CHAPTER - 5
SOCIO-ECONOMIC BENEFIT OF CHAMERA HYDRO ELECTRIC POWER PROJECTS-AN EVALUATION
Till Seventies, the living conditions of the people inhabitation, the remote areas of Chamba district of Himachal Pradesh where National Hydro Electric Power corporation took up the development of hydroelectric power projects namely Baira Siul Project and Chamera Project Stage-I, were pathetic laced with poverty and backwardness. Even the basic amenities such as medical aid, educational facilities, transportation means etc. were as good as non-existent.

The area where Baira Siul Project now exists used to be a fierce and a dense jungle. A few small villages existed in the area with a very small population. There were only two roads namely Tissa to Chamba and Salooni to Banikhet. A very limited transport facility was available in the area for the movement of people and goods. These roads used to remain cut off for most of the time in the area. Even slight rainfall used to cause landslides cutting off the roads for weeks/months together. People were forced to travel on foot even to get medical aid from distantly located (about 35 Kms.) Distt. Hospital, Two small dispensaries with inadequate medical facilities existed at Tissa and Salooni and was quite far off from the inhabited villages. The patients who were unable to walk were taken to these medical centers on Palkis lifted by four persons. Only two buses used to ply in the area out of which one was for Tissa and other for Bbandal when the said two roads were open. The residents of these villages were mostly illiterate as there was no school in the nearby area. There was only one government school at Salooni and one at Tissa. It was very difficult for the children of the local residents of these villages to walk such long distances for education. The villagers used to live in Kothas made of mud without any window or ventilator. They used to sleep in single room in which even their cattle used to be accommodated during bad weather. The living conditions were complete unhygienic and the majority of the population suffered from Tuberculosis. The main occupation of the people
was farming and rearing of livestock. But the agricultural yield was very poor. The milk produced in excess of local consumption used to get wasted, as there was no means to take it to other places due to inadequate transport facilities. Same was the case with other locally produced food items—such as eggs, apples etc. The major cash crop of the area is apples, which used to get rotten due to blockade of roads, due to landslides for weeks/months together, preventing the fruits transportation to main market at Pathankot. There was no electricity in the villages and the villagers used earthen lamps/lanterns. The postal and banking facilities were non-existent. Only two shops, one Teashop and one clothe shop, exist. Similar situation existed at Khairi, Simblue, Baggi and Sherpur where Chamera Project Stage-I has been constructed. All these areas were also inaccessible prior to the construction of the Project. Such was the conditions that for starting the Project, men & material used to be transported by helicopter. Only 5-7 hutments dotted the area with no road and electricity. Though the river Ravi was flowing along with immense wealth, the fate of inhabitants residing at its bank at Khairi and Simblue villages was dismal. The Post Office—a basic communication need, was 16 Kms away at Chuhan village. For medical assistance one had to again go to Chuhan. Only primary school was available in Simblue village. For higher studies, Banikhet was the only destination, which was availed rare’ by students belonging to this far-flung area. Even to procure household provisions, one had to tread mountainous ravine of 20-25 Kms to reach Banikhet. In the initial stages, POL used to be carried on horseback from Banikhet to Khairi. As employment opportunities were non-existent, young people had to go to other places to make both ends meet.

Even the major town and one of the most attractive tourist destinations in Himachal Pradesh namely Dalhousie used to be a sleepy town. Hardly any tourists ventured to this place during winter. Only a few shops used to be open. The Pathankot - Banikhet - Dalhousie road was narrow and ill maintained. It was a tiresome journey from Pathankot to Banikhet/Dalhousie. Even this road, which was main lifeline in the area, used to remain cut off for days/weeks together during rainy season. The Vehicle movement was
allowed from one end being narrow and single lane road thereby causing traffic jam and unending tormenting wait for the travelers.

