the present Punjab State. The population of the Region is 75.27 lakhs and its area 16,835 square miles, forming 37.06 per cent and 35.59 per cent of the population and the area respectively of the State. This Region was among the most backward areas of the United Punjab before the Partition of the country. Although after the Independence, the Punjab as a whole has made rapid strides in various fields of development, the Haryana Region still continues to be glaringly backward *vis-a-vis* the Central Punjab Region in spite of the implementation of the three Five-Year Plans.

2. Before discussing the backwardness of the Harayana Region in the various socio-economic spheres, it may be stated that the rest of the State excluding the Haryana Region has been divided into two regions, i.e., the Hill Region and the Non-Harayana Region. The Hill Region is shown to include districts Simla, Kangra, Kulu, Hoshiarpur and Lahaul and Spiti. Hoshiarpur has been included in the Hill Region because 13 of 16 Blocks fall within the 'Hill Areas' for developmental purposes. The rest of the Punjab has been classified as the Non-Haryana Region. The population and area of this region comes to 50.98 per cent and 38.12 per cent respectively of the total population and area of the State. The population of the Non-Haryana is, thus, higher by 38 per cent and the area is higher by 7 per cent than that of the Haryana Region.

Extent of Backwardness of the Haryana Region

3. The extent of backwardness of the Haryana Region in the various socio-economic fields will be clear from the

following facts:—

(1) *Rural-Urban Composition.*—The Haryana Region has a much higher rural population than the Non-Haryana Region, this being 82.8 per cent in the Haryana Region as against 75.3 per cent in the Non-Haryana Region. The percentage of rural population in 10 out of 27 tahsils in the Haryana Region is over 90 per cent. Conversely, the urban population of the Haryana Region is only 17.2 per cent as against 24.7 per cent in the Non-Haryana Region. In absolute terms, the urban population of the Non-Haryana Region is almost double than that of the Haryana Region. Reference Chapter—I, Introductory.

(2) *Working Population in Primary, Secondary and Tertiary Sectors.*—26.8 per cent of the working population of the Haryana Region is engaged in the Agricultural Sector as against 17.5 per cent in this sector in the Non-Haryana Region. In absolute terms, the number of workers engaged in cultivation in the Haryana Region is 20.11 lakhs as against 18.14 lakhs in the Non-Haryana Region, even though the population of the Non-Haryana Region is actually 38 per cent higher. There is, thus, much greater dependence on agriculture and correspondingly, lesser development in the field of industry, commerce and services.

(3) *Extent of Irrigation.*—The gross area irrigated as a percentage of the total cropped area in the Non-Haryana Region is more than double than that in the Haryana Region. The actual position in the Haryana Region is still worse as the water allowance and the intensity of irrigation is much less than that in the Non-Haryana Region.

(4) *Percentage of villages/towns electrified.*—The percentage of villages/towns electrified is 18 in Haryana as against 29 in the Non-Haryana Region.

(5) Per Capita *Consumption of Electricity.* The *per capita* consumption of power in the Haryana Region is 37 as against 46 in the Non-Haryana Region. It has also to be borne in mind that most of the industrialisation is in the belt around Delhi, particularly, Faridabad, and this gets reflected in the *per capita* consumption.

(6) *Number of Registered Factories.*—The number of registered factories per lakh of population in the Haryana Region is only 14.9 as against 36.5 in the Non-Haryana Region.

(7) *Over-all literacy and female literacy.*—In respect of over-all literacy, the Non-Haryana Region has a distinctive lead of 35 per cent over the Haryana Region. The lead in respect of female education is almost 100 per cent.

Reference Chapter—II, Agricultural Production.

(8) *Area under Cash Crops.*—The area under cash crops in the Haryana Region is only 12.08 lakh acres as against 19.70 lakh acres in the Non-Haryana Region. The acreage under cash crops in the Non-Haryana Region is, thus, 63 per cent higher than that in the Haryana Region. The yields per acre in the Haryana Region, however, are comparable with those in the Non-Haryana Region and are, in fact, higher in respect of sugarcane, wheat and paddy.

(9) *Area under Food Crops.*—Correspondingly, the Haryana Region has much larger area under food crops than the Non-Haryana Region. The yields even in regard to food crops are low as 72 per cent of the total area under food crops is under low-yielding crops like jowar, bajra, barley and gram.

(10) *Fertilizers.*—The consumption of fertilizers in the Haryana Region is compartively very low, this being 6.8 tons per thousand acres as against 16.5 in the Non-Haryana Region.

(11) *Co-operative Credit.*—The amount of co-operative credit received in the Haryana Region per agricultural worker in 1963-64 was only Rs. 22.19 as against Rs. 61.80 in the Non-Haryana Region. The amount of credit per cropped acre is Rs. 4.21 in Haryana as against Rs. 9.90 in the Non-Haryana Region.

(12) *Improved Implements.*—Only 11.5 per cent of the iron ploughs in the State are in the Haryana Region. Similarly, only 13.8 per cent of oil engines with pumping-sets and 19.8 per cent of electric pumps for tube-wells are in the Haryana Region.

(13) *Productivity in the Agricultural Sector.*—The productivity per worker in the agricultural field in the Haryana Region is less than one-half of the productivity per worker in the Non-Haryana Region.

Reference Chapter—III, Animal Husbandry and Dairy Development.

(14) *Animal Husbandry.*—Even though Haryana is one of the best cattle breeding tracts in the country, the nmuber of milch cows and buffaloes per square mile in the region is less because of the poor retentive power of breeders and the paucity

of green fodder. The region is also lagging behind in respect of veterinary facilities and there is shortage of veterinary staff of various categories.

(15) *Area irrigated by canals.*—The gross area irrigated by canals is only 30.67 lakh acres in the Haryana Region, as against 48.95 lakh acres in the Non-Haryana Region, thereby indicating that the Non-Haryana Region has got the lead of 33 per cent over the Haryana Region in this respect. It is to be noted that rainfall in a large tract in the Haryana is scanty and erratic and there is general paucity of sub-soil water.

Reference Chapter—IV, Irrigation, Flood Control, Drainage and Anti-waterlogging.

(16) *Canal water actually received.*—The water allowance in the Western Jamuna Canal tract in the Haryana Region is much less than the water allowance admissible in the Upper Bari Doab Canal tract. The quantity of water actually received per acre in the Western Jamuna Canal tract (from October to June, 1962-63 and 1963-64) was almost half of that received in Upper Bari Doab Canal tract. Even in Bhakra areas of the Haryana Region, lesser water is actually received by the cultivators because of the fact that a number of the areas are at the tail-end and there are greater absorption losses because of the sandy texture of the soil. The actual water received per acre is still less, because in order to get the maximum benefit, the farmers in the Haryana Region spread the available water thinly over the maximum area.

(17) *Minor Irrigation.*—The area irrigated by wells pumping-sets/tube-wells, etc., in the Non-Haryana Region is four-times that of the Haryana Region. In a large tract in the Haryana Region, water is either too deep or brackish and the cost of drawing it out, too, is prohibitive.

(18) *Number of workers in manufacturing industries.*—The number of workers per thousand of population employed in the manufacturing industries is 57 per cent higher in the Non-Haryana Region than that in the Haryana Region.

Reference Chapter—V, Industries.

(19) *Number of Industrial Units (Large-scale and Small-scale Industries).*—Out of 670 licences issued for the State under the Regulation of Industries Act, 1951, only 268 are for locations in the Haryana Region and 150 of these are located in Faridabad, which is a satellite town of Delhi. In the small-scale sector, there are only 4,133 units in the Haryana Region as against 12,839 units in the Non-Haryana Region. The

number of units in small-scale sector in the Non-Haryana is, thus, three times that of the Haryana Region.

(20) *Number of Industrial Connections.*—The number of industrial connections for power in the Non-Haryana Region is more than double of those in the Haryana Region.

(21) *Consumption of Hard Coke for Industrial purposes.*—The consumption of hard coke in the Non-Haryana is about four times as much as that in the Haryana Region.

(22) *Allocation of Scarce Commodities.*—The allocation of plain sheets, plates and imported steel in the Non-Haryana Region is three to four times of that in the Haryana Region and of pig iron is about nine times. Only in respect of copper and zinc the position of the Haryana Region is somewhat better because of the utensil industry in Jagadhri and Rewari.

Reference Chapter—VI, Communications.

(23) *Communications.*—The metalled road mileage per 100 square miles is 17.8 in the Haryana Region, against 19.5 in the Non-Haryana Region. The region is, particularly, lagging behind in respect of rail communications as it has got only 781 miles of railway tract (out of which 348 is metre-gauge) as against 1,276 in the Non-Haryana Region. The over-all position of communication facilities in the Haryana Region is, thus, compartively unsatisfactory.

Reference Chapter—VII, General Education an Technical.

(24) *Number of Colleges.*—Only 8 Government Colleges are in the Haryana Region as against 16 in the Non-Haryana Region. Taking the Government and private colleges together, the number is 29 in the Haryana Region as against 46 in the Non-Haryana Region. The number of students at the college stage in the Non-Haryana Region is almost double of those in the Haryana Region.

(25) *Teachers' Training Institutions.*—Against 6 B.T./B.Ed., Government Colleges in the Non-Haryana Region, there is none in the Haryana, barring the State College of Education at Kurukshetra. Out of 20 full-fledged Junior Basic Training Schools in the State, there are only six in Haryana as against 10 in the Non-Haryana Region.

(26) *Model Schools/Sainik Schools.*—There are 12 Model Schools in the entire State out of which only 2 Junior Model Schools are in the Haryana Region. The region does not have a single Senior Model School or Model Higher Secondary

School or Model High School. There is only one Sainik School in Haryana as against two in the Non-Haryana Region. The quality of education imparted in Haryana leaves much to be desired.

(27) *Girls' Education.*—The Haryana Region is specially lagging behind in respect of girls' education. The Department has adopted a norm of one school, with two sections for 200 students. While the Non-Haryana Region has an excess of schools in most districts in accordance with this norm, there is a large deficiency in most of the districts of the Haryana Region.

(28) *Engineering Degree College.*—There are three Engineering Colleges in the Non-Haryana Region, situated at Chandigarh, Patiala and Ludhiana. Admissions to the Regional Engineering College at Kurukshetra, which is situated in the Haryana Region, are on the all-India basis and it has yet to develop as a full-fledged institution.

(29) *Polytechnics.*—There are six polytechnics in the Haryana Region, as against 8 in the Non-Haryana Region. The number of seats in the Non-Haryana Region is 39 per cent higher than that in the Haryana Region. It is commonly known that a large number of students from the Region are unable to find a place even in the institutions within the Region.

(30) *Drinking Water-supply Problem.*—In large tracts of the Haryana Region, rainfall is erratic, water is deep and brackish and people drink water even from tanks and 'diggis'. This will be clear from the fact that 3,600 villages out of a total of 8,500 villages, with an acute water-supply problem, lie in the Haryana Region. It is to be noted that the problem is one of providing a basic human necessity as in a large tract water is either not available or if it is available, it is unfit for human consumption.

Reference Chapter—VIII Water-supply and Sanitation.

(31) *Health and Medical Facilities.*—The Haryana Region is deficient with regard to the number of hospitals, dispensaries and maternity and child welfare centres. There is a general shortage of doctors and medical staff of all categories in almost all the districts. Proper buildings have not been provided for Primary Health Centres at a number of places and 18 such centres are without any building whatsoever.

Reference Chapter—IX, Other Aspects of Development.

(32) *Co-operation.*—The backwardness of Haryana in respect of co-operative credit has been referred to earlier. The same is true of co-operative marketing societies, co-operative consumers' societies as well as co-operative industrial, housing and labour societies. The control over the apex institutions, in accordance with the existing bye-laws, is with the representatives of the areas already developed in the co-operative sector with the result that needs of Haryana are not being fully appreciated.

Recommendations

4. The factual position given above clearly indicates that the Haryana Regional lags far behind the other Region in almost all the main developmental sectors in spite of the implementation of the three Five-Year Plans. These persisting imbalances in the development of the two regions have to be rectified in the shortest possible time and for removing the same, much higher allocations will have to be made for the region during the Fourth Five-Year Plan period. With this end in view, detailed recommendations have been made in the preceding chapters. The following are, in brief, the major recommendations:—

Reference Chapter—II, Agricultural Production.

(1) *Package Programme.*—At least one full district in the Haryana Region must be taken up for intensive cultivation on the lines of the 'Package Programme' in Ludhiana District. It is considered that district Karnal which has plenty of sub-soil water and is fairly well-covered by the irrigation system, is pre-eminently suited for being taken up in the Fourth Five-Year Plan for intensive development.

(2) *Soil Conservation and Water Management.*—Soil conservation and water management are of great importance for a large number of tracts in the Haryana Region. A well thought-out and integrated plan should be immediately formulated and substantial work should be undertaken during the Fourth Plan period.

(3) *Improved Seeds.*—The regional needs of Haryana should be kept in view while envolving and propagating improved varieties of seeds. In addition to setting up of more seed farms, the capacity of the existing ones should be raised to meet the requirements of the region.

(4) *Improved Implements.*—The number of approved fabricators should be increased in all the districts of Haryana

Region so as to overcome the deficiency in respect of improved implements. Loans for the purchase of tractors should be liberalised and 'service stations' should be opened at suitable stations.

(5) *Agricultural Education and Research.*—To strengthen the Punjab Agricultural University Campus at Hissar, there is need for setting up three more colleges, i.e., College of Food Science and Technology, College of Agricultural Engineering, and a College of Home Science and these should be provided for during the Fourth Plan period. In addition, there should be at least one more Agricultural College in the Haryana Region. There is also need for opening more agricultural research centres in the Region.

(6) *Co-operative Credit.*—Special attention needs to be given for strengthening the co-operative movement in the Haryana Region. The activities of the Land Mortgage Bank need to be greatly expanded in Haryana during the Fourth Plan period.

(7) *Storage Facilities for Preserving Foodgrains.*—Storage facilities in the Haryana Region should be considerably augmented during the Fourth Plan period.

Animal Husbandry and Dairy Development

(8) At least one Cattle Feed Factory should be set up in Haryana during the Fourth Plan period.

Reference Chapter III Animal Husbandry and Dairy Development.

(9) The number of Artificial Insemination Centres should be considerably increased in the Haryana Region and Government should ensure that staff posted at these centres is of the highest quality.

(10) The norms for the grant of subsidy to the high milk-yielding animals should be fixed separately for each district keeping in view the climatic and other prevalent conditions therein. Fifty per cent of the total amount earmarked for giving subsidy should be spent in the Haryana Region.

(11) There is need for increasing the number of Veterinary Hospitals and Dispensaries in the Haryana Region. These should be adequately staffed. Satisfactory arrangements for the purchase of medicines required for Veterinary Hospitals and Dispensaries should be made as the present

system of purchasing these through Zila Parishads is unsatisfactory.

(12) An intensive cattle development programme is proposed to be started by the Government of India which would provide intensive facilities for breeding, disease control and other veterinary aids. Districts Karnal and Rohtak have a high density of cows and she-buffaloes and at least one such project should be established in each of these districts.

(13) Haryana has a great potentiality for dairy development because of its proximity to Delhi. This should be fully exploited. An effort should be made to get funds to the extent of Rs. 75 lakhs required for developing cattle wealth in the milk-shed area of the Delhi Milk Scheme on the 'Centrally-Sponsored' side.

(14) According to the information given by the Milk Commissioner, Punjab, only 8 out of 20 small milk units are proposed to be set up in the Haryana Region in the Fourth Five-Year Plan. The Committee feels that the number so proposed is inadequate and recommends that a large share should be allotted to the Haryana Region.

Sheep and Wool

(15) The following measures should be taken for organising sheep breeding on a systematic basis:—

(i) Sheep and Wool Extension Centres should be multiplied so that a large number of breeders can use the quality rams maintained at these centres.

(ii) The Animal Husbandry Department should take over the shearing of sheep by establishing wool-shearing sheds.

(iii) The price of wool should be paid to breeders after proper grading.

(iv) Large-scale wool-grading centres should be established.

(v) The quality of indigenous sheep should be improved by selective breeding so as to increase the quality and production of wool per sheep.

(vi) For controlling epidemics and for providing veterinary facilities generally, there should be provision for a few mobile dispensaries.

(vii) To encourage large-scale breeding of quality sheep, Government should give assistance to breeders by way of loans and subsidies.

Irrigation

(16) *Major and Medium Irrigation.*—The Major and Medium Irrigation Schemes for Haryana, under execution are as follows:— Reference Chapter V Irrigation, Flood Control, Drainage and Anti-Water-logging

(i) The Gurgaon Canal.

(ii) The Western Jamuna Canal Remodelling Project.

(iii) The Western Jamuna Canal Feeder Project.

(iv) The Rewari Lift Scheme.

The total amount required for the completion of these schemes is Rs. 18 crores out of which only Rs. 6 crores have been spent so far. The Committee is strongly of the view that the remaining amount of Rs. 12 crores required for completing these projects should be provided in the Fourth Five-Year Plan.

(17) *Tubewells in the Western Jamuna Tract.*—For augmenting supplies in the Western Jamuna Canal, the Department has prepared a project for the installation of 300 tubewells of two cusecs each, costing Rs. 2.29 crores. This amount should be duly provided in the Fourth Five-Year Plan.

(18) *Dam on River Yamuna.*—Dams on river Yamuna and its tributaries are necessary for solving the irrigation problem of the Haryana Region. Work on these dams has to be undertaken by the U.P. and Himachal Pradesh Governments. It is imperative that work on these projects should be initiated during the Fourth Plan itself and for this purpose, an inter-State Commission should be brought into existence at an early date. Simultaneously, an attempt should be made to secure an appropriate share of water available from this source.

(19) *Water from Ravi-Beas Complex.*—Another very important means of solving the irrigation problem of Haryana Region on a long-term basis would be to earmark on equitable share of the waters available from rivers Beas and Ravi, for this Region. It is estimated that 7.2 million acre-feet of water would be available from these sources. In view of the great existing disparity, the Committee considers that bulk of this additional water must go to the Haryana Region.

(20) *Sohna Lift Scheme Stage-II and Stage-III.*—Sohna Lift Scheme Stage-II envisages irrigating 2.20 lakh acres of area in district Gurgaon and Sohna Lift Scheme Stage-III envisages irrigating 1.70 lakh acres in Gurgaon District and 1.15 lakh acres of Mahendragarh District. It is absolutely necessary that these projects should be taken straightway and water should be earmarked for them from the Ravi-Beas complex.

(21) *Water rates for Lift Irrigation.*—In line with the decision taken by the Government to charge flow irrigation rates for water from State tubewells, the water rate charged in areas irrigated by 'lifts' should be the same as for flow-irrigation.

(22) *Lining of Canals and Water Courses.*—There are considerable losses of canal water due to seepage in sandy tracts and lining of channels must be resorted to in such areas, particularly, in Hissar District for which a proposal already exists costing Rs. 75 lakhs. The main water course to the length of at least one mile should also be lined in such areas. Cultivators can be helped by advancing loans which can be recovered in easy instalments.

(23) *Minor Irrigation and Rural Electrification.*—Another method of removing the existing deficiency would be to tap sub-soil water by installing tubewells/pumping -sets in tracts where sub-soil water exists in sufficient quantity. At least 50 per cent of the total tentative allocation of Rs. 20 crores for the State for minor irrigation and loans should be earmarked for the Haryana Region during the Fourth Plan. Since the cost of installing pumping sets/tubewells in the Haryana Region is much higher than elsewhere, an incentive should be given by subsidising the cost of pumping sets/tubewells to the extent of 25 per cent.

(24) The Haryana Region is lagging behind in respect of rural electrification and it is estimated that a sum of Rs. 3 crores will be required to cover the existing deficiency of the Haryana Region *vis-a-vis* the Non-Haryana Region. The Committee feels that this amount should be duly provided over and above its normal entitlement from the rural electrification programme in the Fourth Five-Year Plan.

(25) Efforts should be made in the Fourth Five-Year Plan to electrify all towns/villages with a population of 2,000

and above in areas with large potential in respect of sub-soil water and scope for power-based industries, electricity should be extended irrespective of the population criteria.

(26) Trial bores should be made in the various tracts to find out if sub-soil water exists and power rigs should be provided for this purpose. These should be made available to the public on easy terms. A separate Agricultural Engineer should be provided for Haryana. who should maintain a nucleus organisation in each of the district.

Irrigation by Other Means

(27) There should be proper co-ordination between the irrigation and the drainage side and water in the drains should be diverted to irrigation channels wherever possible. A number of schemes in this connection have already been suggested by the State Level Committee on Drainage Schemes and Dr. Uppal, Director Land Reclamation, Irrigation and Power Research Institute, Punjab.

(28) The experiment being conducted by Dr. Uppal, in Rewari Tehsil and Mahendragarh District for charging sub-soil water by taking out diversion channel from Sahibi Nadi and other seasonal streams should be carefully watched and extended, if proved worthwhile.

District-wise Position

(29) *District Hissar.*—(i) In order to relieve the distress of tehsil Bhiwani, which is least irrigated, all the existing minors should be extended so as to irrigate an additional area of 16,000 acres. Lifts should also be installed for irrigating additional area as well as supplying drinking water.

(ii) Sub-soil water is available in the belt along river Ghaggar from Tohana to Ottu and electrification of this area should receive high priority. Sufficient water is also available in Rania Block and an effort should be made to get electricity from the Rajasthan side.

(iii) The Irrigation Department has suggested putting up 100 State tube-wells in the area along river Ghaggar and, this too, should be taken up during the Fourth Plan period.

(iv) The intensity of irrigation in the Rangoi tract should be increased by taking out a channel from river Ghaggar.

(v) In order to save the villages below Ottu from damage due to spreading of flood water, the scheme for the canalisation or river Ghaggar below Ottu should be completed as early as possible.

(30) *Rohtak District.*—(i) An area of 1.40 lakh acres in Nahar and Salahwas Blocks of Jhajjar Tehsil is without irrigation and can be irrigated by having a lift of about 85 feet. This is one of the drought-effected areas and irrigation facilities should be provided as a matter of high priority.

(ii) Minor irrigation programme should be stepped up in tehsil Sonepat and other central western part of the district where water is available.

(iii) One hundred State tube-wells of 2 cusecs each, should be sunk in the area between G.T. Road and Delhi Branch of the Western Jamuna Canal as suggested by the Irrigation Department.

(iv) The possibility of utilising water from Drain No. 8 in certain parts of the district, should be carefully considered.

31. *Gurgaon District.*—(i) Supply in the Agra Canal, which is under the control of the U.P. Government, is neither adequate nor timely. The Punjab Government should urge the U.P. Government to give over administrative control of the Punjab area covered by the Agra Canal to the Punjab Government. The water rate should also be brought down to the same level as prevailing in the Punjab.

(ii) Before a dam is built at Hasora across river Sahibi by the Rajasthan Government, it must be ensured that Punjab gets the same quantity of water as hither-to-fore.

(iii) There is sufficient water in the area along river Sahibi and the electrification project of 95 villages in the tract which stand sanctioned should be taken up for implementation as early as possible. To save villages from flood action, ring-bunds should be put up in 10—15 villages which are worst affected.

(iv) In Nuh and Ferozepore Jhirka, there is a sweet-water belt along the two ranges of Kala Pahar and Mehrauli range. Test bores in Taoru and Hathin areas have already been successful. There is ample sweet water along Landoha stream and in Palwal and Ballabhgarh tehsils. Special priority should be given for electrification in these areas.

(v) One hundred and thirty State tube-wells of 2 cusecs each should also be installed as suggested by the Irrigation Department.

(vi) The amount of Rs. 70 lakhs required for remodelling the existing bunds and constructing new bunds should be duly provided. Adequate funds should also be provided for the maintenance of bunds. The work connected with the maintenance and construction of fund should also be closely tied up with the soil conservation programme in the district.

(32) *Karnal District.*—(i) The district is ideally suited for a crash programme for minor irrigation as there is sufficient water on almost all parts in the district except Assand and Rajaund.

(ii) One hundred State tube-wells of 2 cusecs each have been suggested by the Irrigation Department in the eastern part of Panipat Tehsil and these should be taken up during the Fourth Five-Year Plan.

(iii) The partial canalisation of Saraswati down-stream of Bibipur Lake had the effect of depriving adjoining areas of the beneficial effect of the spreading of flood water. The whole position needs to be reviewed before proceeding further with this canalisation.

(33) *Mahendragarh District.*—(i) Bunds are being constructed on the Dohan and Krishnawati Nadis in the Rajasthan area which may have an adverse effect on the economy of the district. It has to be ensured that district Mahendragarh continues to get the same quantity of water from these rivulets as hithertofore. There is considerable water in wells along these two rivulets and power should be provided in this belt on a priority basis.

(ii) Diversion bunds have been constructed on Dohan and Krishnawati to take a part of the water in these nadis to the adjoining areas for charging the sub-soil water. The experiment should be carefully watched and extended, if proved successful.

(iii) Certain areas in tehsil Dadri are proposed to be irrigated by water from Drain No. 8. There is some apprehension that this may cause waterlogging because of the presence of kankar layers just under the top soil. The experiment should be carefully watched and extended, only if proved useful.

(iv) Trial bores, even at great depths should be made throughout the district. An officer with adequate organisation

and resources should be posted exclusively for this district and the farmers should not be required to pay in case the bore is not successful. Even in the case of successful bores, subsidy to the extent of 25 per cent should be given.

(34) *Ambala District.*—(i) A 215 foot-high earthern dam estimated to cost about Rs. 9.2 crores is proposed to be constructed on river Ghaggar near Chandi Mandir. Provision for this was made in the Third Five-Year Plan, but no work has yet been started. The project needs to be taken up urgently.

(ii) A number of tube-wells have been installed in tehsil Jagadhri for augmenting supplies in the Western Jamuna Canal. A suggestion has been made that these tubewells could serve a dual purpose and water from these should be made available to the local cultivators, in winter months when the water level in the area falls very low. This suggestion merits serious consideration.

(35) *Sangrur District.*—(i) Barwala Link is under execution for diverting Bhakra waters from Khanauri to the Sirsa Branch of the Western Jamuna Canal. The possibility of providing irrigation from this link in Narwana Tehsil should be seriously considered.

(ii) There is scope for extending minor irrigation programme in Kalayat Block of Narwana and Jind Block of tehsil Jind. Power needs to be extended in these areas on a priority basis.

(36) *Betterment Levy.*—There is little justification for imposing betterment levy in the Western Jamuna Canal tract and this should be withdrawn as early as possible.

Flood Control and Drainage

(37) Since the outfalls of the river Ghaggar as well as a number of drains in the Western Jamuna tract lie in the adjoining areas of Rajasthan, the U.P. and Delhi, arrangements should be devised for effective co-ordination and collaboration with the various authorities concerned with such inter-State co-ordination.

(38) Out of Rs. 28.35 crores incurred on flood control and drainage so far, only Rs. 7.8 crores have been spent in the Haryana Region. In view of the comparatively lesser attention

in the past, and the need for urgent action, at least 75 per cent of the provision of Rs. 25 crores made in the draft Fourth Five-Year Plan should be spent in the Ghaggar tract (including areas outside the Haryana Region) and in the Western Jamuna Canal tract.

(39) In view of the magnitude and complexity of the problem, at least one Chief Engineer should give his wholetime attention to the work of flood control and drainage in the two tracts (Ghaggar and W.J.C.) in which the Haryana Region falls.

(40) Proper co-ordination is required between all the agencies concerned with soil conservation. Co-ordination is also required between the drainage and irrigation side. At the same time schemes for the utilisation of flood waters should also be thoroughly examined with a view to their actual implementation during the Fourth Plan itself.

(41) In order to prevent seepage, lining of the main canals in Karnal District needs to be taken up very urgently during the Fourth Plan period. It will also be, simultaneously, necessary to instal a large number of shallow tubewells along the main canals and for this purpose electricity should be provided in this belt as a matter of high priority.

(42) The Hansi Branch below Munak generally and particularly between Anta and Jind has created extensive water-logging. If the Hansi area is transferred to the Bhakra system, the entire area between Anta and Rajthal can be saved from waterlogging. The water, thus, saved in the Western Jamuna Canal can be usefully utilised elsewhere.

(43) Bunds are required to be constructed on river Sahibi in Rajasthan as well as in district Gurgaon in the Punjab for flood protection. Since the area flooded by Sahibi Nadi falls in the Punjab, Rajasthan as well as Delhi territory, the scheme should be 'Centrally-sponsored' and the State Government should take up the matter with the Government of India accordingly.

Industries

(44) *Location of Central Projects.*—It is realised that taking industry to backward areas is not an easy task, but a start has to be made forthwith by locating the State-owned and State-sponsored projects in the backward areas. The first logical

Reference Chapter V Industries

step in this direction would be the location of industrial projects sponsored by the Government of India. A large number of projects are not tied down to locations from the point of view of availability of raw materials and in all equity some of these projects must be allotted to the Punjab during the Fourth Plan period. The Haryana Region, because of its proximity to Delhi, provides ideal locations for this purpose.

(45) *Location of State-sponsored projects.*—Apart from the Pig Iron Plant, which is State-owned and is being put up in Hissar in the Haryana Region because of the proximity of raw materials, a number of other projects would be State-sponsored during the Fourth Five-Year Plan period. The Committee is of the view that the bulk of these projects must be located in Haryana Region.

(46) General recommendations regarding dispersal of industry:

(i) The Department must have a conscious and deliberate policy for the dispersal of industry and the industrialisation of the Haryana Region should be a special responsibility of the Department. An officer of the rank of additional Director should be appointed for this purpose.

(ii) About a dozen 'focal points' should be taken up in the Haryana Region for development in a comprehensive way from the point of view of roads, provision for power, water supply, sanitation industrial and residential housing, etc. Some of these focal points should be in developed areas in the region while others should be in comparatively more backward areas. Funds of the order of Rs. five crores would be required for this purpose.

(iii) According to the policy announcement of 1963, subsidy equal to 20 per cent of the cost of building (excluding land) and machinery installed thereon would be given under certain conditions to the entrepreneurs taking industry to the backward areas. One of the conditions is that minimum investment in fixed assets should not be less than Rs. one lakh except in the case of industrial units set up in the Hill Areas where the limit is only Rs. 20,000. It is considered that

the concession allowed to the Hill Areas should also be made applicable at 'focal points' in the comparatively backward areas in the Haryana Region.

(iv) The concessions announced by the Finance Minister in the Budget Speech of 1965-66 should be made available for large and medium-scale industries as well as small-scale industry.

(47) Specific recommendations regarding assistance/ concessions for industry.

(i) The concession announced by the Finance Minister that land will be acquired and sold on 'no profit no loss' basis, does not go far enough. For the comparatively backward areas within the Haryana Region subsidy to the extent of at least 30 per cent should be given in respect of land for industrial and residential purposes.

(ii) The State Government must, either directly or through the Punjab Financial Corporation, or, through the proposed Industrial Development Corporation, provide the requisite finance for setting up of a large number of units in the Haryana Region.

(iii) Special quotas of 'scarce commodities' should be earmarked for industries located/to be located in the Haryana Region.

(iv) Power should be made available to entrepreneurs taking industries to the backward areas in the region at subsidised rates. The question of subsidising the cost of transmission lines, switch-gears and transformers, etc., in the comparatively backward area should also be urgently considered.

(v) Subsidy should be made available on freight charges to entrepreneurs taking industries to the comparatively backward areas in the region.

(48) *Sugar Industry.*—In addition to raising the capacity of the existing Sugar Mills, there is scope for installing at least two more sugar mills of two thousand tons capacity in each of the district of Rohtak and Karnal. There is scope for setting up another mill at either Jind or Narwana. A sugar mill of

smaller capacity can also be set up in tehsil Palwal of district Gurgaon. In addition to these mills, a number of khandsari units of improved type should also be set up in the Haryana Region during the Fourth Five-Year Plan.

(49) *Paper and chip board mill.*—A paper mill can be set up at Panipat, which can draw bagasse from the three sugar mills situated at Rohtak, Panipat and Yamunanagar. Government should also consider the possibility of setting up chip board factories in the Haryana Region, during the Fourth Plan period.

(50) *Cotton Textile Industry (Mill Sector).*—The Haryana Region has considerable locational advantages because of its proximity to the consuming markets and there is great scope for increasing the number of spindles and powerlooms in the Haryana Region in the Fourth Plan period.

(51) *Woollen Sector.*—In view of the availability of raw wool in the region, there is need for sanctioning more spindles and powerlooms for Haryana, during the Fourth Plan period.

(52) *Decentralised powerloom sector.*—In this sector, the Haryana Region has only 412 powerlooms as against 9,422 in the Non-Haryana Region. The Region is, thus, far behind in this important sector and special efforts should be made to increase the number of powerlooms during the Fourth Plan period.

(53) *Leather Industry.*

(i) There is an urgent need for developing the leather industry on a wider scale covering all aspects such as flaying, disposal of carcass, tanning and footwear in both urban and rural areas. For this purpose, it is necessary to set up flaying and carcass utilisation centres in the various districts of the Haryana Region.

(ii) A big State-sponsored tannery on the lines of the one existing at Kapurthala should be established in the Haryana Region during the Fourth Plan. The State should also give incentives to private entrepreneurs through participation in the share capital, so that a large number of private tanneries may come up in the region during the Fourth Plan period. A State-sponsored unit manufacturing about 1000 shoes a

day should also be established in the Haryana Region.

(54) *Oil Industry.*—Efforts should be made to have more oil mills in the large-scale sector in the Haryana Region during the Fourth Plan period. Where this is not possible, the available oilseeds should be crushed in improved type of village ghanis. Solvent extraction units should be set up in the region, particularly, in Karnal, Gurgaon and Mahendragarh districts.

(55) *Rice Milling.*—There is a scope for setting up of rice mills in the districts of Karnal and Ambala and Hansi Tehsil of district Hissar. The possibility of setting up of a factory based on rice bran should also be considered.

(56) *Barley.*—The area under barley in the Haryana Region is quite large. There is scope for resorting to its processing on a larger scale.

(57) *Problems of industrial centres.*—During tour of the various districts, a number of problems of the major industrial centres in the region such as Faridabad, Sonepat, Bahadurgarh, Panipat, Jagadhri and Rewari were brought to the notice of the Committee. These and other connected problems of these industrial areas need to be dealt with in a comprehensive way so as to take suitable measures for removing the existing deficiencies.

Communications

(58) *Expenditure on roads during Fourth Plan period.*— At least 66 per cent of the expenditure to be incurred in the plain areas, during the Fourth Plan period, should be in the Haryana Region.

Reference Chapter VI Communications.

(59) *New Trunk Road for Haryana.*—There is a pressing need for having at least one major road, which should connect as large a number of urban centres in the Haryana Region with the State Headquarters, as possible. This object can be achieved by having a trunk road of 22 feet width, offtaking from Ambala and going right upto Rewari, via Pehowa, Kaithal, Jind and Dadri.

(60) *Roads provided in various Plan periods.*—The roads which were included in various Plan programmes but

have not been completed so far should be constructed immediately.

(61) *New roads for Haryana.*—To remove the existing deficiency of Haryana Region in the matter of communicational facilities, 365 miles of new roads, as proposed by the B. & R., Department, should be taken up as a matter of highest priority during the Fourth Plan period.

(62) *Maintenance of roads.*—In addition to allowing the Haryana Region its proportionate share from the funds normally earmarked for the maintenance of roads, an additional sum of Rs. 50 lakhs per annum should be provided for the Region.

(63) *Famine roads.*—The roads started under the Famine Relief Roads Programme should be completed at the earliest.

(64) *Construction of bridges in Ambala District.*—A comprehensive plan for the construction of bridges should be drawn up for Ambala District and as a first step, bridges should be provided on the Ambala-Jagadhri and Ambala-Naraingarh roads.

(65) *Over-head bridges.*—Over-head bridges are required on the Delhi-Bahadurgarh road near Delhi Industrial Area, railway crossing at Yamunanagar and the railway crossing on the main highway passing through Hissar. These should be taken up at an early date.

(66) *Inter-state road co-ordination.*—Inter-state co-ordination is needed to link up the roads in Punjab territory with those in the Rajasthan territory.

(67) *Road transport.*—There is need for extension and improvement of road transport facilities in the Haryana Region.

General Education

Reference Chapter VII General Education and Technical Education.

(68) *Number of institutions (Middle and High School level).*—There are certain districts in Haryana which are deficient in respect of Middle and High Schools for boys. Almost all the districts in Haryana are deficient in respect of High Schools for girls. These deficiencies need to be removed at an early date.

(69) *Upgrading of schools.*—Cash contribution for the upgrading of primary schools to middle school standard and from middle to high school standard should be completely waived off in drought-affected areas and other areas officially declared as backward.

(70) *Quality of education.*—

(i) 60 per cent of the allocation likely to be made available by the Government of India for improving the quality of education in the Fourth Plan period should be spent in the Haryana Region.

(ii) At least one 'quality' school should be established in each of the tehsils in Haryana Region. The school should be properly staffed and equipped and should have adequate hostel facilities for students. The fee charges from the students should be the same as in the other higher secondary schools. This can be done by converting one of the existing higher secondary schools into a 'quality' school.

(iii) An effort should be made to secure at least two more Sainik Schools for Haryana during the Fourth Plan period.

(71) *Girls' Education.*—

(i) Residential accommodation should be provided for at least 75 per cent of the total requirements of women teachers in Haryana during the Fourth Plan period.

(ii) Loans and scholarships should be given at the middle, high school and J.B.T. level to attract talent from Haryana. Scholarships should also be made available at the college level.

(iii) The possibility of having separate schools for boys and girls at the middle school level, at least in the rural areas in Haryana, should be seriously considered.

(72) *College and Post-Graduate Education.*—

(i) The provision of only two Colleges for the Fourth Plan period for the State as a whole, is wholly

inadequate. In view of the great existing deficiency, the Committee is strongly of the view that provision should be made for at least six Government colleges for the Haryana Region during this period.

(ii) In order to further remove the deficiency in respect of college education, financial assistance should be made available to private organisations. The Committee recommends that this source should be fully utilised and the Government should assist by giving at least 50 per cent building grant and 90 per cent grant towards recurring expenditure.

(iii) The Panjab University should open at least two regional centres for Post-Graduate teaching in all subjects in the Haryana Region.

(iv) At least one College for Physical Education for boys should be opened in the Haryana Region.

(v) One Home-Science College for girls in the Haryana Region is an absolute necessity and must be provided for in the Fourth Five-Year Plan.

(vi) At least two to three Post-Graduate Teachers' Training Colleges should be opened in the region during the Fourth Plan period.

(vii) Greater attention should be paid to the qualitative aspect at the college and post-graduate level. Special attention should be given by the Department to the region by way of appointment of senior and qualified staff, and provision of buildings, laboratories, libraries, etc.

(73) *Kurukshetra University.*—The Kurukshetra University should be turned into a full-blown premier educational centre of the Haryana Region. A sum of Rs. 1 crore required for this purpose should be duly provided in the Fourth Plan period. The Kurukshetra University should further be turned into an affiliating University.

Technical Education

(74) *Location of technical institutions.*—At least one more Government Engineering College, over and above those provided in the Draft Fourth Plan should be established in Haryana during the Fourth plan period. A larger number of

institutions at the polytechnic and I.T.I. level should be established in Haryana than what was warranted on a pure population basis.

(75) *Junior Technical Schools.*—The Junior Technical Schools will admit students after the middle standard and as against 330 seats at the present moment, the additional seats proposed for the Fourth Five-Year Plan are 6,750. The location of a larger number of Junior Technical Schools in the Haryana Region would be one way of overcoming the backwardness of the region in respect of Technical Education. The Committee, accordingly, recommends that 50 per cent of the Junior Technical Schools should be opened in the Haryana Region.

(76) *Loans to students.*—To improve the competitive ability of the students from the region, loans must be given in a big way. The Committee recommends that 50 per cent of the amount provided for fresh loans should go to students from the Haryana Region.

(77) *Rural Water-Supply Scheme.*—Out of a total number of 8,500 villages with an acute water-supply problem, 3,600 lie in the Haryana Region. In financial terms the amount required for solving the problem in the Haryana Region alone is of the order of Rs. 40 crores. It is considered that an attempt should be made to solve this problem in the next 10 years or so. A sum of Rs. 20 crores should, accordingly, be provided for this region during the Fourth Five-Year Plan.

Reference Chapter VIII Water-Supply and Sanitation.

(78) *Water-supply for district Mahendragarh.*—A scheme has been prepared by the Public Health Department for providing water-supply to scarcity-affected villages and towns in district Mahendragarh, costing Rs. 6.24 crores. There is urgent need for initiating work on this scheme, and in case of paucity of funds it may be taken up in phases.

(79) *Water-supply for tehsil Bhiwani.*—The supply of water in 16 villages taken under the A-II Scheme is inadequate and there are frequent breakdowns. The local officials suggested that it would be more appropriate to have smaller schemes covering 4-5 villages each. The matter should be comprehensively reviewed before taking up other schemes.

(80) *Urban Water-Supply Schemes and Sanitation.*—Rs. 10 crore are required to meet the water-supply needs of the

towns in the Haryana Region. Another sum of Rs. 11 crores is required for sewerage schemes. In view of this, a sum of at least Rs. 5 crores should be provided during the Fourth Plan period.

Reference Chapter IX Other Aspects of Development.

(81) *Medical and Health,—*

(i) The deficiency of Haryana Region in the matter of Hospitals, dispensaries and maternity centres should be removed at an early date. Residential accommodation should be provided for doctors and other medical staff. Special steps should be taken to remove the shortage in respect of lady doctors.

(ii) The Medical College at Rohtak should be brought at par with other Medical Institutions in the State by providing all the necessary staff and equipment.

(82) *Co-operation.*—In accordance with the existing bye-laws the control over the appex co-operative institutions is with the representatives of the areas which are already developed in the co-operative sector, with the result that the needs of the Haryana Region are not fully appreciated. The matter should be gone into in great detail by the Government with a view to rectifying the present position.

(83) *Welfare of Scheduled Castes and Backward Classes.*—The Budgetary provisions in the Fourth Five-Year Plan for schemes for the welfare of Scheduled Castes and Backward Classes should be worked out separately on the basis of their respective population in the various regions.

(84) *Social Welfare.*—The Department should ensure that aedquate attention is given to Haryana in respect of location of institutions and other facilities. The centres opened by the Social Welfare Department for marooned villages of Rohtak and Gurgaon should be continued for some time more.

(85) *Tourism.*—Kurukshetra and Sohna are two premier tourist centres of Haryana and immediate steps should be taken for the development of these two places.

Implementation

Reference Chapter X Implementation.

(86) *District-wise and regional schemes.*—A weightage of at least 50 per cent should be given to the districts of Haryana in the district-wise and regional schemes during the

Fourth Five-Year Plan so as to bring them at par with the advanced districts of the Punjabi Region.

(87) *State-wide Projects.*—Some of the projects concerning the State as a whole, like Irrigation and Power Projects, have to be located at particular places. But there would be other institutions and projects which could be located in Haryana districts as suitably as anywhere else and the claim of the Haryana Region with regard to these should be fully borne in mind in future.

(88) *Machinery for implementation.*—Even the schemes which are actually sanctioned are not duly executed either for want of sufficient financial provisions or for want of attention during implementation. It, accordingly, seems absolutely necessary that there is in future an effective machinery to watch and ensure the proper implementation of developmental programmes in Haryana.

(89) *Arrangements in Development Department.*—It has already been recommended in the chapter relating to Industries that an Additional Director should be appointed in the Industries Department to look after the industrial development of Haryana. Similar arrangements should also be made in other major departments like Agriculture, Animal Husbandry, Co-operation, Education, etc., etc.

(90) *Arrangements for co-ordination and direction.*—As in the case of Hill Areas, an afficer of suitable seniority should be appointed to co-ordinate the entire developmental activities for the Haryana Region as a whole. The development of Haryana should be made the special charge of one of the Cabinet Ministers. In addition, there must also be a Board with a strong non-official element to continuously watch the implementation of various development programmes and to advise.

(91) *Representation in services.*—The representation of the people of Haryana in services is woefully inadequate and special efforts have to be made to raise their percentage in the various services. The following suggestions are made in this direction :—

(i) By adopting local and regional competative basis in the selection of subordinate services.

(ii) By appointing efficient and qualified persons from Haryana on the Subordinate Services Selection Board and Publuic Service Commission. The Chairmen of the two Commissions should be at least alternately from the Haryana Region.

(iii) By providing guidance and coaching to the candidates with high marks for the services.

(iv) By granting more scholarships and loans to brilliant students of the area.

(v) By declaring the entire Haryana Region as 'backward area' for the purpose of services and admissions to technical and professional institutions.