5.1 SOCIO-ECONOMIC DEVELOPMENT BY NATIONAL HYDRO ELECTRIC POWER CORPORATION- AT A GLANCE

Socio-Economic Development

Before the Chamera Power Station-I came into existence, the places connected with the Power Station such as Dalhousie, Banikhet, Khairi, Chourah, Sherpur, Barangal, Sundla etc. were deprived of modern facilities. Even Dalhousie - a famous tourist resort -used to be a sleepy town. As the Power Station started humming with construction activities, rapid development took place in the area, bringing prosperity and changed quality of life of the local population. The Chamba-Banikhet-Pathankot road used to be a single lane road which used to cause lot of traffic problems. The Power Station widened the road from Banikhet to Katori Bangla through Himachal Pradesh PWD and from Katori Bangla to Dhar through Punjab PWD on deposit work basis. Power Station has also constructed Khairi-Chaurah, Khairi-Bhagdar roads, which are all weather roads. Besides, the Power Station has constructed a vast network of roads within Power Station precincts linking various villages, benefiting the local population immensely.

5.1.1 Expenditure for the Welfare of Public

The Power Station has extended various helps in the shape of donation/building etc. to open State Schools and Colleges. The Power Station is also contributing in lift-water supply scheme for Chakloo village Banikhet has been the main recipient of benefits like employment, market expansion and consequent social development on account of Chamera Project on continued basis. Some of the welfare measures taken in the recent past for the benefits of common, people are in the table 5.1.1 the NHPC management pay its attention towards the social development work. NHPC restore the approach road from Khairi bridge bifurcation to the linkage point of Chamba Pathankot road. By which the people of the adjoining areas benefited a lot. NHPC incurred an expenditure of amounting to Rs. 15.60 Lakh in this road.
Further the NHPC developed site at khairi bridge and constructed two rain shelters for general public. The management incurred an expenditure amounting to Rs. 1.28 lakh. The NHPC took care of the local public about drinking water. Three deep bore hand pump have been installed in the Banikhet area for the public use. As much as Rs.4.50 lakh expenditure have been incurred on these hand pumps. A way has been constructed near Padar market and 1.00 lakh has been spent by the National Hydro Power Corporation.

Street light from Khari Bridge bifurcation point to the linkage point of Chamba Pathankot road has been installed and 0.33 lakh has been spent on these street lights.

Table 5.1.1

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Social Development</th>
<th>Expenditure in Lakh</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Approach road from Khairi bridge bifurcation point to the linkage point of Chamba -Pathankot road</td>
<td>Rs. 15.60 lakh</td>
</tr>
<tr>
<td>2</td>
<td>Construction of 2 Nos rain shelters.</td>
<td>Rs 1.28 lakh</td>
</tr>
<tr>
<td>3</td>
<td>Deep bore hand pumps public use</td>
<td>Rs. 4.50 lakh</td>
</tr>
<tr>
<td>4</td>
<td>Construction of cause way Padar market</td>
<td>Rs 1.00 lakh</td>
</tr>
<tr>
<td>5</td>
<td>Street light from Khairi Bridge Bifurcation point to the linkage point of Chamba Pathankot road</td>
<td>Rs. 0.33 lakh</td>
</tr>
</tbody>
</table>

Source: Different Reports of NHPC Chamera-I and II
5.2 ECONOMIC DEVELOPMENT

The Project has generated employment/earning opportunities for the local people. For example, local people take contracts/petty contracts. There are more than 20 contractors from the local area who by doing the Project work, have now grown into major contractors. The infrastructure for the market has also been provided by the Project, facilitating establishment of shops. Besides this, 700 people were provided employment in the Project. Numbers of contractors have now become major contractors.

5.1.2 Contracts given to Local Contractors: An Overview

The table 5.1.2 shows that the Baira Siul hydro power project has been constructed during (1972 to 1984). It has been commissioned during 1984. The Baira Siul hydro power project provides a lot of benefits to the local people. In this project different nature of work has been done. Various construction activities like as construction of roads, walls residential buildings and non-residential buildings, R&M of office, schools, and numbers of others buildings have been done. The NHPC under Baira Siul hydro power project award Rs. 2500 lacs amount work and 200 numbers of contracts have been awarded to the local contractors due to these construction activities. The local people benefited with the employment opportunities.