(92) *Compensatory Allawance.*—While the departments must ensure that the right type of persons are posted in the backward tracts and retained there for a period of at least three years, monetary inducements should also be given to Government employees to serve in such areas. With this end in view, the Compensatory Allowance already admissible in district Mahendragarh should be extended to all drought-affected areas, i.e., tehsil Bhiwani, sub-tehsil Nahar of tehsil Jhajjar and other specially backward areas in the Region, i.e., Nuh and Ferozepur-Jhirka.

(93) *Residential accommodation for field staff.*—A very high priority needs to be given to the construction of residential accommodation for the field staff of the development departments, as the absence of such accommodation is seriously retarding the entire developmental effort in the backward areas.

ANNEXURE 1
DISTRIBUTION OF POPULATION AND DENSITY OF POPULATION

(In lacs)

Serial No.	District	Population 1961			Area in Sq. Miles	Persons per Sq. Mile
		Rural	Urban	Total		
1	2	3	4	5	6	7
HILL REGION						
1	Simla ..	0.59 (51.9)	0.54 (48.1)	1.13 (0.6)	222	507
2	Kangra ..	10.19 (95.9)	0.44 (4.1)	10.63 (5.2)	5,283	201
3	Lahaul and Spiti ..	0.20 (100)	0.0 (0.0)	0.20 (0.1)	4,710	4
4	Hoshiarpur ..	10.87 (88.1)	1.46 (11.9)	12.33 (6.1)	2,222	555
	Sub-Total ..	21.85 (89.9)	2.44 (10.1)	24.29 (11.96)	12,437 (26.29)	195
NON-HARYANA REGION						
5	Jullundur ..	8.77 (71.5)	3.50 (28.5)	12.27 (6.0)	1,342	915
6	Ludhiana ..	7.08 (69.2)	3.15 (30.8)	10.23 (5.0)	1,323	773
7	Ferozepore ..	12.94 (79.9)	3.25 (20.1)	16.19 (8.0)	3,888	416
8	Amritsar ..	10.71 (79.8)	4.64 (20.2)	15.35 (7.6)	1,926	782
9	Gurdaspur ..	7.89 (79.8)	1.99 (20.2)	9.88 (4.9)	1,335	740
10	Patiala ..	7.90 (75.3)	2.59 (24.7)	10.49 (5.2)	1,926	545
11	Bhatinda ..	8.32 (78.8)	2.23 (21.2)	10.55 (5.2)	2,658	397
12	Kapurthala	2.64 (77.0)	0.79 (23.0)	3.43 (1.7)	643	535
13	Ambala ..	3.94 (71.4)	1.58 (28.6)	5.52 (2.7)	972	568
14	Sangrur	7.76 (80.8)	1.84 (19.2)	9.60 (4.7)	1,983	484
	Sub-Total ..	77.95 (75.3)	25.56 (24.7)	103.51 (50.98)	18,032 (38.12)	574
HARYANA REGION						
15	Hissar ..	12.99 (84.4)	2.41 (15.6)	15.40 (7.6)	5,363	287
16	Rohtak ..	12.26 (86.3)	1.94 (13.7)	14.20 (7.0)	2,332	609
17	Gurgaon ..	10.35 (83.4)	2.06 (16.6)	12.41 (6.1)	2,350	528
18	Karnal ..	12.35 (82.9)	2.56 (17.1)	14.91 (7.3)	3,075	485
19	Mahendragarh ..	4.95 (90.3)	0.53 (9.7)	5.48 (2.7)	1,342	408
20	Ambala ..	5.40 (65.7)	2.82 (34.3)	8.22 (4.0)	1,328	619
21	Sangrur ..	4.08 (87.7)	0.57 (12.3)	4.65 (2.3)	1,045	445
	Sub-Total ..	62.38 (82.8)	12.89 (17.2)	75.27 (37.06)	16,835 (35.59)	447
	Total Punjab ..	162.18 (79.9)	40.89 (20.1)	203.07	47,304	429

Notes.—1. Under columns 3 and 4 figures in brackets represent percentages to total population in the District/Region.

2. Under column 5 and 6 figures in brackets represent percentages to Punjab totals.

Source :—Census of India 1961.

ANNEXURE 2

WORKERS AND NON-WORKERS

Serial No.	District	As cultivators	As Agricultural Labourers	In Mining, Quarrying, Livestock, Forestry, Fishing, Hunting, and Plantations	At household Industry	In manufacturing other than Household Industry	In construction	In Trade and Commerce	In Transport, Storage and Communications	In other Services	Total Workers	Non-Workers	Grand Total (12+13)	Workers as percentage of total population
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
HILL REGION														
1	Simla ..	25,922	498	880	3,043	1,839	2,042	2,805	2,322	17,679	57,030	55,623	1,12,653	50.6
2	Kangra ..	4,30,723	8,032	6,606	27,680	3,771	4,426	6,843	2,771	37,666	5,28,518	5,34,000	10,62,518	49.7
3	Lahaul and Spiti ..	9,281	471	56	216	28	3,262	88	100	851	14,353	6,100	20,453	70.2
4	Hoshiarpur..	2,26,205	14,488	2,660	49,090	15,146	15,506	16,255	4,984	52,344	3,96,678	8,36,815	12,33,493	32.2
	Sub-Total	6,92,131	23,489	10,202	80,029	20,784	25,236	25,991	10,177	1,08,540	996,579	14,32,538	24,29,117	41·0
		(28.5)	(1.0)	(0.4)	(3.3)	(0.8)	(1·0)	(1·1)	(0.4)	(4.5)	(41.0)	(59.0)	(100.00)	
NON-HARYANA REGION														
5	Jullundur ..	1,22,731	26,698	2,281	40,673	34,950	7,557	27,364	11,842	77,978	3,52,074	8,75,293	12,27,367	28.7
6	Ludhiana ..	1,06,769	23,018	2,014	29,267	39,572	5,552	25,989	9,622	53,215	2,95,019	7,27,500	10,22,519	28.8
7	Ferozepur ..	2,94,784	73,043	5,583	35,768	18,462	15,149	33,387	10,716	68,123	5,55,015	10,64,101	16,19,116	34.2

8	Amritsar ..	1,67,168	43,523	5,655	29,157	56,081	9,262	46,187	18,887	82,080	4,58,000	10,76,916	15,34,916	29.8
9	Gurdaspur	1,18 054	23,089	2,995	24,586	20,457	4,924	18,800	8,512	63,742	2,91,259	6 96,735	9,87,994	29.5
10	Patiala ..	1,43,254	35,816	4,680	30,543	15,500	7,092	21,643	6,520	52,611	3,23,659	7,25,119	10,48,778	30.8
11	Bhatinda ..	2,03,695	41,088	4,637	25,572	9,605	6,573	22,896	7,135	36,517	3,63,748	6,94,429	10,50,177	34.2
12	Kapurthala	49,080	4,837	955	6,885	10,676	1,985	6 572	2,265	15,230	98,485	2,45,293	3,43,778	28.6
13	Ambala ..	76,221	11,409	1,863	14,631	10,816	13 059	9,688	7,882	38,799	1,84,368	3,67,350	5,51,718	33.4
14	Sangrur ..	2,05,139	35,686	5,707	29,613	9,507	4,522	18,314	3,532	31,044	3,43,064	6,16 798	9,59,862	35.7
	Sub-Total	14,92,895	3,21,207	36 400	2,66,695	2,25,626	75,675	2,30,840	87,013	5,25,340	32,61,691	70,89,534	1,03,51,125	31.5
		(14.4)	(3.1)	(0.4)	(2.6)	(2.2)	(0.7)	(2.2)	(0.8)	(5 1)	(31.5)	(68.5)	(100.0)	
HARYANA REGION														
15	Hissar ..	4,71,695	41,628	3,158	25,513	18 250	9,020	27,224	6,844	42,824	6,46,156	8,94,352	15,40,508	41.9
16	Rohtok ..	3,47,018	47,364	2,705	43,555	18,837	5,356	22,884	7,014	58,837	5,53,570	8,66,821	14,20,391	38.9
17	Gurgaon ..	3,20,201	22,663	2,623	33,148	19,851	7,027	19,005	9,230	53,910	4,87,658	7,53,048	12,40,706	39.4
18	Karnal ..	2,93,569	49,465	3,992	42,189	19,289	7,999	27,439	6,513	58,628	5,09,083	9,81,347	14.90.430	34.2
19	Mah ndragarh	1,68,660	4,283	1,364	12,982	2,953	1,816	5,708	1,260	14,668	2,13,694	3,34,156	5,47,850	39.1
20	Ambala ..	1,04,681	15,752	2,937	22,162	25,185	6,135	18,486	12,040	56,800	2,64,178	5,57,581	8,21,759	32.1
21	Sangrur ..	1,05,881	17,944	2,769	14,576	3,283	1,979	7,894	2,381	11,830	1,68,537	2,96,289	4,64,826	36.2
	Sub-Total	18,11,705	1,99,099	19,548	1,94,125	1,07,648	39,332	1,28,640	45,282	2,97,497	28,42,876	46,83,594	75,26,470	37.8
		(24.2)	(2.6)	(0.3)	(2.6)	(1.4)	(0.5)	(1.6)	(0.6)	(3.9)	(37.7)	(62.3)	(100.0)	
	Total Punjab	39,96,731	5,43,795	66 150	5,40,849	3,54,058	1,40,243	3,85,471	1,42,472	9,31,377	71,01,146	1,32,05,666	2,03,06,812	35.0
		(19 7)	(2.7)	(0.3)	(2.7)	(1.7)	(0.7)	(1.9)	(0.7)	(4.6)	(35.0)	(65.0)	(100.0)	

Note.—Figures in brackets represent percentages to total population in the Region.

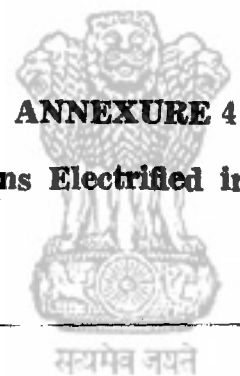
Source:—Census of India, 1961.

ANNEXURE 3

GROSS AREA OF CROPS IRRIGATED AS PERCENTAGE OF TOTAL CROPPED AREA

Serial No.	District	1955-56	1960-61	1961-62	1962-63	1963-64
1	2	3	4	5	6	7
	HILL REGION					
1	Simla ..	..	25.6	23.7	23.1	23.1
2	Kangra ..	21.5	22.2	21.2	22.4	21.9
3	Lahaul & Spiti ..	..	..	100.0	100.0	100.0
4	Hoshiarpur ..	11.3	15.1	11.8	12.5	12.8
	Percentage for Hill Region ..	16.1	18.6	16.3	17.4	17.4
	NON-HARYANA REGION					
5	Jullundur ..	61.9	64.1	61.2	62.1	66.7
6	Ludhiana ..	58.3	59.3	61.1	62.3	63.1
7	Ferozepur ..	63.9	66.3	65.9	65.8	68.1
8	Amritsar ..	84.7	87.2	85.4	85.5	89.5
9	Gurdaspur ..	37.1	43.5	37.3	39.1	43.5
10	Patiala ..	41.2	40.7	46.7	45.2	47.1
11	Bhatinda ..	49.0	55.2	55.4	56.1	52.7
12	Kapurthala ..	60.5	62.1	61.7	73.4	73.9
13	Ambala ..	16.7	18.1	13.7	16.1	17.7
14	Sangrur ..	57.0	55.9	55.5	57.8	74.1
	Percentage for Non-Haryana Region ..	57.0	58.1	58.2	59.3	62.8
	HARYANA REGION					
15	Hissar ..	27.0	30.2	30.5	36.6	40.0
16	Rohtak ..	33.1	31.1	33.1	32.0	34.4
17	Gurgaon ..	10.3	11.6	9.9	12.1	13.2
18	Karnal ..	37.1	34.8	38.0	36.1	40.0
19	Mahendragarh ..	2.3	4.0	5.2	5.4	6.0
20	Ambala ..	2.9	5.6	5.7	6.5	6.6
21	Sangrur ..	32.9	42.8	50.0	45.6	30.7
	Percentage for Haryana Region	24.0	25.5	27.6	28.7	29.9
	Punjab State ..	38.5	39.9	41.1	42.2	44.4

Source :—Statistical Abstract of Punjab.



ANNEXURE 4

Village/Towns Electrified in Punjab

ANNEXURE 4

VILLAGES/TOWNS ELECTRIFIED IN PUNJAB

Serial No.	District	Total No. of villages/ towns in each district	*Villages/Towns Electrified up to*			1964-65 *Population*								Electrified villages/ towns as percentage to total villages/ towns
			Beginning of 1st Plan	End of 1st Plan	End of 2nd Plan	Less than 1,000	1,001 to 2,000	2,001 to 5,000	5,001 to 10,000	10,001 to 50,000	50,001 to 1,00,000	Above One lac	Total (Cols. 7 to 13)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
HILL REGION														
1	Simla ..	1,165	8	8	32	119	3	1	..	..	..	..	123	11
2	Kangra ..	838	3	93	231	247	54	35	8	2	..	..	346	41
3	Lahaul & Spiti ..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	Hoshiarpur ..	2,053	1	17	133	216	56	21	4	1	..	..	298	14
	Sub-Total ..	4,055	12	118	396	582	113	57	12	3	..	..	767	19
NON-HARYANA REGION														
5	Jullundur ..	1,154	10	127	290	235	101	34	9	5	..	1	385	33
6	Ludhiana ..	816	2	30	203	233	68	30	1	3	..	1	336	41
7	Ferozepur ..	1,457	4	27	141	171	74	32	8	6	..	..	291	20
8	Amritsar ..	1,162	19	169	664	558	171	69	6	1	..	2	807	69
9	Gurdaspur ..	1,465	23	170	410	490	83	29	1	6	..	..	609	42
10	Patiala ..	1,581	3	28	114	254	19	15	4	6	..	1	299	19
11	Bhatinda ..	606	2	4	31	24	38	19	5	4	..	..	90	15

12	Kapurthala ..	701	2	15	59	66	30	8	..	2	..	..	106	15
13	Ambala ..	1,373	..	12	89	135	18	10	2	1	1	..	167	12
14	Sangrur ..	780	..	4	69	62	37	17	6	5	..	..	127	16
	Sub-Total ..	11,095	85	586	2,070	2,228	639	263	42	39	1	5	3,217	29
	HARYANA REGION													
15	Hissar ..	1,014	..	7	84	91	47	31	8	5	..	..	182	18
16	Rohtak ..	768	..	25	131	99	81	67	8	3	..	..	258	34
17	Gurgaon ..	1,459	1	17	135	142	38	38	6	5	..	..	229	16
18	Karnal ..	1,331	2	61	162	145	55	46	6	2	2	..	256	19
19	Mahendragarh ..	562	..	..	18	47	13	8	2	1	.	..	71	13
20	Ambala ..	1,055	..	9	69	103	14	8	2	1	1	..	129	12
21	Sangrur ..	306	..	2	27	25	15	6	2	2	..	..	50	16
	Sub-Total ..	6,495	3	121	626	652	263	204	34	19	3	..	1,175	18
	Total Punjab ..	21,646	100	825	3,092	3,462	1,015	524	88	61	4	5	5,159	24

Source .—Punjab State Electricity Board.

ANNEXURE 5

PER CAPITA CONSUMPTION OF ELECTRICITY IN 1963-64

Serial No.	District	Estimated population (in lakhs)	Energy sold (in lakh kW.)	*Per capita* consumption of electricity (in kW.)
1	2	3	4	5
	HILL REGION			
1	Simla ..	1.14	16.46	14
2	Kangra ..	10.94	44.82	4
3	Lahaul and Spiti ..	0.23	..	..
4	Hoshiarpur ..	12.64	155.58	12**
	Sub-Total ..	24.95	216.86	9
	NON-HARYANA REGION			
5	Jullundur ..	12.67	649.83	51
6	Ludhiana ..	10.77	671.44	62
7	Ferozepore ..	17.05	464.61	27
8	Amritsar ..	15.72	1,178.41	75
9	Gurdaspur ..	10.20	379.18	37
10	Patiala ..	11.21	415.68	37
11	Bhatinda ..	11.27	153.94	14
12	Kapurthala ..	3.55	357.17	100
13	Ambala ..	6.04	606.33	100
14	Sangrur ..	10.13	170.19	17
	Sub-Total ..	108.61	5,046.78	46
	HARYANA REGION			
15	Hissar ..	16.85	452.67	27
16	Rohtak ..	14.96	310.47	20
17	Gurgaon ..	13.10	632.54	48
18	Karnal ..	16.18	403.18	25
19	Mahendragarh ..	5.74	261.88	45
20	Ambala ..	8.66	870.00	100
21	Sangrur ..	4.91	82.39	17
	Sub-Total ..	80.40	3,013.13	37
	Grand Total ..	213.96	8,276.77	39

**Excluding Nangal Fertilisers' consumption.

Source.—Punjab State Electricity Board.

ANNEXURE 6

NUMBER OF REGISTERED FACTORIES AND WORKERS EMPLOYED IN PUNJAB ON 31ST DECEMBER, 1964

Serial No	District	Number of registered factories					Number of Registered working factories	Average Number of workers employed in working factories
		Under Section 2-m(i)	Under Section 2-m(ii)	*Under Section 85* With Power	*Under Section 85* Without Power	Total		
1	2	3	4	5	6	7	8	9
	HILL REGION							
1	Simla ..	8	..	7	..	15	13	1,060
2	Kangra ..	12	2	7	..	21	19	227
3	Lahaul and Spiti ..	..	..	..	..	..	..	..
4	Hoshiarpur ..	67	8	34	..	109	89	4,528
	Sub-Total	87 (2.1)	10 (7.3)	48 (5.9)	.. (..)	145 (2.9)	121 (2.6)	5,815 (3.5)
	NON-HARYANA REGION							
5	Jullundur ..	480	19	97	..	596	556	14,772
6	Ludhiana ..	704	30	88	6	828	778	19,016
7	Ferozepur ..	106	2	59	..	167	150	7,097
8	Amritsar ..	1,071	27	94	1	1,193	1,044	27,428
9	Gurdaspur ..	263	1	73	..	337	307	7,834
10	Patiala ..	157	2	32	..	191	179	8,226
11	Bhatinda ..	84	..	48	..	132	106	1,952
12	Kapurthala ..	119	..	11	..	130	119	4,688
13	Ambala ..	66	..	20	..	86	86	8,832
14	Sangrur ..	70	2	44	..	116	100	2,649
	Sub-Total ..	3,120 (76.5)	83 (60.6)	566 (69.0)	7 (100.0)	3,776 (74.8)	3,425 (74.8)	1,02,494 (61.7)
	HARYANA REGION							
15	Hissar ..	107	7	38	..	152	132	8,372
16	Rohtak ..	110	2	34	..	146	136	6,094
17	Gurgaon ..	253	1	26	..	280	259	21,97
18	Karnal ..	116	26	55	..	197	184	5,477
19	Mahendragarh ..	4	1	2	..	7	7	823
20	Ambala ..	273	7	44	..	324	296	14,728
21	Sangrur ..	11	..	7	..	18	18	318
	Sub-Total ..	874 (21.4)	44 (32.1)	206 (25.1)	.. (—)	1,124 (22.3)	1,032 (22.6)	57,788 (34.8)
	Total Punjab ..	4,081	137	820	7	504	4,578	1,66,097

Note.—2m(i) denotes factories with more than 10 workers with power.

2m(ii) denotes factories with more than 20 workers without power.

Under Section 85 are classsified hazardous and dangerous occupation specially notified irrespective of the number of workers.

Source :—Labour Commissioner, Punjab.

ANNEXURE 7

LITERACY IN PUNJAB—RURAL AND URBAN AREAS

Literate and Educated Persons

Serial No.	District	*Male*			*Female*			*Total*		
		Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
1	2	3	4	5	6	7	8	9	10	11
HILL REGION										
1	Simla ..	11,506	24,427	35,933	2,578	10,627	13,205	14,084	53,064	49,138
2	Kangra ..	172,073	17,693	189,766	52,643	7,001	59,644	224,716	24,694	249,410
3	Lahaul and Spiti ..	3,247	..	3,247	332	..	332	3,579	..	3,579
4	Hoshiarpur ..	206,043	50,017	256,060	73,080	26,543	99,623	279 123	76,560	355,683
	Sub-Total ..	392,869	92,137	485,006	128,633	44,171	172,804	521 502	136,308	657,810
	..	(35.2)	(64.2)	(38.5)	(12.0)	(44.0)	(14.8)	(23.9)	(55.9)	(27.1)
NON-HARYANA REGION										
5	Jullundur ..	159,968	117,098	277.066	69,336	66,608	135,944	229,304	183,706	413,010
6	Ludhiana ..	137,913	104,325	242,238	64,047	64,965	129 012	201,900	169,250	371,250
7	Ferozepur ..	166,823	99,678	266,501	50,499	48,188	98,687	217,322	147,866	365,188
8	Amritsar ..	156,259	148,470	304,729	63,313	88,100	151,413	219,572	236,570	456,142
9	Gurdaspur ..	114,241	63,945	178,186	40,341	31,017	71,358	154,582	94,962	249.544
10	Patiala ..	104,880	79,687	184,488	31,265	44,466	75,731	136,066	124,153	260,219
11	Bhatinda ..	97,184	56,780	153,964	20,404	25,294	45,698	117,588	82,074	199,662
12	Kapurthala ..	43,727	24,748	68,475	17,316	15,131	32,447	61,043	39,879	100,922

13 Ambala ..	65,762	56,966	122,728	18,541	29,763	48,304	84,303	86,729	171,032
14 Sangrur ..	90,964	42,587	133,551	24,631	20,264	44,895	115,595	62,851	178,446
Sub-Total .	1,137,642	794,284	1,931,926	399,693	433,796	833,489	1,537,335	1,228,080	2,765,415
	(27.1)	(56.3)	(34.5)	(11.5)	(37.9)	(17.6)	(19.8)	(48.1)	(26.7)
HARYANA REGION									
15 Hissar ..	148,291	66,812	215,103	23,640	29,238	52,878	171,931	96,050	267,981
16 Rohtak ..	184,194	58,998	243,192	30,722	29,029	59,751	214,916	88,027	302,943
17 Gurgaon ..	144,163	61,347	205,510	19,760	28,925	48,685	163,923	90,272	254,195
18 Karnal ..	132,803	74,068	206,871	25,987	40,149	66,127	158,781	114,217	272,998
19 Mahendragarh ..	72,578	14,124	86,702	7,190	4,742	11,932	79,768	18,866	98,634
20 Ambala ..	73,468	95,698	169,166	20,587	51,238	71,825	94,055	146,936	240,991
21 Sangrur ..	33,234	14,467	47,701	2,800	5,928	8,728	36,034	20,395	56,429
Sub-Total	788,731	385,514	1,174,245	130,677	189,249	319,926	919,408	574,763	1,494,171
	(23.7)	(55.1)	(29.2)	(4.5)	(32.1)	(9.1)	(14.7)	(44.6)	(19.8)
Total Punjab	2,319,242	1,271,935	3,591,177	659,003	667,216	1,326,219	2,978,245	1,939,151	4,917,396
	(26.9)	(56.4)	(32.9)	(8.7)	(36.4)	(14.1)	(18.4)	(47.4)	(24.2)

Source.—Census of India, 1961.

Note.—Figures in brackets represent percentage of literate persons to total number of persons in the region.

ANNEXURE 8

STATE INCOME ESTIMATES OF THE PUNJAB AT CURRENT PRICES, 1961-62

(Rupees in lacs)

Sectors	Hill Region	Non-Haryana Region	Haryana Region	Punjab State
1	2	3	4	5
1. Agriculture ..	2,625.91	21,424.92	10,452.03	34,502.86
2. Animal Husbandry ..	897.24	6,270.16	4,068.82	11,236.22
3. Forestry ..	318.74	57.49	71.26	447.49
4. Fishery ..	8.39	10.71	2.90	22.00
5. Mining ..	7.20	6.69	57.07	70.96
6. Factory Establishments ..	191.22	2,664.56	1,044.56	3,900.34
7. Small Enterprises ..	1,136.97	4,731.22	2,980.13	8,848.32
8. Public authorities ..	1,041.80	3,560.93	2,126.60	6,729.33
9. Other Commerce and Transport ..	751.90	6,431.60	3,359.25	10,542.75
10. Banking and Insurance ..	46.85	348.94	121.66	517.45
11. Professions and Liberal Arts ..	422.07	2,784.14	1,255.27	4,461.48
12. Home Property ..	200.34	715.07	381.81	1,297.22
13. Total ..	7,648.63	49,006.43	25,921.36	82,576.42
14. *Per-capita* Income (in rupees) ..	310	467	339	401

Note:—Estimates for Ambala and Sangrur Districts have been bifurcated into the two regions on population basis.

Source:—Economic and Statistical Organisation, Punjab.

ANNEXURE 9

CLASSIFICATION OF AREA, 1963-64

(In thousand acres)

Serial No.	District	Total area according to village papers	Area under Forests	Land not available for cultivation	Other uncultivated land except current fallows	Fallow land	Net area sown	Area sown more than once	Total cropped area (8+9)
1	2	3	4	5	6	7	8	9	10
HILL REGION									
1	Simla ..	142	3	16	100		23	16	39
2	Kangra ..	4,034	605	2,632	222	87	488	322	810
3	Lahaul & Spiti ..	2,369	..	2,358	5	(a)	6	..	6
4	Hoshiarpur ..	1,422	36	574	58	38	716	261	977
	Sub-Total ..	7,967 (26.3)	644 (71.4)	5,580 (68.8)	385 (30.3)	125 (10.3)	1,233 (6.6)	599 (11.3)	1,832 (7.6)
NON-HARYANA REGION									
5	Jullundur ..	859	(a)	150	1	67	641	145	786
6	Ludhiana ..	926	3	94	47	20	762	235	997
7	Ferozepur ..	2,493	..	189	119	146	2,039	396	2,435
8	Amritsar ..	1,258	1	181	142	81	853	392	1,245
9	Gurdaspur ..	854	29	200	..	90	535	211	746
10	Patiala ..	1,146	16	112	28	76	914	219	1,133
11	Bhatinda ..	1,702	2	102	13	17	1,568	228	1,796
12	Kapurthala ..	412	1	108	3	13	287	85	372
13	Ambala ..	626	48	136	101	26	315	94	409
14	Sangrur ..	1,273	1	110	33	38	1,091	310	1,401
	Sub-Total ..	11,549 (38.1)	101 (11.2)	1,382 (16.8)	487 (38.4)	574 (48.4)	9,005 (47.9)	2,315 (44.8)	11,320 (47.0)
HARYANA REGION									
15	Hissar ..	3,444	(a)	334	105	243	2,862	642	3,504
16	Rohtak ..	1,493	4	141	102	83	1,163	473	1,636
17	Gurgaon ..	1,504	30	232	27	52	1,163	207	1,370
18	Karnal ..	1,975	12	226	161	37	1,539	442	1,981
19	Mahendragarh ..	852	5	78	49	21	699	287	986
20	Ambala ..	855	104	129	34	39	549	154	703
21	Sangrur ..	671	1	47	20	13	590	163	753
	Sub-Total ..	10,794 (35.6)	156 (17.4)	1,187 (14.4)	398 (31.3)	488 (41.1)	8,565 (45.5)	2,368 (43.9)	10,933 (45.4)
	Total Punjab ..	30,310	901	8,149	1,270	1,187	18,803	5,282	24,085

Source.—Statistical Abstract of Punjab.

Notes.—1. (a) stands for less than 500 acres.

2. Figures in brackets represent percentages to total Punjab.

ANNEXURE 10

AREA SOWN MORE THAN ONCE

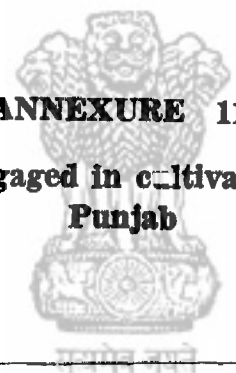
(In thousand acres)

Serial No.	District	1950-51	1955-56	1960-61	1961-62	1962-63	1963-64
1	2	3	4	5	6	7	8
HILL REGION							
1	Simla ..	(a)	(a)	16	15	16	16
2	Kangra ..	292	313	318	321	319	322
3	Lahaul & Spiti ..	..	..	..	..	..	..
4	Hoshiarpur ..	105	197	210	221	258	261
	Sub-Total ..	397 (12.8)	510 (8.9)	544 (9.5)	557 (10.2)	593 (9.8)	599 (11.3)
NON-HARYANA REGION							
5	Jullundur ..	87	192	145	136	177	145
6	Ludhiana ..	145	193	164	175	184	235
7	Ferozepur ..	269	443	318	380	374	396
8	Amritsar ..	282	359	300	337	451	392
9	Gurdaspur ..	106	185	185	173	211	211
10	Patiala ..	149	173	355	215	290	219
11	Bhatinda ..	106	277	265	308	331	228
12	Kapurthala ..	54	58	37	40	86	85
13	Ambala ..	48	61	87	112	102	94
14	Sangrur ..	281	311	400	390	445	310
	Sub-Total ..	1,527 (49.2)	2,252 (39.5)	2,256 (39.5)	2,266 (41.5)	2,651 (43.9)	2,315 (43.8)
HARYANA REGION							
15	Hissar ..	154	729	832	675	706	642
16	Rohtak ..	358	661	436	460	498	473
17	Gurgaon ..	119	302	310	285	245	207
18	Karnal ..	258	479	543	525	603	442
19	Mahendragarh ..	127	400	426	331	302	287
20	Ambala ..	66	132	153	208	210	154
21	Sangrur ..	96	241	208	148	233	163
	Sub-Total ..	1,178 (38.0)	2,944 (51.6)	2,908 (51.0)	2,632 (48.3)	2,797 (46.3)	2,368 (44.9)
	Total Punjab ..	3,102	5,706	5,708	5,455	6,041	5,282

Source:—Statistical Abstracts of Punjab.

Notes.—1. (a) stands for less than 500 acres.

2. Figures in brackets represent percentages to total Punjab.



ANNEXURE 11

Sample Households Engaged in cultivation by size of Land in Punjab

ANNEXURE

SAMPLE HOUSEHOLDS ENGAGED IN

Serial No.	District	Size of Holding			
		Less than 1	1.0 to 2.4	2.5 to 4.9	5.0 to 7.4
1	2	3	4	5	6
HILL REGION					
1	Simla ..	196	790	477	231
2	Kangra ..	4,427	10,768	9,159	4,088
3	Lahaul and Spiti ...	51	183	142	72
4	Hoshiarpur ..	1,291	4,523	4,845	4,574
	Sub-Total ..	5,965	16,264	14,623	8,965
NON-HARYANA REGION					
5	Jullundur ..	65	544	1,149	2,224
6	Ludhiana ..	20	422	705	1,383
7	Ferozepur ..	85	1,069	1,958	3,503
8	Amritsar ..	30	917	1,949	3,416
9	Gurdaspur	33	672	1,642	2,753
10	Patiala ..	77	785	1,284	2,105
11	Bhatinda ..	213	1,010	1,403	1,577
12	Kapurthala ..	13	224	582	1,168
13	Ambala ..	115	867	1,217	1,495
14	Sangrur ..	108	838	1,336	1,880
	Sub-Total ..	759	7,349	13,225	21,504
HARYANA REGION					
15	Hissar ..	111	1,097	2,301	3,505
16	Rohtak ..	159	1,042	2,385	3,672
17	Gurgaon ..	163	1,978	3,131	4,410
18	Karnal ..	86	1,138	2,450	4,527
19	Mahendragarh ..	296	1,291	1,824	2,063
20	Ambala ..	75	610	990	1,665
21	Sangrur ..	153	672	867	1,269
	Sub-Total ..	1,043	8,188	13,948	21,111
	Total Punjab ..	7,767	31,800	41,796	51,580

11

CULTIVATION BY SIZE OF LAND IN PUNJAB

(Based on 20 per cent sample)

(In acres)

7.5 to 9.9	10.0 to 12.4	12.5 to 14.9	15.0 to 29.9	30.0 to 49.9	50.0 and above	Unclassified households	Total (Cols. 3 to 13)
7	8	9	10	11	12	13	14
78	50	12	46	10	4	6	1,900
1,681	1,148	359	749	110	38	96	32,623
16	15	6	6	..	.	7	498
2,396	2,439	733	2,310	421	177	92	23,801
4,171	3,652	1,110	3,111	541	219	201	58,822
1,625	1,967	806	2,499	451	117	85	11,532
1,118	1,606	776	2,894	641	144	44	9,753
2,395	3,496	1,787	7,683	2,784	1,163	83	26,006
2,186	2,992	995	3,815	807	284	172	17,563
1,710	1,977	665	2,271	471	146	108	12,448
1,557	2,216	1,033	3,903	1,076	358	53	14,447
1,410	1,739	1,305	6,179	2,401	752	71	18,060
683	853	295	962	179	47	24	5,030
880	1,054	429	1,235	187	51	35	7,565
1,410	1,922	1,157	4,729	1,369	377	117	15,243
14,974	19,822	9,248	36,170	10,366	3,439	792	1,37,647
2,613	3,702	2,320	10,582	4,732	2,222	182	33,367
2,566	3,559	1,595	5,065	1,155	309	116	21,983
2,738	3,431	1,611	4,503	1,020	329	98	23,412
3,216	4,737	1,892	6,122	1,624	683	173	26,648
1,400	1,534	928	2,535	623	168	36	12,698
1,182	1,600	600	2,071	705	275	78	9,851
961	1,316	769	2,545	747	234	35	9,568
14,676	19,879	9,715	33,423	10,606	4,220	718	1,37,527
33,821	43,353	20,073	72,704	21,513	7,878	1,711	3,33,996

Source:—Census of India, 1961.

ANNEXURE

AREA, PRODUCTION AND YIELD PER ACRE OF PRINCIPAL CROPS (AVERAGE

(Area in thousand acres, Production in Thousand tons/Bales for

1	2	3			4		
		Paddy			*Wheat*		
Serial No	District	Area	Production (in terms of rice)	Yield per acre	Area	Production	Yield per acre
HILL REGION							
1	Simla ..	2.0	1.7	1,904	13.3	5.0	842
2	Kangra ..	123.3	68.0	1,235	310.0	88.7	641
3	Lahaul and Spiti ..	..	..	..	1.0	(b)	..
4	Hoshiarpur ..	78.4	43.6	1,246	294.0	101.0	770
	Sub-Total ..	203.7 (17.9)	113.3 (15.3)	1,246	618.3 (10.8)	194.7 (7.2)	705
NON-HARYANA REGION							
5	Jullundur ..	20.7	14.7	1,291	298.7	156.7	1,175
6	Ludhiana ..	4.3	2.3	1,198	296.3	208.3	1,575
7	Ferozepur ..	88.7	65.3	1,649	768.7	335.6	978
8	Amritsar ..	145.3	82.5	1,272	387.3	186.0	1,076
9	Gurdaspur ..	121.3	79.7	1,472	273.7	103.7	849
10	Patiala ..	77.6	50.3	1,452	377.0	192.7	1,145
11	Bhatinda ..	1.0	(b)	..	402.0	221.0	1,231
12	Kapurthala ..	40.0	27.7	1,551	127.7	47.7	837
13	Ambala ..	22.7	15.7	1,549	97.3	40.3	928
14	Sangrur ..	13.7	10.0	1,635	433.0	213.3	1,103
	Sub-Total ..	535.3 (47.2)	348.0 (46.9)	1,456	3,461.7 (60.5)	1,705.3 (62.7)	1,103
HARYANA REGION							
15	Hissar ..	48.3	46.7	2,166	328.0	161.7	1,104
16	Rohtak ..	12.0	9.3	1,736	318.0	182.6	1,286
17	Gurgaon ..	(a)	(b)	..	202.4	99.7	1,103
18	Karnal ..	249.3	162.4	1,459	499.7	237.0	1,062
19	Mahendragarh ..	..	..	..	18.3	10.3	1,261
20	Ambala ..	75.7	54.3	1,607	177.3	74.0	935
21	Sangrur ..	10.0	7.3	1,635	102.3	55.0	1,204
	Sub-Total ..	395 3 (34 9)	280.0 (37.8)	1,586	1,646.0 (28.7)	820.3 (30.1)	1,116
	Total Punjab ..	1,134.3	741.3	1,464	5,726.0	2,720.3	1,064

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FOR THREE YEARS FROM 1961-62 TO 1963-64)

Cotton and average yield in pounds)

5			6			7		
Maize			*Jowar, Bajra and Barley*			*Gram*		
Area	Production	Yield per acre	Area	Production	Yield per acre	Area	Production	Yield per acre
14.7	6.0	914	3.0	1.0	747	0.7	(b)	..
200.3	113.0	1,264	28.7	6.3	492	17.3	3.7	679
..	..	..	3.0	1 0	747	..	..	..
188.3	105.0	1,249	11.3	2.4	476	141.3	41.3	655
403 3 (29 0)	224 0 (33.9)	1,244	46 0 (1.4)	10.7 (2.1)	521	159 3 (2 9)	45 0 (3 2)	633
106.0	57.7	1,219	3.0	0.3	224	78.3	25.7	735
109.0	70.7	1,453	9.7	3.7	854	100.3	37.7	842
63.7	25.0	879	117.0	35.3	676	409.7	114.0	623
100.7	39.3	874	24.7	8.3	753	110.3	40.3	818
53.3	18.3	769	30.0	7.7	575	42.7	13.3	690
90.0	39.0	971	27.7	7.7	623	186.7	56.3	675
21.3	7.0	736	138.3	32.0	518	591.3	150.3	569
31.7	12.3	869	3.3	1.0	679	15.3	4.7	688
62.7	30.7	1,097	2.3	0.3	292	76.7	20.0	584
96.6	45.7	1,060	85.3	13.3	349	309.7	78.0	564
735.0 (52 8)	345.7 (52 4)	1,054	441.3 (13 6)	109.6 (21.7)	1,556	1,921 0 (34 7)	540 3 (38 1)	630
9.4	4.3	1,070	771.6	107.7	313	1,539.6	368.3	536
11.0	4.3	876	518.7	57.7	249	461.3	118.0	573
4.7	2.3	1,096	591.0	91.0	370	360.0	66.7	415
140.3	36.7	586	212.7	23.7	250	448.7	138.7	692
(a)	..	..	497.0	73.3	330	309.7	50.0	362
84.0	41.3	1,101	23.3	3.3	317	107.3	28.7	599
4.3	1.7	886	185.7	28.3	341	253.7	63.3	559
253 7 (18.2)	90 6 (13.7)	826	2,760 0 (85 0)	385 0 (76.2)	312	3,480 3 (62 4)	833 7 (58 7)	537
1,392.0	660.3	1,063	3,247.3	505.3	349	5,560 6	1,419.0	572

ANNEXURE

AREA, PRODUCTION AND YIELD PER ACRE OF PRINCIPAL

(Area in thousand acres, production in thousand tons/bales

Serial No.	District	*Massar, Moong, Mash* 8			*Total (Cols. 3 to 8)* 9		
		Area	Production	Yield per acre	Area	Production	Yield per acre
HILL REGION							
1	Simla ..	1.0	..	..	34.7	13.7	884
2	Kangra ..	28.8	3.7	288	708.4	283.4	896
3	Lahaul and Spiti ..	..	..	..	4.0	1.0	560
4	Hoshiarpur ..	17.5	3.3	422	730.8	296.6	909
	Sub-Total ..	47.3 (15.1)	7.0 (11.3)	332	1,477.9 (8.5)	594.7 (9.7)	901
NON-HARYANA REGION							
5	Jullundur ..	6.1	1.4	514	512.8	256.5	1,120
6	Ludhiana ..	3.4	0.6	395	523.0	323.3	1,385
7	Ferozepore ..	8.5	1.6	422	1,456.3	576.8	887
8	Amritsar ..	14.9	4.2	631	783.2	360.4	1,031
9	Gurdaspur ..	1.2	7.5	408	562.2	230.2	917
10	Patiala ..	18.7	4.2	503	777.7	350.2	1,009
11	Bhatinda ..	6.4	1.4	490	1,160.3	411.7	795
12	Kapurthala ..	3.0	0.6	448	221.0	94.0	953
13	Ambala ..	12.3	2.7	492	274.0	109.7	897
14	Sangrur ..	5.8	1.5	579	944.1	361.8	858
	Sub-Total ..	120.3 (38.2)	25.7 (41.1)	479	7,214.6 (41.6)	3,077.6 (50.4)	955
HARYANA REGION							
15	Hissar ..	36.6	5.4	330	2,733.5	694.1	569
16	Rohtak ..	4.4	1.1	560	1,325.4	373.0	630
17	Gurgaon ..	7.7	1.4	407	1,125.8	261.1	520
18	Karnal ..	40.7	9.9	545	1,501.4	608.4	856
19	Mahendragarh ..	12.2	1.8	330	837.2	135.4	362
20	Ambala ..	41.9	9.2	492	509.5	210.8	927
21	Sangrur ..	3.8	0.9	531	559.8	156.5	626
	Sub-Total ..	147.3 (46.7)	29.7 (47.6)	452	8,682.6 (49.9)	2,439.3 (39.9)	629
	Total Punjab ...	314.9	62.4	444	17,375.1	6,108.6	788

Notes.—1. (a) stands for less than 500 acres.
2. (b) stands for less than 500 tons/bales for cotton.
3. Figures in brackets represent percentages to total area/production.

12—CONCLD

CROPS (AVERAGE FOR THREE YEARS FROM 1961-62 TO 1963-64)

for cotton and average yield in pounds)

Cotton 10			*Sugarcane* 11			*Oilseeds* 12			*Total Cotton, Sugarcane and Oil-seeds* 13	*Total Cols. 9 and 13* 14
Area	Production	Yield per acre	Area	Production (in terms of Gur)	Yield per acre	Area	Production	Yield per acre	Area	Area
..	..	..	(a)	..	..	(a)	..	..	(a)	34.7
1.0	(b)	..	2.7	1.7	1,410	33.9	4.4	291	37.6	746.0
..	..	..	..	..	..	(a)	..	..	(a)	4.0
12.7	4.7	145	42.3	40.0	2,118	9.4	1.6	381	64.4	795.2
13.7	4.7	134	45.0	41.7	2,076	43.3	6.0	310	102.0	1,579.9
(0.9)	(0.5)		(7.3)	(5.0)		(3.8)	(2.2)		(3.1)	(7.6)
32.3	19.3	186	44.7	64.3	3,322	25.0	6.9	618	102.0	614.8
81.7	59.0	284	26.3	37.3	3,177	94.4	33.0	783	202.4	725.4
425.0	309.4	286	17.0	22.0	2,899	52.7	14.3	608	494.7	1,951.0
105.7	45.3	168	26.3	32.3	2,751	47.2	9.4	446	179.2	962.4
12.3	5.0	159	36.0	45.0	2,800	20.7	3.2	346	69.0	631.2
72.0	41.3	225	35.7	39.7	2,491	70.6	21.9	695	178.3	956.0
278.0	192.7	272	8.7	10.0	2,574	95.8	15.3	358	382.5	1,542.8
8.0	4.3	211	12.7	14.7	2,593	14.2	4.8	757	34.9	255.9
9.3	3.1	131	29.3	31.0	2,370	18.9	5.2	616	57.5	331.5
173.0	120.7	274	25.0	33.0	2,957	71.5	20.5	642	269.5	1,213.6
1,197.3	800.1	262	261.7	329.3	2,818	511.0	134.5	590	1,970.0	9,184.6
(77.6)	(78.6)		(42.6)	(39.7)		(45.5)	(48.7)		(60.6)	(44.5)
175.4	128.3	287	27.0	42.7	3,543	260.4	63.3	545	462.8	3,196.3
39.3	19.7	197	106.0	181.3	3,831	35.2	7.4	471	180.5	1,505.9
7.3	3.3	177	27.0	31.7	2,630	122.1	30.9	567	156.4	1,282.2
51.4	25.7	196	81.0	125.0	3,457	47.4	9.8	463	179.8	1,771.2
0.3	0.3	392	0.3	(b)	..	71.7	15.6	487	72.3	909.5
11.0	3.9	139	46.3	51.3	2,482	19.5	5.4	620	76.8	586.3
46.0	32.0	273	21.0	27.7	2,955	12.0	3.0	560	79.0	638.8
330.7	213.2	253	308.6	459.7	3,337	568.3	135.4	534	1,207.6	9,890.2
(21.5)	(20.9)		(50.1)	(55.3)		(50.7)	(49.1)		(36.3)	(47.9)
1,541.7	1,018.0	259	615.3	830.7	3,024	1,122.6	275.9	551	3,279.6	20,654.7

Source:—Statistical Abstracts of Punjab and Districts.

ANNEXURE
CHANGES IN
Variations in Area under

Serial No.	District	*Paddy*				
		1950-51	1955-56	1960-61	1963-64	1950-51
1	2	3				
HILL REGION						
1	Simla ..	..	..	2	2	..
2	Kangra ..	121	120	123	124	278
3	Lahaul and Spiti ..	..	..	..	..	..
4	Hoshiarpur ..	38	46	78	76	278
	Sub-Total ..	159	166	203	202	556
NON-HARYANA REGION						
5	Jullundur ..	4	6	23	20	237
6	Ludhiana ..	1	2	5	6	218
7	Ferozepore ..	69	80	93	99	604
8	Amritsar ..	69	78	101	160	334
9	Gurdaspur ..	76	93	120	129	258
10	Patiala ..	21	36	84	77	246
11	Bhatinda ..	(a)	(a)	1	1	253
12	Kapurthala ..	10	20	29	40	91
13	Ambala ..	9	10	25	19	63
14	Sangrur ..	2	2	19	12	276
	Sub-Total ..	261	327	500	563	2,580
HARYANA REGION						
15	Hissar ..	11	22	43	49	155
16	Rohtak ..	7	4	12	9	201
17	Gurgaon ..	(a)	(a)	(a)	(a)	120
18	Karnal ..	98	103	203	236	235
19	Mahendragarh ..	..	..	..	..	8
20	Ambala ..	61	52	84	78	119
21	Sangrur ..	4	6	11	10	64
	Sub-Total ..	181	187	380	382	902
	Total Punjab ..	601	680	1,083	1,147	4,038

13
CROPPING PATTERN
different crops in various years

(In thousand acres)

Wheat			*Maize*				*Jowar, Bajra and Barley*			
1955-56	1960-61	1963-64	1950-51	1955-56	1960-61	1963-64	1950-51	1955-56	1960-61	1963-64
4				5				6		
(a)	13	13	..	(a)	15	15	..	(a)	3	3
294	308	314	185	194	201	205	34	33	29	28
..	1	1	..	..	..	..	..	..	3	3
307	276	309	163	160	174	194	37	21	19	10
601	598	637	348	354	390	414	71	54	54	44
274	279	300	81	75	103	106	13	9	4	3
259	279	338	70	70	96	124	16	12	10	10
745	733	805	38	36	62	62	272	149	111	111
354	346	400	63	68	81	87	44	36	29	21
228	263	247	61	65	45	63	29	27	32	27
229	401	350	69	93	106	93	22	23	24	21
330	353	393	7	8	24	21	227	189	178	78
106	116	126	13	23	29	34	8	7	3	3
68	90	98	31	28	62	65	2	3	3	1
335	389	440	78	63	92	97	136	93	75	91
2,928	3,249	3,497	511	529	700	752	769	548	469	366
256	341	336	1	5	19	7	1,216	1,061	952	688
264	326	345	4	7	13	10	535	621	511	499
170	176	204	1	3	4	6	622	572	618	514
372	433	514	32	62	143	163	209	216	180	200
12	19	17	..	(a)	1	(a)	502	522	547	498
164	134	162	37	41	70	91	31	37	23	21
94	115	104	1	3	8	4	150	203	186	185
1,332	1,544	1,682	76	121	258	281	3,265	3,232	3,017	2,605
4,861	5,391	5,816	935	1,004	1,348	1,447	4,105	3,834	3,540	3,015

ANNEXURE
CHANGES IN
Variations in Area under

Serial No.	District	Gram				Massar,
		1950-51	1955-56	1960-61	1963-64	1950-51
		7				
HILL REGION						
1	Simla ..	..	..	(a)	1	..
2	Kangra ..	29	31	13	16	35.3
3	Lahaul and Spiti ..	..	..	..	..	..
4	Hoshiarpur ..	127	139	130	133	17.1
	Sub-Total ..	156	170	143	150	52.4
NON-HARYANA REGION						
5	Jullundur ..	82	103	81	74	17.5
6	Ludhiana ..	143	134	126	101	12.6
7	Ferozepore ..	582	645	422	406	33.7
8	Amritsar ..	146	164	103	88	12.0
9	Gurdaspur ..	46	61	50	50	60.6
10	Patiala ..	74	124	216	158	28.3
11	Bhatinda ..	479	704	536	588	14.1
12	Kapurthala ..	17	31	33	9	2.1
13	Ambala ..	58	63	65	68	9.0
14	Sangrur ..	389	341	336	280	16.0
	Sub-Total ..	2,016	2,370	1,968	1,822	205.9
HARYANA REGION						
15	Hissar ..	777	1,507	1,630	1,530	20.6
16	Rohtak ..	436	620	434	455	8.6
17	Gurgaon ...	185	341	400	355	27.0
18	Karnal ..	342	482	510	398	40.4
19	Mahendragarh ..	182	402	415	350	4.1
20	Ambala ...	104	118	117	96	33.8
21	Sangrur ...	137	299	302	252	10.2
	Sub-Total ..	2,163	3,769	3,808	3,436	144.7
	Total, Punjab ...	4,335	6,309	5,919	5,408	403.0

13—CONTD.
CROPPING PATTERN
different crops in various years

(In thousand acres)

Moong and Mash			*Cotton (American)*				*Cotton (Desi)*			
1955-56	1960-61	1963-64	1950-51	1955-56	1960-61	1963-64	1950-51	1955-56	1960-61	1963-64
8				9				10		
—	1.1	0.5	...	..	...	—	...	...	(a)	...
33.9	29.0	27.0	...	(a)	(a)	...	23	2	1	1
...	...	..	...	..	..	..	...	...	...	..
14.2	17.6	17.3	..	4	1	2	13	17	9	12
48.1	47.7	44.8	..	4	1	2	36	19	10	13
8.0	6.7	5.8	(a)	41	14	16	14	13	16	19
8.8	4.0	2.8	1	62	39	43	29	15	25	53
18.5	10.7	7.0	152	292	290	319	49	58	102	147
7.9	13.7	12.7	1	86	38	52	59	20	41	41
51.0	34.6	42.5	(a)	8	2	2	9	13	11	11
24.4	24.3	17.1	(a)	38	48	50	29	20	28	22
17.7	7.2	3.8	32	127	135	129	52	76	134	159
2.5	2.5	2.1	..	7	2	2	4	4	5	6
8.3	12.7	11.6	(a)	5.4	3.5	4.5	5.6	4.5	5.3	5.4
15.6	7.7	4.7	8.4	38.0	30.0	17.0	100.0	117.0	126.0	158.0
162.7	124.1	110.1	194.4	704.4	601.5	634.5	350.6	340.5	493.3	621.4
54.7	37.6	15.4	5	64	56	145	47	30	50	98
7.2	5.0	5.9	...	20	24	29	21	9	10	22
16.8	8.6	7.3	(a)	3	2	6	4	2	2	2
39.9	47.8	40.0	1	50	30	48	29	12	10	21
26.9	10.3	4.0	..	..	..	..	..	..	..	1
28.9	39.3	36.1	(a)	1.6	3.5	5.5	6.4	9.5	6.7	8.6
17.9	7.3	2.9	1.6	15.0	17.0	18.0	19	14	18	28
192.3	155.9	111.6	7.6	153.6	132.5	251.5	126.4	76.5	96.7	180.6
403.1	327.7	266.5	202	862	735	888	513	436	600	815

ANNEXURE 13—CONCLD.

CHANGES IN CROPPING PATTERN

Variation in Area under different crops in various years

(In thousand acres)

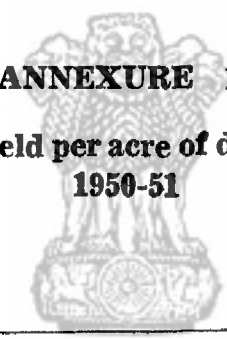
Serial No.	District	Sugarcane				Oilseeds (Groundnut, Rape and Mustard, Sesamum and Linseed)			
		1950-51	1955-56	1960-61	1963-64	1950-51	1955-56	1960-61	1963-64
		11				12			
	HILL REGION								
1	Simla ..	..	..	(a)	..	..	..	(a)	(a)
2	Kangra ..	4	2	3	2	34.2	34.4	29.3	35.3
3	Lahaul and Spiti ..	..	..	..	..	..	..	(a)	..
4	Hoshiarpur ..	34	35	45	38	6.7	9.0	7.9	9.3
	Sub-Total ..	38	37	48	40	40.9	43.4	37.2	44.6
	NON-HARYANA REGION								
5	Jullundur ..	35	35	50	41	8.4	13.5	18.9	26.1
6	Ludhiana ..	18	19	24	33	63.0	70.5	70.8	123.2
7	Ferozepore ..	11	11	19	17	63.0	60.5	69.4	53.1
8	Amritsar ..	33	31	34	30	88.9	44.7	40.4	46.2
9	Gurdaspur ..	30	31	43	35	33.8	38.1	17.1	18.7
10	Patiala ..	20	29	43	31	27.9	46.2	82.4	70.9
11	Bhatinda ..	6	3	8	10	45.2	38.2	89.3	83.0
12	Kapurthala ..	8	12	17	11	1.5	5.9	6.3	25.5
13	Ambala ..	16	20	34	25	25.3	26.3	16.5	21.1
14	Sangrur ..	18	18	27	22	33.3	32.8	43.9	76.8
	Sub-Total ..	195	209	299	255	390.3	376.7	455.0	544.6
	HARYANA REGION								
15	Hissar ..	8	13	24	23	64.1	127.3	160.5	278.5
16	Rohtak ..	51	76	101	93	22.3	31.3	26.4	42.1
17	Gurgaon ..	13	14	34	26	93.5	115.1	77.3	95.5
18	Karnal ..	32	46	88	75	45.7	88.3	40.2	42.6
19	Mahendragarh ..	..	..	(a)	1	7.0	30.0	45.0	69.0
20	Ambala ..	23	19	50	42	16.6	13.4	14.9	23.1
21	Sangrur ..	10	15	20	20	26.3	64.2	29.1	11.3
	Sub-Total ..	137	183	317	280	275.5	480.6	393.4	562.1
	Total Punjab ..	370	429	664	575	706.7	900.7	885.6	1,151.3

Note- (a) stands for less than 500 acres.

Source :—Statistical Abstracts of Punjab.

ANNEXURE 14

Area, production and yield per acre of different crops in the year 1950-51



ANNEXURE

AREA, PRODUCTION AND YIELD PER ACRE

Serial No.	District	*Paddy*			*Wheat*		
		Area	Production	Average yield	Area	Production	Average yield
1	2	3			4		
HILL REGION							
1	Simla ..	..	..	..	..	..	..
2	Kangra ..	121	41	759	278	71	572
3	Lahaul and Spiti ..	..	..	..	..	..	...
4	Hoshiarpur ..	38	20	1,179	278	84	677
	Sub-Total ..	159	61	854	556	155	624
NON-HARYANA REGION							
5	Jullundur ..	4	2	1,120	237	92	869
6	Ludhiana ..	1	1	2,240	218	102	1,048
7	Ferozepore ..	69	34	1,104	604	246	912
8	Amritsar ..	69	42	1,363	334	139	932
9	Gurdaspur ..	76	46	1,356	258	85	738
10	Patiala ..	21	5	533	246	70	637
11	Bhatinda ..	(a)	(b)	..	253	75	664
12	Kapurthala ..	10	4	896	91	25	615
13	Ambala ..	9	4	995	63	19	676
14	Sangrur ..	2	1	1,120	276	86	698
	Sub-Total ..	261	139	1,197	2,580	939	815
HARYANA REGION							
15	Hissar ..	11	4	815	155	43	621
16	Rohtak ..	7	2	640	201	76	847
17	Gurgaon ..	(a)	..	..	120	34	635
18	Karnal ..	98	30	663	235	78	743
19	Mahendragarh ..	..	..	..	8	3	840
20	Ambala ..	61	25	918	119	36	677
21	Sangrur ..	4	1	560	64	20	700
	Sub-Total ..	181	62	773	902	290	720
	Total Punjab ..	601	262	975	4,038	1,384	767

14

OF DIFFERENT CROPS IN THE YEAR 1950-51

Maize			*Jowar, Bajra and Barley*			*Gram*		
Area	Production	Average yield	Area	Production	Average yield	Area	Production	Average yield
5			6			7		
..	..	..	..	..	..	..	..	..
185	51	617	34	9	595	29	6	463
..	..	..	..	..	..	..	..	..
163	30	412	37	6	363	127	36	635
348	81	521	71	15	473	156	42	603
81	20	553	13	2	345	82	23	628
70	18	576	16	3	420	143	37	580
38	8	472	272	61	502	582	147	566
63	14	498	44	8	407	146	41	629
61	8	294	29	6	463	46	12	584
69	17	552	22	5	509	74	17	515
7	1	320	227	34	335	479	96	449
13	10	1,723	8	1	280	17	5	659
31	4	289	2	(b)	..	58	13	502
78	20	574	136	21	350	389	87	501
511	120	526	769	141	410	2,016	478	531
1	(b)	..	1,216	187	344	777	107	308
4	1	560	535	89	372	436	73	375
1	(b)	..	622	103	387	185	38	460
32	5	350	209	27	289	342	86	563
..	..	..	502	36	160	182	29	357
37	6	363	31	4	289	104	23	495
1	(b)	..	150	23	343	137	30	491
76	12	354	3,265	469	321	2,163	386	400
935	213	510	4,105	625	339	4,335	906	468

ANNEXURE

AREA, PRODUCTION AND YIELD PER ACRE

Serial No.	District	*Massar, Moong and Mash*			*Total (Cols. 3 to 8)*		
		Area	Production	Average yield	Area	Production	Average yield
			8			9	
HILL REGION							
1	Simla ..	..	..	..	..	..	..
2	Kangra ..	35.3	2.8	178	682.3	180.8	593
3	Lahaul and Spiti ..	..	..	..	..	..	..
4	Hoshiarpur ..	17.1	2.5	327	660.1	178.5	650
	Sub-Total ..	52.4	5.3	227	1,342.4	359.3	591
NON-HARYANA REGION							
5	Jullundur ..	17.5	2.8	358	434.5	141.8	731
6	Ludhiana ..	12.6	1.7	302	460.6	162.7	782
7	Ferozepore ..	33.7	5.2	346	1,598.7	501.2	604
8	Amritsar ..	12.0	2.5	467	668.0	246.5	827
9	Gurdaspur ..	60.0	10.5	388	530.6	167.5	707
10	Patiala ..	28.3	3.6	250	460.3	117.6	572
11	Bhatinda ..	14.1	2.0	318	980.1	208.0	475
12	Kapurthala ..	2.1	0.5	533	141.1	45.5	722
13	Ambala ..	9.0	1.4	348	172.0	62.4	813
14	Sangrur ..	16.0	1.8	252	897.0	216.8	541
	Sub-Total ..	205.9	32.0	348	6,342.9	1,870.0	663
HARYANA REGION							
15	Hissar ..	20.6	2.6	283	2,180.6	343.6	353
16	Rohtak ..	8.6	1.3	339	1,191.6	242.3	456
17	Gurgaon ..	27.0	3.6	262	955.0	178.6	419
18	Karnal ..	40.4	7.3	405	956.4	233.3	546
19	Mahendragarh ..	4.1	0.3	164	696.1	68.3	219
20	Ambala ..	33.8	5.1	338	385.8	78.1	492
21	Sangrur ..	10.2	1.2	265	366.2	75.2	460
	Sub-Total ..	144.7	21.4	331	6,731.7	1,219.4	404
	Total Punjab ..	403.0	58.7	326	14,417.0	3,448.7	536

14—CONCLD

OF DIFFERENT CROPS IN THE YEAR 1950-51

Cotton			*Sugarcane*			*Oilseeds*			*Total Cotton, Sugarcane (Cols) and Oil seeds 9&13*	
Area	Production	Average yield	Area	Production	Average yield	Area	Production	Average yield	Area	Area
	10			11			12		13	14
..	..	..	..	..	..	..	..	..	..	..
23	(b)	...	4	2	1,120	34.2	2.6	170	61.2	743.5
..	..	..	..	..	..	..	..	...	..	..
13	5	151	34	23	1,515	6.7	1.0	334	53.7	713.8
36	5	54	38	25	1,474	40.9	3.6	197	114.9	1,457.3
14	5	140	35	69	4,416	8.4	1.8	480	57.4	491.9
30	12	157	18	26	3,236	63.0	17.0	604	111.0	571.6
201	110	215	11	14	2,851	63.0	10.3	366	275.0	1,873.7
60	16	104	33	24	1,629	88.9	18.4	464	181.9	849.9
9	3	131	30	22	1,643	33.8	4.2	278	72.8	603.4
29	13	176	20	27	3,024	27.9	6.7	538	76.9	537.2
84	39	182	6	6	2,240	45.2	6.0	297	135.2	1,115.3
4	1	98	8	12	3,360	1.5	0.3	448	13.5	154.6
6	2	131	16	18	2,520	25.3	5.3	469	47.3	219.3
108	52	189	18	20	2,489	33.3	4.4	297	159.3	1,056.3
545	253	182	195	238	2,734	390.3	74.4	427	1,130.3	7,473.22
52	26	196	8	11	3,080	64.1	7.3	255	124.1	2,304.7
21	8	149	51	83	3,645	22.3	2.6	261	94.3	1,285.9
4	1	98	13	16	2,757	93.5	11.5	276	110.5	1,065.5
30	10	131	32	33	2,310	45.7	7.0	343	107.7	1,064.1
..	..	..	..	..	..	7.0	1.0	320	7.0	703.1
6	2	131	23	25	2,435	16.6	3.5	472	46.0	431.8
21	10	187	10	11	2,464	26.3	3.4	290	56.9	423.1
134	57	167	137	179	2,927	275.5	36.3	295	546.5	7,278.2
715	315	173	370	442	2,676	706.7	114.3	362	1,791.7	16,208.7

Notes :—1. (a) stands for less than 500 acres.
2. (b) stands for less than 500 tons/bales for cotton.
3. Area is given in thousand acres; production in thousand tons/bales for cotton; and yield in pounds.
4. Production of paddy and sugarcane is in terms of rice and 'gur' respectively.

Source:—Statistical Abstracts of Punjab.

ANNEXURE 15

Net area under irrigation

(In thousand acres)

Serial No.	District	1963-64		
		Canals	Others	Total (3+4)
1	2	3	4	5
HILL REGION				
1	Simla ..	..	9	9
2	Kangra ..	104	..	104
3	Lahaul and Spiti ..	..	6	6
4	Hoshiarpur ..	32	70	102
	Sub-Total ..	136	85	221
		(2.5)	(3.0)	(2.6)
NON-HARYANA REGION				
5	Jullundur ..	38	387	425
6	Ludhiana ..	62	367	429
7	Ferozepore ..	1,172	173	1,345
8	Amritsar ..	401	350	751
9	Gurdaspur ..	119	153	272
10	Patiala ..	84	264	348
11	Bhatinda ..	759	16	775
12	Kapurthala ..	6	187	193
13	Ambala ..	0.2	72.2	72.4
14	Sangrur ..	340.1	229.8	569.9
	Sub-Total ..	2,981.3 (53.7)	2,199.0 (77.5)	5,180.3 (61.8)
HARYANA REGION				
15	Hissar ..	1,389	12	1,401
16	Rohtak ..	389	113	502
17	Gurgaon ..	48	131	179
18	Karnal ..	331	228	559
19	Mahendragarh ..	35	24	59
20	Ambala ..	5.8	40.8	46.6
21	Sangrur ..	235.9	6.2	242.1
	Sub-Total ..	2,433.7 (43.8)	555.0 (19.5)	2,988.7 (35.6)
	Total Punjab ..	5,551	2,839	8,390

Source :—Statistical Abstract of Punjab.

ANNEXURE 16
CONSUMPTION OF FERTILIZERS

Serial No.	District	*Quantity of Fertilizers consumed (Tons)*					
		1956-57	1957-58	1958-59	1962-63	1963-64	1964-65
1	2	3	4	5	6	7	8
HILL REGION							
1	Simla ..	..	..	..	51	..	70
2	Kangra ..	825	1,049	1,062	1,492	2,179	3,900
3	Lahaul and Spiti ..	..	..	..	..	335	547
4	Hoshiarpur ..	2,372	2,942	2,879	9,628	10,280	15,546
	Sub-Total ..	3,197 (10.6)	3,991 (10.8)	3,941 (11.1)	11,171 (9.8)	12,794 (7.2)	20,063 (7.1)
NON-HARYANA REGION							
5	Jullundur ..	2,210	2,551	2,611	12,706	10,225	25,138
6	Ludhiana ..	2,327	2,846	3,557	13,471	21,743	30,070
7	Ferozepur ..	7,135	10,037	6,199	19,131	32,019	42,172
8	Amritsar ..	2,079	2,265	2,070	6,042	12,389	19,049
9	Gurdaspur ..	937	1,200	650	4,127	7,446	13,576
10	Patiala ..	768	1,265	1,589	4,699	8,193	13,931
11	Bhatinda ..	2,707	2,452	3,017	9,194	13,816	19,123
12	Kapurthala ..	646	1,057	1,303	2,444	3,647	5,951
13	Ambala ..	584	760	901	2,039	3,552	5,538
14	Sangrur ..	601	874	1,164	4,082	7,215	12,091
	Sub-Total ..	19,994 (66.3)	25,307 (68.4)	23,061 (64.9)	77,935 (69.0)	1,20,245 (67.7)	1,86,639 (66.2)
HARYANA REGION							
15	Hissar ..	1,319	979	1,041	4,701	11,511	15,805
16	Rohtak ..	1,336	1,304	1,445	4,067	7,651	12,245
17	Gurgaon ..	668	943	1,172	2,446	4,134	5,901
18	Karnal ..	2,079	2,395	2,132	5,927	10,120	23,289
19	Mahendragrah ..	..	118	277	681	1,049	2,111
20	Ambala ..	1,190	1,463	1,776	3,808	6,082	9,482
21	Sangrur ..	357	497	678	2,189	3,869	6,485
	Sub-Total ..	6,949 (23.1)	7,699 (20.8)	8,501 (24.0)	23,819 (21.2)	44,416 (25.1)	75,320 (26.7)
	Total Punjab ..	30,140	36,997	35,503	1,12,925	1,77,455	2,82,022

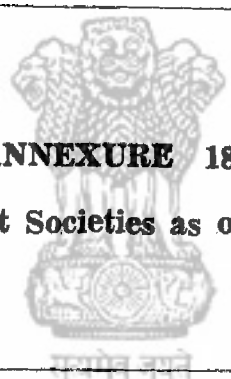
Note :—Figures in brackets represent percentages to total Punjab.
Source :—Director of Agriculture, Punjab.

ANNEXURE 17
AGRICULTURAL MACHINERY AND IMPLEMENTS (1960-61)

Serial No.	District	*Ploughs*			Tractors	Oil Engines with Pumping Sets	Electric Pumps for Tube-wells
		Wooden	Iron	Total			
1	2	3	4	5	6	7	8
HILL REGION							
1	Simla ..	10,121	31	10,152	..	..	..
2	Kangra ..	1,55,388	9,534	1,64,922	6	16	3
3	Lahaul and Spiti ..	1,563	..	1,573	..	..	..
4	Hoshiarpur ..	81,319	24,044	1,05,363	164	454	1,056
	Sub-Total ..	2,48,391 (16·9)	33,609 (7·0)	2,82,000 (14·4)	170 (2·2)	470 (5·8)	1,059 (12·1)
NON-HARYANA REGION							
5	Jullundur ..	62,055	24,021	86,076	369	704	1,963
6	Ludhiana ..	50,960	36,791	87,751	458	1,354	221
7	Ferozepur ..	1,27,401	94,954	2,22,355	1,378	1,806	946
8	Amritsar ..	73,033	33,062	1,06,095	237	361	1,122
9	Gurdaspur ..	59,019	53,317	1,12,336	108	117	742
10	Patiala ..	56,526	50,115	1,06,641	561	638	543
11	Bhatinda ..	75,823	38,852	1,14,675	1,153	307	21
12	Kapurthala ..	25,183	9,181	34,364	95	205	177
13	Ambala ..	30,447	9,765	40,212	27	103	84
14	Sangrur ..	61,232	39,687	1,00,919	392	965	161
	Sub-Total ..	6,21,679 (42·2)	3,89,745 (81·5)	10,11,424 (51·9)	4,778 (60·7)	6,560 (80·4)	5,980 (68·1)
HARYANA REGION							
15	Hissar ..	1,38,589	14,499	1,53,088	940	159	58
16	Rohtak ..	1,45,729	2,630	1,48,359	645	96	67
17	Gurgaon ..	84,920	579	85,499	185	157	437
18	Karnal ..	1,01,688	24,865	1,26,553	632	508	811
19	Mahendragarh ..	52,613	106	52,719	48	17	45
20	Ambala ..	41,786	11,991	53,777	386	163	269
21	Sangrur ..	36,734	279	37,013	82	28	48
	Sub-Total ..	6,02,059 (40·9)	54,949 (11·5)	6,57,008 (33·7)	2,918 (37·1)	1,128 (13·8)	1,735 (19·8)
	Total Punjab ..	14,72,129	4,78,303	19,50,432	7,866	8,158	8,774

Note:—Figures in brackets represent percentages to total Punjab.

Source :—Statistical Abstract of Punjab.



ANNEXURE 18

Agricultural Credit Societies as on 30th June, 1964

ANNEXURE 18

AGRICULTURAL CREDIT SOCIETIES AS ON 30TH JUNE, 1964

Serial No.	District	Number of Societies	Member-ship	Rs in lakhs						No. of Societies per lac of popu-lation	Percentage of population covered
				Owned Funds	Working capital	Deposits	Loans advanced	Principal	Interest		
1	2	3	4	5	6	7	8	9	10	11	12
HILL REGION											
1	Simla ..	106	5,880	3.72	8.57	1.11	5.19	1.23	0.10	88.3	4.9
2	Kangra ...	1,208	1,40,912	81.82	198.30	95.03	85.68	24.04	7.51	107.1	12.5
3	Lahaul and Spiti ..	44	1,346	0.74	1.53	0.03	0.78	0.17	0.04	200.0	6.1
4	Hoshiarpur ..	1,680	1,98,892	144.57	402.78	165.49	197.10	76.92	17.69	127.3	15.1
	Sub-Total ..	3,038	3,47,030	230.85	611.18	261.66	288.75	102.36	25.34	117.2	13.4
NON-HARYANA REGION											
5	Jullundur ...	1,164	1,39,725	144.33	420.50	175.89	250.69	30.07	17.38	88.8	10.6
6	Ludhiana ..	944	1,15,683	104.33	312.91	88.24	224.95	34.55	11.87	86.4	10.6
7	Ferozepur ..	1,678	1,24,497	81.94	237.41	17.23	179.59	26.36	15.11	97.6	7.2
8	Amritsar ..	1,160	89,723	54.57	140.19	19.58	46.91	53.51	16.74	70.9	5.5
9	Gurdaspur ..	1,303	86,230	51.48	169.59	19.59	70.70	54.85	12.07	123.8	8.2
0	Patiala ..	982	85,712	46.32	163.88	13.90	109.94	25.84	9.21	87.9	7.7

	Bhatinda	...	871	75,784	44.10	129.64	9.20	77.77	19.46	6.86	77.7	6.7
12	Kapurthala	...	367	36,216	17.99	73.58	21.99	32.33	19.45	4.69	100.0	9.8
13	Ambala	..	755	43,030	28.27	84.06	12.92	51.11	15.58	4.96	128.2	7.3
14	Sangrur	..	714	79,002	42.00	124.97	6.44	77.09	16.43	7.43	69.9	7.7
	Sub-Total	..	9,938	8,75,602	615.33	1,856.73	384.98	1,121.08	296.10	106.35	90.1	7.9
HARYANA REGION												
15	Hissar	..	1,216	86,659	46.77	205.87	12.38	92.51	72.49	7.80	74.4	5.3
16	Rohtak	...	937	64,197	34.57	125.89	8.95	58.47	32.80	9.90	62.1	4.3
17	Gurgaon	...	1,555	83,418	51.84	165.79	7.32	100.67	21.30	10.62	117.7	6.3
18	Karnal	...	1,216	74,035	37.92	147.96	9.79	73.64	35.58	5.00	76.7	4.7
19	Mahendragarh	..	490	43,248	17.14	57.79	2.23	25.05	8.24	3.54	84.0	7.4
20	Ambala	...	1,043	59,422	39.04	116.08	17.84	70.58	21.52	6.86	118.9	6.8
21	Sangrur	..	368	40,698	21.63	64.38	3.34	39.71	8.46	3.83	74.28	8.2
	Sub-Total	...	6,825	4,51,677	248.91	883.76	61.85	460.63	200.39	47.55	85.3	5.1
	Total Punjab		19,801	16,74,309	1,095.09	3,351.67	708.49	1,870.46	598.85	179.24	91.1	7.7

Source :—Annual Report on the working of Co-operative Societies, 1964.

ANNEXURE 19

AVAILABILITY OF CO-OPERATIVE CREDIT IN PUNJAB DURING THE CO-OPERATIVE YEAR ENDING 30TH JUNE, 1964

Serial No.	Region	Co-op. Credit (Rs in lacs)	Number of Agricultural workers (In lacs)	Credit per Agricultural worker (In Rs)	Total cropped area (In lakh (acres)	Co-operative credit per cropped acre (In Rs)
1	2	3	4	5	6	7
1	Hill ..	288.75	7.16	40.33	18.32	15.76
2	Non-Haryana ..	1,121.08	18.14	61.80	113.21	9.90
3	Haryana ...	460.63	20.11	22.90	109.32	4.21
	Total Punjab ..	1,870.46	45.41	41.19	240.85	7.76

ANNEXURE 20

NUMBER OF MILCH ANIMALS IN PUNJAB, 1961

(In hundreds)

Serial No.	District		Cows	Buffaloes	Cows per sq. mile	Buffaloes per sq. mile
1	2		3	4	5	6
HILL REGION						
1	Simla	..	97	63	44	28
2	Kangra	...	750	603	14	11
3	Lahaul and Spiti	...	18	...	...	...
4	Hoshiarpur	...	452	758	20	34
	Sub-Total	..	1,317 (13.3)	1,424 (11.1)	11	11
NON-HARYANA REGION						
5	Jullundur	...	401	659	30	49
6	Ludhiana	...	458	646	35	49
7	Ferozepur	...	770	1,039	20	27
8	Amritsar	...	580	924	30	48
9	Gurdaspur	...	535	449	40	34
10	Ptiala	...	594	828	31	43
11	Bhatinda	...	469	669	18	25
12	Kapurthala	...	219	222	34	35
13	Ambala	...	166	369	17	38
14	Sangrur	...	596	776	30	39
	Sub-Total	...	4,788 (48.4)	6,581 (51.5)	27	36
HARYANA REGION						
15	Hissar	...	980	948	18	18
16	Rohtak	...	557	974	24	42
17	Gurgaon	...	55[illegible]	720	24	31
18	Karnal	...	767	1061	25	35
19	Mahendragarh	..	339	332	25	25
20	Ambala	...	360	368	27	28
21	Sangrur	...	223	356	21	34
	Sub-Total	...	3,781 (38.3)	4,759 (37.4)	22	28
	Total Punjab	...	9,886	12,764	21	27

Note :—Figures in brackets represent percentages to total Punjab.

Source:—Statistical Abstract of Punjab.

ANNEXURE 21

NUMBER OF VETERINARY INSTITUTIONS AND THEIR STAFF IN PUNJAB (1963-64)

Serial No.	Item	Hill Region	Non-Haryana Region	Haryana Region	Punjab State
1	2	3	4	5	6
1	Veterinary Hospitals ...	47 (14.4)	166 (51.1)	112 (34.5)	385
2	Permanent Outlying Dispensaries ...	43 (13.3)	187 (58.1)	92 (28.6)	322
3	Outlying Dispensaries attached to Hospitals	110 (15.6)	316 (45.0)	277 (39.4)	703
4	Veterinary Touring Dispensaries ..	... (—)	1 (100.0)	... (—)	1
5	First-aid Centres ...	138 (13.8)	158 (57.0)	81 (29.2)	277
6	Veterinary Assistant Surgeons ...	47 (11.9)	183 (48.0)	157 (40.1)	392
7	Animal Husbandry Assistants ...	... (—)	25 (71.4)	10 (28.6)	35
8	Compounders of Provincialized Dispensaries	36 (13.2)	176 (64.2)	62 (22.6)	274
9	Stock Assistants ...	81 (14.7)	299 (54.3)	171 (31.0)	551
10	Dressers and Farriers ...	1 (0.7)	95 (67.4)	45 (3.9)	141

Note:—Figures in brackets represent percentages to total Punjab.

Source:—Statistical Abstract of Punjab.

ANNEXURE 22

C.C. AREA PROPOSED TO BE IRRIGATED IN HARYANA AND NON-HARYANA REGIONS OF PUNJAB STATE

(In thousand acres)

Year	*C.C.A.*				*Area irrigated*			
	Bhakra Canal system	Old Canal system	By tube-wells	Total	Bhakra Canal system	Old Canal system	By tube-wells	Total
1	2	3	4	5	6	7	8	9
			HARYANA REGION					
1947-48 ..	..	2,842.00	..	2,842.00	..	1,182.00		1,182.00
1955-56 ..	2,132.12	2,574.87	Figures not available	4,706.99	618.95	1,513.68	Figures not available	2,132.63
1960-61 ..	2,712.50	2,314.56	439.86	5,466.92	1,182.44	1,130.31	242.18	2,554.93
1963-64 ..	2,787.08	2,292.20	439.86	5,519.14	1,595.51	1,343.21	128.69	3,067.41
			NON-HARYANA REGION					
1947-48 ..	..	4,862.00	..	4,862.00	..	2,789.00	..	2,789.00
1955-56 ..	1,122.48	5,623.60	Figures not available	6,746.08	201.01	3,622.17	Figures not available	3,823.18
1960-61 ..	1,686.28	5,476.96	455.65	7,618.89	395.57	3,787.05	193.64	4,376.26
1963-64 ..	1,682.95	5,557.41	455.65	7,696.01	508.61	4,249.71	136.52	4,894.84

ANNEXURE 23

COMPARISON OF C.C. AREAS ON BHAKRA CANALS IN 1919, 1939—1942, 1946 AND 1948 PROJECTS

(In thousand acres)

Serial No.	Region	1919 *Project*			1939—42 *Project*			1946 (*Mr. Foy's*) *Project*			1948 *Project*			
		Perennial	Non-perennial	Total	Perennial	Non-perennial	Total	Perennial	Non-perennial	Total	Perennial	Non-perennial	Res. perennial	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Haryana ..	2,362.1	..	2,362.1	2,100.3	292.5	2,392.8	1,570.74	292.46	1,863.2	2,320.7	..	412.7	2,733.4
2	Non-Haryana	91.8	735.0	826.8	37.7	875.3	913.0	97.64	1,325.46	1,423.1	433.6	600.2	1,174.0	2,207.8
3	Total Punjab ..	2,453.9	735.0	3,188.9	2,138.0	1,167.8	3,305.8	1,668.38	1,617.92	3,286.3	2,754.3	600.2	1,586.7	4,941.2
	Rajasthan ..	1,085.04	..	1,085.04	905.7	..	905.7	467.10	..	467.1	920.0	..	..	920.0
	Total Punjab and Rajasthan ..	3,538.94	735.0	4,273.94	3,043.7	1,167.8	4,211.5	2,135.48	1,617.92	3,753.4	3,674.3	600.2	1,586.7	5,861.2

Source :—Chief Engineer, Irrigation, Punjab.

ANNEXURE 24

CAPACITY FACTOR ALLOWANCE FOR VARIOUS CANALS

Month	Bhakra canals			Sirhind Canal excluding Sirhind Feeder		Bist Doab Canal	U.B.D.C.		Eastern Canal	Makhu Canal	Sirhind feeder	Western Jamuna Canal		Gurgaon Canal
	Perennial	Res. perennial	Non-perennial	Perennial	Non-perennial		Perennial	Non-perennial				Perennial	Non-perennial	(Proposed)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
June ..	0.9	0.75	0.95	0.9	0.95	0.75	0.90	0.95	0.70	0.70	0.90	0.51	..	0.90
July ..	0.8	..	0.80	0.8	0.80	..	0.50	0.80	0.90	0.90	0.80	0.52	..	0.80
August ..	0.8	..	0.80	0.8	0.80	..	0.80	0.80	0.90	0.90	0.80	0.52	..	0.80
September ..	0.9	0.75	0.90	0.9	0.90	0.75	0.90	0.90	0.90	0.90	0.90	0.57	..	0.90
October ..	0.9	0.9	0.90	0.9	0.90	0.9	0.80	..	0.75	0.75	0.90	0.45	..	0.65
November ..	0.9	0.9	..	0.9	..	0.9	0.80	..	..	..	0.90	0.45	..	0.65
December ..	0.63	0.38	..	0.63	..	0.38	0.56	..	..	..	0.63	0.35	..	0.40
January ..	0.50	0.42	..	0.50	..	0.42	0.45	..	..	..	0.50	0.28	..	0.35
February ..	0.66	0.75	..	0.66	..	0.75	0.61	..	..	..	0.66	0.35	..	0.40
March ..	0.75	0.75	..	0.75	..	0.75	0.70	..	..	..	0.75	0.39	..	0.56
April ..	0.5	0.33	..	0.5	..	0.33	0.50	..	0.25	0.25	0.50	0.39	..	0.50
May ..	0.9	0.75	0.80	0.9	0.8	0.75	0.90	0.80	0.70	0.70	0.90	0.51	..	0.90

Source.—Chief Engineer, Irrigation, Punjab.

ANNEXURE 25

TOTAL NUMBER OF CONNECTIONS AS ON 31ST MARCH, 1965

Serial No.	District	Domestic	Commercial	Industrial	Agricultural	Bulk	Public light	Total
1	2	3	4	5	6	7	8	9
	HILL REGION							
1	Simla ..	2,896	777	41	..	5	11	3,730
2	Kangra ..	14,150	5,098	324	28	6	24	19,630
3	Lahaul and Spiti	..	..	..	..	..	..	..
4	Hoshiarpur ..	28,125	8,088	669	1,448	4	14	38,348
	Sub-Total ..	45,171 (7.7)	13,963 (9.4)	1,034 (4.2)	1,476 (4.9)	15 (15.8)	49 (10.9)	61,708 (7.8)
	NON-HARYANA REGION							
5	Jullundur ..	64,718	15,606	3,048	4,199	1	23	87,595
6	Ludhiana ..	57,243	15,693	3,812	2,885	1	11	79,645
7	Ferozepore ..	37,821	11,086	1,740	1,467	..	15	52,129
8	Amritsar ..	43,105	7,861	2,342	2,979	12	14	56,313
9	Gurdaspur ..	38,322	9,633	2,003	2,011	15	20	52,004
10	Patiala ..	45,028	11,356	1,277	1,976	..	44	59,681
11	Bhatinda ..	23,301	6,365	734	246	..	24	30,670
12	Kapurthala ..	15,047	3,145	731	878	..	4	19,805
13	Ambala ..	20,363	4,854	540	781	11	31	26,580
14	Sangrur ..	18,163	5,598	502	850	5	34	25,152
	Sub-Total ..	363,111 (62.0)	91,197 (61.2)	16,729 (67.4)	18,272 (61.7)	45 (47.4)	220 (49.5)	489,574 (62.0)
	HARYANA REGION							
15	Hissar ..	34,032	9,814	1,445	470	1	28	45,790
16	Rohtak ..	34,867	4,882	1,393	754	5	19	41,920
17	Gurgaon ..	29,454	7,243	1,605	2,297	9	25	40,633
18	Karnal ..	34,476	9,837	1,311	4,255	3	33	49,915
19	Mahendragarh ..	7,519	2,345	315	644	..	12	10,835
20	Ambala ..	27,823	6,633	738	1,068	14	42	36,318
21	Sangrur ..	9,579	2,953	265	448	3	18	13,266
	Sub-Total ..	177,750 (30.3)	43,707 (29.4)	7,072 (28.4)	9,936 (33.4)	35 (36.8)	177 (39.6)	238,677 (30.2)
	Total Punjab ..	586,032	148,867	24,835	29,684	95	446	789,959

Source.— Punjab State Electricity Board.

ANNEXURE 26

SCHEMES FOR UTILIZATION OF FLOOD WATERS FOR IRRIGATION AND OTHER USEFUL PURPOSES

1. *Ghaggar Dam.*—A 215-ft.-high earthen dam, estimated to cost about Rs. 9.2 crores is proposed to be constructed on river Ghaggar near Chandi Mandir.

The water stored in the reservoir is proposed to be utilized for drinking as well as irrigation purposes.

The scheme stands recommended by the Technical Committee. The project which is estimated to cost about Rs. 9.2 crores is under detailed investigation.

2. *Remodelling Sarswati Regulator and strengthening bunds of Bibipur lake.*—Spills from the Saraswati River also find their way into the Ghaggar. A lake was formed at Bibipur near Pehowa. The water used to be stored in the lake up to R. L. 813. Bunds have been strengthened to raise the pond level from R. L. 813 to R.L. 816 in order to increase the storage capacity for flood absorption from 24,000 acre-ft, to about 55,000 acre-ft. The work has been completed and the flood waters are being utilized in Saraswati Distributary, to the extent of 403 cs. The cost of the work is about Rs. 28 lacs.

3. *Utilization of Saraswati Drain for absorbing the floods of Markanda river downstream Jalbera Regulator.*—Kanthala supply channel takes off from the Jalbera Regulator on the Markanda Nadi for feeding Bibipur lake with designed capacity of 1,150 cs. from R.D. 7,000 and 500 cs. from R.D. 7,000 to tail R.D. 16,000. It is proposed to increase the capacity of the Kanthala supply channel from 1,150 cs. at its head to 6,000 cs, so as to moderate the peak discharge of the Markanda by utilizing the flood absorption capacity of Bibipur lake and then passing the same through Saraswati Drain. This scheme is mainly for moderation of the peak flood in Markanda, but Markanda waters will also be utilized in the Saraswati Distributary when water in the Saraswati Nadi is not adequate for irrigation purposes. The cost of the scheme is Rs. 9.96 lacs. The scheme stands recommended by the Technical Committee.

4. *Utilization of additional waters in the areas of Saraswati and Markanda Distributaries from Markanda and Saraswati Nadis.*—It is proposed to provide parallel channels along Saraswati and Markanda Distributary systems for increasing the water allowance/intensity of irrigation in the areas served by these systems. It is likely to utilize about 1,500 cs. of flood waters.

Approximate cost is likely to be Rs. 35 lacs.

5. *Diversion of flood waters of river Markanda into Markanda Distributary.*—In order to moderate the floods in river Markanda and to

utilize the flood waters it is proposed to feed Markanda Distributary with flood waters of river Markanda by constructing 900 ft.-long link channel with a regulator taking off from Jalbera Regulator and outfalling at R.D. 27,800 of Markanda Distributary. The projected cost of the scheme is Rs. 2.29 lacs. The scheme stands recommended by the Technical Committee.

6. *Constructing Sheranwali Parallel channel.*—To utilize the supply of Ghaggar waters, it is proposed to take off Sheranwali parallel channel of about 600 cs. from the Ottu lake for utilization of flood waters. This channel will feed the existing Sheranwali Distributary of Bhakra system and will also increase water allowance/intensity of irrigation of the same system. The scheme stands recommended by the Technical Committee and is in progress. The flood waters of Ghaggar are already being utilized at Ottu into Southern and Northern Ghaggar Canals for Bhakra system.

The projected cost of the scheme is Rs. 27.54 lacs.

7. *Diversion of flood water of river Ghaggar into Narwana Branch.*—It is proposed to divert about 1,000 cs water of Ghaggar river into Narwana Branch of Bhakra System through a link channel and a weir. The projected cost of the scheme is about Rs. 68 lacs. The scheme stands recommended by the Technical Committee.

8. *Scheme for disposal of surplus water of Lissara Nallah opposite R.D. 64,000 (District Hissar).*—It is proposed to construct a regulator at R.D. 64,000 of Lissara Nallah and also to construct a main channel with its tributaries about 20 miles long for disposing of 220 cs. flood water for irrigation purposes. It will increase the water allowance/intensity in the tail portion of Kaluwana and Member Khera Distributary System of Bhakra Canals. The scheme stands recommended by the Technical Committee and is in progress.

The cost of the scheme is about Rs. 9 lacs.

9. *Scheme for disposal of surplus water of Lissara Nallah near R.D. 149,500.*—It is proposed to take off an irrigation channel near R.D. 149,500 of Lissara Nallah with a capacity of 1,295 cs. to provide irrigation facilities to an area of about 75,000 acres which is at present being fed from the Sirhind Canal System. This will feed the existing system and will also increase water allowance/intensity of irrigation of the area. The scheme stands recommended by the Technical Committee.

The approximate cost of the scheme is about Rs 55 lacs.

10. *Diversion of flood waters of river Ghaggar into Bhakra Main Line and Bhakra Main Branch.*—Investigation of a scheme to divert about 4,000 cs. discharge of river Ghaggar into Bhakra Main Line by gravity flow near Khanauri is under finalization. Approximate cost of the scheme is likely to be about Rs. 100 lacs. The scheme of diverting about 3,000 cs. discharge of Ghaggar into Bhakra Main Branch near Chandpur is under investigation. The cost is likely to be about Rs. 50 lacs.

11. *Diversion of flood waters into Rangoi Canal for intensification of irrigation on Ratta Khera and Bhirana Distributary.*—It is proposed to divert about 2,000 cs. of flood water of Ghaggar river through Rangoi drainage into the existing Ratta Khera and Bhirana Distributary systems of Bhakra Canals and also to increase water allowance/intensity of irrigation of the same area. The scheme is under investigation. The cost of the scheme would be about Rs. 70 lacs.

12. *Canalizing Chautang-Rakshi into Western Jumna Canal Main Line Lower.*—The outfall of Chautang-Rakshi Diversion is at present in Western Jumna Canal Main Line Lower, and flood waters thus diverted can be utilized in the existing Western Jumna Canal areas for intensification of irrigation. The scheme is though for a discharge of about 2,000 cs. The cost of the scheme is about Rs. 88.27 lacs.

13. *Diversion of Markanda-Tangri into river Yamuna.*—It is proposed to divert Tangri into Markanda and Markanda into Western Jumna Canal through Chautang-Rakshi Diversion. It will be possible to utilize the diverted water in the Western Jumna Canal, when Dams on river Yamuna are constructed. The scheme stands recommended by the Technical Committee. The cost of the scheme is about Rs. 257 lacs.

14. *Diversion of flood waters of Nai Nallah into Butana Branch.*—It is proposed to divert flood waters of Nai Nallah into Butana Branch by constructing a regulator across the Nallah and a link channel in a length of about three miles and raising the banks along this Nallah. The scheme is under investigation. The cost of the scheme is likely to be about Rs. 15 lacs.

15. *Utilization of waters from Bhindwas depressions into Rewari Lift Scheme in Rohtak District.*—It is proposed to link Bhindwas depressions to Salwas Lift Channel of Rewari Lift Scheme. The lift scheme is at present ready to take a discharge of 162 cusecs to which extent the utilization would be possible at this stage. It may be possible to utilize about 332 cusecs in the final stage. The cost of the scheme is expected to be about Rs. five lacs.

16. *Utilization of Sahibi Nadi waters.*—It is proposed to utilize the flood waters of Sahibi Nadi by constructing channels taking off from the Sahibi Nadi for irrigation of Rewari areas. The utilization may be to the extent of 500 cusecs. The cost of the scheme is likely to be about Rs. 20 lacs.

17. *Utilization of waters of drains into the canals passing nearby.*—Bassian, Rachin, Bhiki-Khatra, Jaghera and Sehna Drains, Mohrana Drain, Hari Garh Drain, Dhuri Drain, Doraha Drain and Nai Nallah are already linked with the canals. The flood waters of these drains are being utilized for irrigation purposes in these canals.

It is further proposed to utilize some flood waters of proposed Amin and Pundri Drains of Kaithal Drainage System into Sirsa Branch; Golewala Drainage system into Bikaner Canal and proposed Safidon Drain into Hansi Branch.

18. *Utilization of flood waters by Lift Schemes.*—It would be possible to utilize waters by lifts or by direct lift irrigation from depressions. As the working cost of the lift schemes is always higher; flow schemes are proposed to be completed first. The lift schemes can be taken up later after completing all the flow utilization schemes. The cultivators, however, are at present encouraged to utilize drain waters through local lifts themselves. Possible lift schemes are listed below:—

(a) Indri Drain crossing with Western Jumna Canal;

(b) Gaunchi Drainage Crossing various distributaries in Gurgaon District ;

(c) Ujjina Drain crossing with Gurgaon Canal Distributaries ;

(d) Diversion Drain No. 8 crossing Bhalout Sub-Branch and Delhi Branch ;

(e) Direct pumping from Bhupindra Sagar Lake, East Bein, West Bein, Bhindwas, Ujjina, Kotla and Chandani depressions, Dhikansau-Pachisdara Nadi near Rajpura.

19. *Utilization of drain waters through rivers.*—It would be possible to utilize the waters of the drains having their outfalls into rivers into the canals off-taking from the rivers downstream of the outfalls such as Gurgaon, Sirhind Feeder and Eastern Canal, etc., when the discharge in the rivers is low.

ANNEXURE 27

SCHEMES SUGGESTED BY DR. H. L. UPPAL.

(1) Minor Irrigation Scheme for Shatrana Tract with water of Ghaggar River.

(2) Utilization of flood water of Ghaggar River for Reclamation of Thur and Alkali Land in Guhla Tract.

(3) Utilization of water of Ghaggar River for reclamation of Saline and Alkali Lands and minor irrigation schemes for Rangoi Tract.

(4) Diverting part of water of Drain No. 8 towards Dadri instead of Jahazgarh and Bhindawas lakes for controlling floods in Drain No. 8 for changing brackish waters and for irrigation of parched area of Dadri Tehsil.

(5) Charging brackish water of Rewari Area with sweet water of Sahibi Nadi near Jarthal.

(6) Remodelling and extending the existing experimental channel off-taking from Sahibi Nadi for charging brackish water of Rewari Tehsil.

(7) Diverting water of Dohan River for charging brackish water of Narnaul Area (near Hamidpur).

(8) Diverting water of Dohan River for charging brackish water of Mahendragarh Area (near Mahendragarh).

(9) Diverting water of Krishnawati Nadi for charging water of Ateli area.

ANNEXURE 28

SMALL-SCALE UNITS REGISTERED AS ON 31ST DECEMBER, 1965

Serial No.	District		Total number of units
1	2		3
	HILL REGION		
1	Simla	..	57
2	Kangra	..	245
3	Lahaul and Spiti	..	...
4	Hoshiarpur	..	445
	Sub-Total	..	747 (4.2)
	NON-HARYANA REGION		
5	Jullundur	..	1,858
6	Ludhiana	..	3,981
7	Ferozepur	..	440
8	Amritsar	..	2,671
9	Gurdaspur	..	922
10	Patiala	..	999
11	Bhatinda	..	110
12	Kapurthala	..	272
13	Ambala	..	360
14	Sangrur	..	1,226
	Sub-Total	..	12,839 (72.5)
	HARYANA REGION		
15	Hissar	..	516
16	Rohtak	..	779
17	Gurgaon	..	712
18	Karnal	..	908
19	Mahendragarn	..	28
20	Ambala	..	999
21	Sangrur	..	191
	Sub-Total	..	4,133 (23.3)
	Total Punjab	..	17,719

Note.—Figures in brackets represent percentages to total Punjab.

Source :—Director of Industries, Punjab.

ANNEXURE 29

Units of Energy consumed, category-wise, for the year, 1964-65.

ANNEXURE 29

UNITS OF ENERGY CONSUMED, CATEGORY-WISE, FOR THE YEAR 1964-65

(In lakhs)

Serial No.	District	Domestic Supply	Commercial Supply	Small Industrial Supply	Medium Industrial Supply	Large Industrial Supply	Agri. Industrial Supply	Cottage Industrial Supply	Bulk Supply	Street Lighting	Total
1	2	3	4	5	6	7	8	9	10	11	12
	HILL REGION										
1	Simla ..	3.33	9.20	1.87	1.56	..	..	..	119.57	0.58	136.11
2	Kangra ..	13.60	11.33	13.12	5.45	0.02	0.39	..	8.91	1.98	54.80
3	Lahaul and Spiti ..	0.17	0.09	(a)	..	..	..	..	..	0.05	0.31
4	Hoshiarpur ..	31.50	19.63	53.44	23.67	14.39	31.89	(a)	..	3.24	177.76
	Sub-Total ..	48.60	40.25	68.43	30.68	14.41	32.28	(a)	128.48	5.85	368.98
		(5.9)	(5.9)	(4.5)	(2.1)	(0.6)	(2.6)	(—)	(10.3)	(6.5)	(3.8)
	NON-HARYANA REGION										
5	Jullundur ..	110.01	96.66	193.48	112.32	46.12	143.82	0.74	..	9.72	712.87
6	Ludhiana ..	115.32	115.20	261.57	203.80	18.67	87.84	(a)	8.81	6.40	817.61
7	Ferozepur ..	61.06	40.09	85.60	90.54	99.52	43.51	(a)	45.68	5.84	471.84
8	Amritsar ..	40.27	23.42	168.75	207.79	110.09	111.80	0.01	579.02	2.34	1,243.49
9	Gurdaspur ..	52.39	35.34	118.80	45.51	62.07	68.66	0.02	138.65	5.41	526.85
10	Patiala ..	64.38	58.06	76.49	108.71	118.90	81.42	0.01	0.11	8.42	516.50

11	Bhatinda	..	28.19	21.72	43.36	28.81	53.19	5.16	(a)	(a)	4.45	184.88
12	Kapurthala	..	20.86	14.16	44.71	70.90	196.57	26.51	..	..	2.76	376.47
13	Ambala	..	43.13	40.88	35.87	86.56	282.29	55.87	0.32	84.52	5.92	635.1(
14	Sangrur	..	21.60	15.42	42.20	14.80	88.31	75.07	0.35	11.52	4.31	273.58
	Sub-Total	..	557.21	460.95	1,070.83	969.74	1,075.73	699.66	1.45	868.11	55.57	5,759.25
			(67.2)	(67.9)	(69.8)	(65.1)	(42.3)	(57.2)	(20.7)	(69.6)	(62.2)	(59.8)
	HARYANA REGION											
15	Hissar	..	27.83	23.27	44.63	54.12	258.13	18.39	2.17	38.41	3.01	469.96
16	Rohtak	..	37.18	23.86	74.24	105.29	35.23	13.19	0.21	13.28	4.13	306.61
17	Gurgaon	..	36.50	28.94	94.42	116.80	489.14	56.61	1.68	47.40	3.25	874.74
18	Karnal	..	44.49	32.85	95.00	78.63	10.43	269.33	0.52	30.68	5.39	567.52
19	Mahendragarh	..	6.52	5.02	16.38	7.27	224.67	17.20	0.35	0.01	1.78	279.20
20	Ambala	..	58.93	55.86	49.01	118.27	385.70	76.33	0.44	115.21	8.10	867.85
21	Sangrur	..	11.39	8.13	22.26	7.81	46.57	39.59	0.19	6.09	2.27	144.29
	Sub-Total	..	222.84	177.93	395.94	488.19	1,449.87	490.64	5.56	251.27	27.93	3,510.17
			(26.9)	(26.2)	(25.7)	(32.8)	(57.1)	(40.2)	(79.3)	(20.1)	(31.3)	(36.4)
	Punjab State	..	828.65	679.13	1,535.20	1,488.61	2,540.01	1,222.58	7.01	1,247.86	89.35	9,638.40

Note.—1. (a) stands for less than 500 units.

2. Figures in brackets represent percentages to total Punjab.

Source :—Punjab State Electricity Board, Patiala

ANNEXURE 30

ALLOCATION OF SCARCE COMMODITIES

Serial No.	District	District-wise break up of steel for the year 1964-65 (in tons)				Allocation of pig iron for the year 1964-65 (In tons)	Annual allocation of hard coke for the year 1964 (In wagons)	*Allocation of copper and zinc for the year* 1963-64 *(In metric tons)*		Imported steel for the period October, 1964 to March, 1965 (in 000 rupees)
		Black sheets		Plain thinner than 20G	Plates 5-8mm			Copper	Zinc	
		10-14G	16-20G							
1	2	3	4	5	6	7	8	9	10	11
	HILL REGION									
1	Simla ..	2	4	..	..	..	..	0.02	0.001	..
2	Kangra ..	..	2	..	..	..	..	..	..	3
3	Lahaul and Spiti ..	..	2	..	..	..	..	..	..	..
4	Hoshiarpur ..	..	16	..	38	65	16	11	5	1
	Sub-Total ..	2	24	..	38	65	16	11.02	5.001	4
		(0.2)	(3.8)	..	(4.0)	(0.1)	(0.5)	(0.4)	(0.3)	(0.2)
	NON-HARYANA REGION									
5	Jullundur ..	350	128	..	59	11,471	1,032	683	229	409
6	Ludhiana ..	234	135	..	48	5,643	446	221	151	750
7	Ferozepur ..	7	77	7	..	207	48	..	..	13
8	Amritsar ..	..	102	1	133	4,017	290	45	56	145
9	Gurdaspur ..	..	37	..	230	18,887	640	82	62	138
10	Patiala ..	38	25	29	29	641	76	34	50	58

11	Bhatinda	..	5	21	8	2	11	6	9	7	3
12	Kapurthala	..	..	2	..	..	1,651	158	116	124	2
13	Ambala	..	143	14	108	157	950	167	435	266	33
14	Sangrur	..	..	11	9	3	106	26	24	13	8
	Sub-Total	..	777	552	162	661	43,584	2,881	1,656	958	1,539
			(77.7)	(86.5)	(40.7)	(70.1)	(89.8)	(79.5)	(61.6)	(56.3)	(76.6)
	HARYANA REGION										
15	Hissar	..	..	5	..	9	168	32	15	44	3
16	Rohtak	..	..	15	..	..	397	66	54	90	122
17	Gurgaon	..	..	5	70	..	476	198	224	126	116
18	Karnal	..	10	10	..	..	2,384	176	60	75	183
19	Mahendragarh	..	..	1	..	..	..	..	2	2	..
20	Ambala	..	212	21	162	233	1,414	249	649	395	48
21	Sangrur	..	..	5	4	2	52	12	12	7	..
	Sub-Total	..	222	62	236	244	4,891	725	1,016	739	472
			(22.1)	(9.7)	(59.3)	(25.9)	(10.1)	(20.0)	(38.0)	(43.4)	(23.2)
	Total Punjab	..	1,001	638	398	943	48,540	3,622	2,677.02	1,702.001	2,035

Source :—Director of Industries, Punjab.

ANNEXURE 31

EXTRACT FROM FINANCE MINISTER'S BUDGET SPEECH FOR THE YEAR 1965-66.

A concerted effort will be made to bring about dispersal of industry with the object of opening of new areas all over the State. Besides the establishment of special institutions, such as Agro-Industrial Corporation and Industrial Development Corporation, and the strengthening of the existing institutions, it has been decided to offer a package of incentives to new industrial ventures which may be set up in and around the growth points selected and approved by Government. These are—

(1) *Land.*—Areas will be acquired and sold out on 'no profit no loss' basis and the price will be recovered in easy instalments. Land on similar conditions will also be given for the establishment of subsidized industrial houses and residential colonies for the staff of the industrial undertakings.

(2) *Finance and Capital.*—The Punjab Government directly or through the proposed Industrial Development Corporation will underwrite or participate in the share capital of selected public limited companies setting up medium and large-scale industrial units. The operations of the Punjab Financial Corporation will be further expanded by enabling the Corporation to raise additional capital so that larger number of units can be given medium and long-term loans.

(3) *Power.*—Special concession will be offered to power-based industries and to encourage self-generation of power, suitable subsidy on the capital cost of the generation equipment will be granted.

(4) *Taxation.*—Sales tax on raw materials purchased by the industry and on its finished products will be refunded for an initial period of five years commencing from the date of the licence or registration of the unit, subject to such refund not exceeding in one year 8 per cent of the equity capital of the industry.

(5) *Feasibility Studies.*—Government will meet 50 per cent of the cost of preparation of feasibility reports in case of selected industrial projects provided the report is prepared by an agency approved by it. Such contribution will be converted into share capital of Government in the venture in the event of the Project being implemented, failing which the report will become the property of Government.

(6) *Preference in Stores Purchase.*—Additional marginal preference of 2½ per cent will be allowed in the rates of products purchased from the industries set up in growth points, as compared to industries in other areas for a period of ten years from the date of licence or registration.

(7) *Building materials.*—Government will provide controlled building materials to industries in these areas on priority basis.

To Indians settled in foreign countries and migrating to India and setting up industrial units in the Punjab, the above concessions will be available even if these units are located outside the growth points, provided their schemes are approved by Government.

These concessions will also be available to small-scale units to be set up in selected Industrial Areas or Estates and such of the growth points where it is decided to sponsor establishment of small-scale units, provided their schemes are approved by Government.

ANNEXURE 32

TEHSIL-WISE AREA UNDER SUGARCANE IN THE HARYANA REGION DURING THE YEAR 1964-65

Serial No	District	Tehsil	Area under sugarcane (in 00 acres)
1	2	3	4
1	Hissar	.. Bhiwani	.. 17
		Fatehabad	.. 50
		Hansi	.. 159
		Hissar	.. 64
		Sirsa	.. 24
		Total	.. 314
2	Rohtak	.. Gohana	.. 272
		Jhajjar	.. 240
		Rohtak	.. 344
		Sonepat	.. 373
		Total	.. 1,229
3	Gurgaon	.. Ballabhgarh	.. 43
		Ferozepur-Jhirka	.. 45
		Gurgaon	.. 8
		Nuh	.. 60
		Palwal	.. 195
		Rewari	.. 1
		Total	.. 352
4	Karnal	.. Guhla	.. 29
		Kaithal	.. 188
		Karnal	.. 277
		Panipat	.. 280
		Thanesar	.. 411
		Total	.. 1,185
5	Mahendragarh	.. Dadri	.. 36
		Mahendragarh	.. ..
		Narnaul	.. ..
		Total	.. 36
6	Ambala	.. Ambala	.. 101
		Jagadhri	.. 270
		Naraingarh	.. 56
		Total	.. 427
7	Sangrur	.. Jind	.. 105
		Narwana	.. 84
		Total	.. 189

ANNEXURE 33

DISTRICT-WISE BREAK-UP OF POWER-LOOMS IN THE DECENTRALISED SECTOR

Serial No.	District		Number of Powerlooms
1	2		3
	NON-HARYANA REGION		
1	Jullundur	..	25
2	Ludhiana	..	2,536
3	Amritsar	..	6,809
4	Gurdaspur	..	5
5	Patiala	..	4
6	Kapurthala	..	4
7	Sangrur	..	39
	Sub-Total	..	9,422
	HARYANA REGION		
8	Hissar	..	15
9	Rohtak	..	33
10	Gurgaon	..	337
11	Karnal	..	9
12	Ambala	..	18
	Sub-Total	..	412
	Total Punjab	..	9,834

ANNEXURE 84

METALLED ROAD MILEAGE IN PUNJAB MAINTAINED BY P. W. D. (B. & R.) AND LOCAL BODIES

Serial No.	District	1950-51	1963-64	Road mileage per 100 sq. miles of area 1950-51	1963-64
1	2	3	4	5	6
	HILL REGION				
1	Simla ..	63	75	28.4	33.8
2	Kangra ..	150	257	2.8	4.9
3	Lahaul and Spiti ..	..	..	..	..
4	Hoshiarpur ..	132	362	5.9	16.3
	Sub-Total ..	345	694	2.8	5.6
	NON-HARYANA REGION				
5	Jullundur ..	196	324	14.6	24.1
6	Ludhiana ..	182	303	13.7	22.9
7	Ferozepur ..	290	566	7.5	14.5
8	Amritsar ..	263	479	13.4	24.4
9	Gurdaspur ..	160	349	12.0	26.1
10	Patiala ..	251	393	13.0	20.4
11	Bhatinda ..	110	403	4.1	15.2
12	Kapurthala ..	97	148	15.1	23.0
13	Ambala ..	61	180	6.3	18.5
14	Sangrur ..	102	367	5.1	18.5
	Sub-Total ..	1,712	3,512	9.5	19.5
	HARYANA REGION				
15	Hissar ..	240	780	4.5	14.5
16	Rohtak ..	309	507	13.2	21.7
17	Gurgaon ..	210	607	8.9	25.8
18	Karnal ..	212	480	6.9	15.6
19	Mahendragarh ..	30	196	2.2	14.6
20	Ambala ..	181	296	13.6	22.3
21	Sangrur ..	..	128	..	12.21
	Sub-Total	1,182	2,994	7.0	17.8
	Total Punjab	3,239	7,200	6.8	15.2

Source : Statistical Abstract of Punjab.

ANNEXURE 35

RAIL MILEAGE IN PUNJAB (BROAD GAUGE)

(Miles)

Serial No.	Route	Hill Region	Non-Haryana Region	Haryana Region
1	2	3	4	5
1	Amritsar-Saharanpur ..	..	145.0	46.9
2	Kalka-Ambala Cantt. ..	..	43.8	..
3	Jullundur Cantt.-Hoshiarpur ..	9.4	14.4	..
4	Jullundur City-Pathankot ..	..	72.5	..
5	Amritsar-Pathankot ..	..	66.9	..
6	Amritsar-Khemkaran ..	..	48.8	..
7	Amritsar-Atari ..	..	16.2	..
8	Bharoli-Madhopur ..	..	8.1	..
9	Batala-Quadian ..	..	12.5	..
10	Verka-Derababa Nanak ..	..	28.7	..
11	Phagwara-Jaijon Doaba ..	16.2	26.2	..
12	Ludhiana-Ferozepur Cantt. ..	..	78.1	..
13	Ludhiana-Hissar ..	..	101.9	29.4
14	Ferozepur-Fazilka ..	..	55.6	..
15	Ferozepur Cantt.-Bhatinda-Bahadurgarh ..	..	123.8	98.1
16	Rajpura-Bhatinda ..	..	108.7	..
17	Bhatinda-Hindumalkot ..	..	63.1	..
18	Narwana-Kurukshetra ..	..	..	54.4
19	Rohtak-Gohana ..	..	..	20.0
20	Jind-Panipat ..	..	..	44.4
21	Ambala Cantt.-Panipat-Delhi ..	..	..	96.2
22	Sirhind-Nangal Dam ..	35.0	30.0	..
23	Jullundur City-Ferozepore Cantt. ..	..	73.7	..
24	Jullundur City-Shankar ..	..	15.7	..
25	Phillaur-Lohian-khas ..	..	40.0	..
26	Shankar-Nakodar ..	..	1.9	..
27	Delhi-Palwal-Hodel ..	..	..	43.7
	Total Punjab ..	60.6	1,175.6	433.1

Note.—The distribution of mileage in the various regions has been worked out approximately.

ANNEXURE 35

AIL MILEAGE IN PUNJAB (METRE GAUGE)

(Miles)

Serial No.	Route	Hill Region	Non-Haryana Region	Haryana Region
1	2	3	4	5
1	Rewari-Bhatinda-Fazilka	.. ..	90.6	155.0
2	Rewari-Garhiharsaru-Gurgaon	.. ..	..	32.5
3	Garhiharsaru-Farrukh Nagar	.. ..	..	7.5
4	Rewari-Rampur Beri	.. ..	..	70.0
5	Hissar-Charaur	.. ..	..	11.9
6	Bhatinda-Sangat	.. ..	10.0	17.5
7	Rewari-Narnaul-Nizampur	.. ..	..	41.2
8	Rewari-Bandikui	.. ..	..	12.5
	Total Punjab	.. ..	100.6	348.1

Note.—The distribution of mileage in the various regions has been worked out approximately.

ANNEXURE 37

ROADS PROPOSED FOR CONSTRUCTION IN THE BACKWARD PARTS OF HARYANA AREA

Serial No.	Name of Road	Length (Miles)	Cost (Rs in lacs)
1	2	3	4
1	Karnal District—		
	(i) Shahbad-Ladwa ..	16.00	16.00
	(ii) Narwana-Assandh ..	22.00	22.00
	(iii) Pundri-Moonak ..	24.00	24.00
	(iv) Deoban-Nakuran ..	18.00	18.00
	(v) Smalkha-Naultha ..	7.00	7.00
	(vi) Shahpur-Safidon ..	13.00	13.00
	(vii) Kurukshetra to Karsa via Kirmich ..	14.00	14.00
	(viii) Pehowa to Kakrala on Kaithal-Guhla Road ..	14.00	14.00
	(ix) Pipli to Indri ..	11.00	11.00
	Total ..	139.00	139.00
2	Hissar District—		
	(i) Barwala-Jind ..	16.00	16.00
	(ii) Bhiwani-Mundhal Khurd ..	16.00	16.00
	(iii) Audhan to Manwal ..	8 00	8.00
	Total ..	40.00	40.00
3	Sangrur District—		
	(i) Jind-Safidon ..	18.00	18.00
	(ii) Jind-Barwala (Section Sangatpura to district boundary)	4.00	4.00
	(iii) Narwana-Assandh ..	8.00	8.00
	(iv) Latani-Uchana ..	14.00	14.00
	(v) Kalyat, Balu and on to Deoban-Nakuran Road ..	8.00	8.00
	(vi) Tohana to Khanauri ..	16.00	16.00
	Total ..	68.00	68.00

ANNEXURE 38

ROADS PROPOSED IN LIEU OF RAILWAY MILEAGE

District	Name of Road	Length (Miles)	Cost (Rs in lacs)
1. Karnal ..	(i) Shahbad-Thol ..	11.00	11.00
	(ii) Kasaur to Kaithal-Gunla Road	7.00	7.00
	(iii) Mandhal to Pundri-Moonak Road ..	8.00	8.00
	(iv) Thanesar Lukhi to Ambala-Pehowa Road ..	15.00	15.00
	Total ..	41.00	41.00
2. Hissar ..	(i) Madhosinghana-Ellanabad ..	17.00	17.00
	(ii) Tosham to Kaira ..	16.00	16.00
	(iii) Balamand-Siwal ..	10.00	10.00
	Total ..	43.00	43.00
3. Sangrur ..	(i) Jind-Khanda Kheri ..	8.00	8.00
	(ii) Approach from village Jhil to Narwana ..	4.00	4.00
	Total ..	12.00	12.00
4. Gurgaon ..	Hathin to Sikrawa ..	8.00	8.00 (to serve Mewat Area)
5. Mahendragarh ..	Jhojju Kalan-Satnali ..	14.00	14.00

ANNEXURE
HIGH

Serial No.	District	School-going children			Existing institutions		
		Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7	8
Hill Region							
1	Simla (included under Ambala) ..	..	..	..	..	..	..
2	Kangra ..	15,612	5,092	20,704	86	21	107
3	Lahaul and Spiti ..	..	..	..	..	..	..
4	Hoshiarpur ..	19,080	5,683	24,763	114	21	135
	Sub-Total ..	34,692	10,775	45,467	200	42	242
Non-Haryana Region							
5	Jullundur ..	19,090	5,418	24,508	83	34	117
6	Ludhiana ..	16,199	4,589	20,788	76	32	108
7	Ferozepur ..	23,678	6,589	30,267	75	28	103
8	Amritsar ..	22,909	6,426	29,335	87	37	124
9	Gurdaspur	14,653	4,140	18,793	59	17	76
10	Patiala ..	15,900	4,534	20,434	54	26	80
11	Bhatinda ..	1,587	4,575	6,162	51	19	70
12	Kapurthala ..	5,215	1,418	6,633	30	10	40
13	Ambala ..	8,122	2,268	10,390	32	17	49
14	Sangrur ..	14,851	4,298	19,149	51	12	63
	Sub-Total ..	142,204	44,255	186,459	598	232	830
Haryana Region							
15	Hissar ..	22,020	6,572	28,592	67	11	78
16	Rohtak ..	21,768	6,265	28,033	77	16	93
17	Karnal ..	22,241	6,174	28,415	65	20	85
18	Gurgaon ..	17,331	6,760	24,091	71	13	84
19	Mahendragarh	7,692	2,363	10,055	34	6	40
20	Ambala ..	12,097	3,379	15,476	48	25	73
21	Sangrur ..	7,190	2,081	9,271	25	6	31
	Sub-Total ..	110,339	33,594	143,933	387	97	484
	Total Punjab ..	287,235	88,624	375,859	1,185	371	1,556

Note.— Figures for Haryana and Non-Haryana portions of Ambala and Sangrur worked out on the basis of population of both in the two regions.

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SCHOOLS

Number of Schools required			*Number of additional schools required*			*Number of Schools upgraded*			*Deficiency (–) Excess (+)*		
Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total deficiency
9	10	11	12	13	14	15	16	17	18	19	20
..	..	..	...	..	..	..	..	...	...	..	..
89	27	116	3	6	9	9	1	10	+6	–5	–5
..	..	..	..	..	..	..	..	..	..	...	..
95	28	123	–19	7	7	2	3	5	+21	–4	–4
184	55	239	3 –19	13	16	11	4	15	+27	–9	–9
95	27	122	12	–7	12	..	4	4	–12	+11	–12
81	32	104	5	–9	5	3	[4	7	–2	+13	–2
118	33	151	43	–5	43	10	1	11	–33	+6	–33
114	32	146	27	–5	27	8	2	10	–19	+7	–19
73	21	94	14	4	18	4	3	7	–10	–1	–11
79	23	102	25	–3	25	4	..	4	–21	+3	–21
79	23	102	28	4	32	7	..	7	–21	–4	–25
26	8	34	–4	–2	–6	1	..	1	+5	+2	+7
41	11	52	9	–6	9	3	1	4	–6	+7	–6
74	22	96	23	10	33	3	..	3	–20	–10	–30
780	223	1,003	186	18	204	43	15	58	–144 +5	–15 +49	–159
110	33	143	43	22	65	12	..	12	–31	–22	–53
109	32	141	32	16	48	15	4	19	–17	–12	–29
111	31	142	46	11	57	14	1	15	–32	–10	–42
87	24	111	16	11	27	13	..	13	–3	–11	–14
40	12	52	6	6	12	2	..	2	–4	–6	–10
60	17	77	12	–8	12	5	1	6	–7	+9	–7
36	10	46	11	4	15	2	1	3	–9	–3	–12
553	159	712	166	70	236	63	7	70	–103	–64 +9	–167
1,517	437	1,954	355	101	456	117	26	143	–247 +32	–88 +58	–335

Source :—Director of Public Instruction, Punjab.

ANNEXURE
MIDDLE

Serial No.	District	School-going children			Total number of schools	
		Male	Female	Total	Male	Female
1	2	3	4	5	6	7
	Hill Region					
1	Simla ..	1,811	843	2,654	12	6
2	Kangra }	20,685	9,326	30,011	138	62
3	Lahaul and Spiti }					
4	Hoshiarpur	23,971	9,898	33,869	160	66
	Sub-Total ..	46,467	20,067	66,534	310	134
	Non-Haryana Region					
5	Jullundur ..	24,951	10,209	35,160	166	68
6	Ludhiana ..	20,974	8,579	29,553	140	57
7	Ferozepore ..	31,287	12,632	43,919	209	84
8	Amritsar ..	30,391	12,356	42,747	203	82
9	Gurdaspur ..	18,660	7,762	26,422	124	52
10	Patiala ..	21,420	8,779	30,199	143	59
11	Bhatinda ..	21,276	8,597	29,873	142	57
12	Kapurthala ..	6,791	2,809	9,600	45	20
13	Ambala ..	10,624	4,496	15,120	71	30
14	Sangrur ..	19,460	8,044	27,504	130	54
	Sub-Total ..	2,05,834	84,263	2,90,097	1,373	563
	Haryana Region					
15	Hissar ..	30,001	12,838	42,839	200	86
16	Rohtak ..	28,486	11,813	40,299	190	79
17	Gurgaon ..	22,796	9,315	32,111	152	62
18	Karnal ..	29,661	12,120	41,781	198	81
19	Mahendragarh ..	10,721	4,680	15,401	71	31
20	Ambala ..	15,823	6,697	22,520	105	45
21	Sangrur ..	9,421	3,894	13,315	63	26
	Sub-Total ..	1,46,909	61,357	2,08,266	979	410
	Total Punjab ..	3,99,210	1,65,687	5,64,897	2,662	1,107

Note.— Figures for Haryana and Non-Haryana portions of Ambala and Sangrur worked out on the basis of population of both in the two regions.

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SCHOOLS

required	*Existing institutions*			Number of additional schools required	Number of schools upgraded 1965-66	Total institutions	Balance still required
Total	Male	Female	Total				
8	9	10	11	12	13	14	15
18	27	14	41	..	1	42	— 24
200	184	50	234	12	15	249	— 49
226	163	53	216	13	20	236	— 10
444	374	117	491	25	36	527	— 83
234	123	65	188	46	13	201	33
197	126	60	186	14	9	195	2
293	170	68	238	55	16	254	39
285	154	69	223	62	12	235	50
176	115	48	163	18	11	174	2
202	108	40	148	54	12	160	42
199	102	31	133	66	13	146	53
65	52	15	67	5	5	72	— 7
101	66	33	99	5	5	104	— 3
184	97	20	117	67	24	141	43
1,936	1,113	449	1,562	392	120	1,682	264 (62.0)
286	160	37	197	89	26	223	63
269	165	48	213	56	38	251	18
214	162	38	200	24	13	213	1
279	157	38	195	84	26	221	58
102	92	8	100	23	12	112	— 10
150	98	48	146	7	7	153	— 3
89	47	9	56	33	11	67	22
1,389	881	226	1,107	316	133	1,240	162 (38.0)
3,769	2,368	792	3,160	733	289	3,449	426

Source :—Director of Public Instruction, Punjab

ANNEXURE 41

TECHNICAL INSTITUTIONS AND THEIR SEATING CAPACITY IN PUNJAB, 1965.

Serial No.	District	*Colleges*		*Polytechnics*		*Industrial Training Institutes*	
		Number	Seats	Number	Seats	Number	Seats
1	2	3	4	5	6	7	8
HILL REGION							
1	Simla ..	..	..	..	—	1	388
2	Kangra ..	—	..	3	270	2	536
3	Lahaul & Spiti ..	..	..	..	..	..	..
4	Hoshiarpur ..	..	..	1	120	4	1,532
	Sub-Total ..	..	..	4	390	7	2,456
NON-HARYANA REGION							
5	Jullundur ..	..	..	1	240	2	736
6	Ludhiana ..	1	180	1	180	2	976
7	Ferozepore ..	..	..	1	120	3	1,324
8	Amritsar ..	..	..	..	..	3	1,092
9	Gurdaspur ..	..	..	1	60	4	1,316
10	Patiala ..	1	180	2	240	4	1,316
11	Bhatinda ..	..	..	..	..	3	1,172
12	Kapurthala ..	..	..	1	240	1	312
13	Ambala ..	1	450	1	330	2	924
14	Sangrur ..	..	..	..	..	1	352
	Sub-Total	3	810	8	1,410	25	9,520
HARYANA REGION							
15	Hissar ..	..	—	1	120	3	1,552
16	Rohtak ..	..	..	3	240	3	1,428
17	Gurgaon ..	..	..	..	..	3	1,084
18	Karnal ..	1	120	1	355	3	1,144
19	Mahendragarh ..	..	..	..	..	2	604
20	Ambala ..	..	..	1	300	2	1,112
21	Sangrur ..	..	..	..	..	1	260
	Sub-Total	1	120	6	1,015	17	7,184
	Total Punjab	4	930	18	2,815	49	19,160

Source—: Director, Technical Education and Director, Industrial Training, Punjab.

ANNEXURE 42

PHASED PROGRAMME FOR TAKING UP THE WATER SUPPLY SCHEME FOR MAHENDRAGARH DISTRICT

(1) *Part I.—Estimated cost Rs.* 1,40,21,827.—This covers the construction of water works at Dadri distributory, laying of rising mains and distribution mains for serving the prospective rural population of 99,500 and prospective urban population of 20,500. The villages served are partly in Dadri Tehsil and partly in Mahendragarh Tehsil.

(2) *Part II—Estimated cost Rs.* 2,54,81,580.—This portion consists of construction of Headworks of Bhiwani distributory near Bhiwani and other connected works. It will cover the prospective rural population of 3,30,000 and prospective population (Urban) of 6,700. The villages covered are parly in Dadri and Mahendragarh Tehsils of Mahendragarh District and Loharu Tehsil of Hissar District.

Part II, Phase I—(Approximate cost Rs. 1,33,68,033).—It will cover construction of Headworks for about 50 per cent population to be served finally by part II at Bhiwani, laying of rising main from water works A, laying of distribution mains for villages to be served by this rising mains.

(ii) *Part II, Phase II—(Approximate cost Rs.* 1,22,80,636).—This includes the construction of balance units at the Headworks. Construction of boosting station near the junction 'A', laying of rising main 'A'-L and 'A'-C, including construction of overhead service reservoir and laying of distribution mains for various villages. In case it is desired by Government that the areas around Loharu may also be served in Phase I, of Part II, then the work of rising main 'A'-L will also be taken in the 1st Phase. It is considered that the cost of Part II, Phase I, will then work out near about Rs. 2.00 crores.

(3) *Part III—Estimated cost Rs.* 2,28,93,298.—This part contains the drilling of Tube-wells in Dahina-Zainabad area and connected works which will cover a prospective rural population of 2,45,788 and prospective urban population of 38,204. The villages covered will be mostly in Mahendragarh and Narnual tehsils.

The conditions in Dadri and Loharu tehsils are of extreme scarcity. No canals are available in this area and in most of the cases the sub-soil water level is brackish. It has, therefore, been suggested to Government that the work for this area may be taken in the first instance, which will mean that Part II of the scheme may be taken in the last instance. The estimated cost of part II of the Scheme is Rs. 2,54,31,580. It is possible that this much amount may not be coming forward immediately or in the near future. It has, therefore, been proposed that Part II of the Scheme may be split up into 2 phases as per details given above.

ANNEXURE 43

NUMBER OF HOSPITALS, DISPENSARIES, BEDS, PRIMARY HEALTH CENTRES AND MATERNITY AND CHILD WELFARE CENTRES IN PUNJAB ON 1ST JANUARY, 1965

Serial No.	District	*Hospitals*			*Dispensaries*			*No. of Beds**	Primary Health Centres	*Maternity and Child Welfare Centres*		
		Rural	Urban	Total	Rural	Urban	Total			Rural	Urban	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
HILL REGION												
1	Simla ..	4	5	9	2	6	8	638	2	2	4	6
2	Kangra ..	4	8	12	38	5	43	960	18	3	3	6
3	Lahaul and Spiti ..	1	..	1	7	..	7	18	2	..	..	..
4	Hoshiarpur ..	1	6	7	21	11	32	532	16	2	4	6
	Sub-Total ..	10	19	29	68	22	90	2,148	38	7	11	18
		(58.8)	(12.0)	(16.6)	(21.4)	(13.3)	(18.6)	(16.7)	(17.5)	(13.5)	(13.2)	(23.3)
NON-HARYANA REGION												
5	Jullundur ..	..	10	10	21	11	32	892	10	1	6	7
6	Ludhiana ..	..	10	10	18	6	24	1,110	10	5	13	18
7	Ferozepur ..	..	12	12	32	8	40	858	14	6	7	13
8	Amritsar ..	3	15	18	21	16	37	1,911	14	5	10	15
9	Gurdaspur ..	1	9	10	15	10	25	506	9	4	2	6

10	Patiala	..	..	10	10	12	16	28	454	9	5	..	5
11	Bhatinda	..	..	8	8	13	6	19	332	11	1	..	1
12	Kapurthala	..	..	4	4	5	4	9	156	6	2	1	3
13	Ambala	..	1	3	4	6	11	17	292	6	2	8	10
14	Sangrur	..	..	7	7	10	4	14	331	9	2	4	6
	Sub-Total	..	5	88	93	153	92	245	6,852	98	33	51	84
			(29.4)	(55.7)	(53.1)	(48.1)	(55.4)	(50.6)	(53.2)	(45.2)	(63.4)	(61.5)	(62.2)
HARYANA REGION													
15	Hissar	..	..	14	14	24	10	34	1,255	17	3	4	7
16	Rohtak	..	1	7	8	18	7	25	649	14	2	6	8
17	Gurgaon	..	..	8	8	16	12	28	661	14	2	2	4
18	Karnal	..	..	5	5	15	11	26	480	16	..	5	5
19	Mahendragarh	..	1	5	6	4	2	6	171	9	3	..	3
20	Ambala	..	..	10	10	18	6	24	608	5	2	3	5
21	Sangrur	..	..	2	2	2	4	6	56	6	..	1	1
	Sub-Total	..	2	51	53	97	52	149	3,880	81	12	21	33
			(11.8)	(32.3)	(30.3)	(30.5)	(31.3)	(30.8)	(30.1)	(37.3)	(23.1)	(25.3)	(24.5)
	Total Punjab	..	17	158	175	318	166	484	12,880	217	52	83	135

Note.—Figures in brackets represent percentages to total Punjab.

Source.—Director, Health Services, Punjab.

*Excluding beds in Government Medical Colleges.

ANNEXURE 44

Statement showing the number of superior and gazetted posts held by persons of Punjabi and Hindi regions in various departments of the Punjab Government

Sr. No.	Names of posts	Total No. of posts	No. held by persons of Punjabi Region	No. held by persons of Hindi Region
1	2	3	4	5
1.	Secretaries, Deputy, Under and Assistant Secretaries to the Government ..	125	116	9
2.	Indian Civil and Administrative Service Officers	114	107	7
3.	Punjab Civil Service (Executive Branch) ..	328	285	43
4.	Judges of the High Court ..	16	14	2
5.	Law Officers of the Government ..	29	25	4
6.	District and Sessions Judges ..	40	36	4
7.	Punjab Civil Service (Judicial Branch) ..	148	121	27
8.	Punjab Agriculture Service, Class I ..	36	33	3
9.	Punjab Agriculture Service, Class II ..	138	127	11
10.	Gazetted posts in the Capital Project ..	83	80	3
11.	Gazetted posts in the Food and Supplies Department ..	44	40	4
12.	Gazetted posts in the Animal Husbandry Department ..	83	75	8
13.	Gazetted posts in the Co-operative Department	62	52	10
14.	Gazetted posts in the Education Department ..	323	305	18
15.	Gazetted posts in the Election Department ..	7	7	...
16.	Gazetted posts in the Excise and Taxation Department	145	137	8
17.	Gazetted posts in the Forest Department ..	47	42	5
18.	Gazetted posts in the Industries Department ..	103	98	5

Sr. No.	Names of posts	Total No. of posts	No. held by persons of Punjabi Region	No. held by persons of indi Region
1	2	3	4	5
19.	Gazetted posts in the Jail Department ..	38	35	3
20.	Gazetted posts in the Labour Department ..	17	15	2
21.	Gazetted posts in the Medical and Health Department	554	542	12
22.	Gazetted posts in the Police Department ..	357	334	23
23.	Gazetted posts in the Public Relations Department	48	46	2
24.	Members and Secretaries of the Punjab Public Service Commission ..	7	5	2
25.	Gazetted posts in the Development and Panchayats Department ..	7	5	2
26.	Punjab Service of Engineers, Class I, P.W.D., B&R Branch ..	50	47	3
27.	Punjab Service of Engineers, Class II, P.W.D., B&R Branch ..	187	173	14
28.	Gazetted posts in the Directorate of Technical Education ..	104	99	5
29.	Punjab Service of Engineers, Class I and II P.W.D., P.H. Department ..	73	66	7
30.	Gazetted posts in the Punjab State Electricity Board ..	382	336	46
31.	Punjab Service of Engineers, Class I, Irrigation Branch ..	113	104	9
32.	Punjab Service of Engineers, Class II, Irrigation Branch	74	68	6
33.	Temporary Engineers, Irrigation Branch ..	382	349	33
34.	Officiating Sub-Divisional Officers, Irrigation ..	288	267	21

Sr. No.	Name of posts	Total No. of posts	No. held by persons of Punjabi Region	No. held by persons of Hindi Region
1	2	3	4	5
35.	Assistant Design Engineers Irrigation and Power Research Institute and other miscellaneous staff..	79	71	8
36.	Deputy Collectors, Irrigation Department ..	36	34	2
37.	Rehabilitation Department ..	33	32	1
38.	Printing and Stationery Department ..	8	8	..
39.	Gazetted posts in the Transport Department ..	27	27	..
40.	Tehsildars in the Land Revenue Department	129	111	18
41.	Superintendents and Private Secretaries in all Departments ..	227	210	17
42.	Consolidation Officers in the Consolidation Department ..	91	81	10
43.	Panjab University, Heads of Sections. ..	13	13	..

Source.—The above figures have been supplied by Dr. Mitter Singh of Rohtak who has sorted these out from the 1961 Punjab Civil List corrected up to 1st January, 1961.

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