It further shows that Chamera-1 hydro power project has been constructed between 1987-1994 and commissioned during 1994. The Chamera HE Project stage-I provided a lot of benefits to the local people. In this project different nature of work has been done, various construction activities like construction of roads, walls residential buildings and non-residential buildings, R&M of office, schools, and other construction activities like hospitals etc. have been carried out. The NHPC, under Chamera-1 hydro power project awarded work of worth Rs. 7500 lacs and 110 numbers of contracts have been given to the local contractors due to these construction activities. The local people are benefited with the employment opportunities. It further shows that Chamera-II hydro power project has been constructed during (1998-2003). It has been commissioned during 2004. Chamera-II hydro
power project has also provided a lot of benefits to the local people. The NHPC under Chamera-II hydro power project awarded different works amounting to Rs. 2500 lacs and 113 numbers of contracts to the local contractors to carry out all these construction activities. The local people have been benefited with the employment opportunities.

Table 5.1.2

Contracts given to Local Contractors: An Overview

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the Project</th>
<th>No. of Contracts</th>
<th>Value of Contracts (Rs. In lacs)</th>
<th>Nature of work</th>
</tr>
</thead>
</table>
| 1       | Baira Siul HE Project (1972-1984) | 200              | 2500.00                        | i. Construction of residential/non-residential buildings.  
|         |                     |                  |                                | ii. Construction of roads.                          |
|         |                     |                  |                                | vi. R&M of water supply.                              |

Source: Different Reports of NHPC Chamera I and II.

5.1.3 Road Network Developed by National Hydro Electric Power Corporation

Road plays a very important role in the development of any country or region. With the facility of roads, the life of the people become easy and comfortable. People can transmit their material in a cheaper and economic way. With the road facilities the hydro power projects helped the entire region. As shown by the exhibit, the NHPC built a wide network of roads in the region. Due to Baira Siul Hydro Electric power Project, 41 kilometers road has been
constructed, by which a number of villages benefited. In addition Chamera Hydro Electric Project -1 added 136 Kilometers. Roads in the region and moreover Chamera Hydro Electric Project -II added 55 kms. in the region. Moreover with these roads more than sixty five villages have been connected. These roads became the lifeline of the region. Tourism has been developed due to these roads. These roads played a very significant role in the development of the Chamba region.

Table 5.1.3

Road Network Developed by National Hydro Electric Power Corporation

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Developed By</th>
<th>Total length</th>
<th>Cost (Rs. in Crores)</th>
<th>Beneficiary Towns/ Villages of H.P.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Chamera HE Project Stage-I (1987-1994)</td>
<td>136 Kms</td>
<td>35.82</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Chamera HE Project Stage-II (1998-2004)</td>
<td>55 Kms</td>
<td>5.40</td>
<td></td>
</tr>
</tbody>
</table>

Source: Different Reports of NHPC Chamera1 and 2nd Hydro Power Projects.
5.1.4 Infrastructure Developed by National Hydro Electric Power Corporation: An Overview

The Chamera 1st stage hydro power project headquarter at Khairi and the adjoining areas including the hub-centre of the Project activities- Banikhet- were desolate places, bereft of even all basic facilities. As soon as the Project got underway in 1984, the socioeconomic scenario of the area began to change for the better. The table 5.1.3, shows about the market position in and around of various projects in the region. This table also shows that numbers of shops before projects and numbers of shops now in the surroundings of the project sites. There were only two shops before project of Baira Siul and now more than 110 shops have opened in and around of this particular project. Their trades related with general merchandise, cloths, vegetables, fruits, stationary, electrical items etc. more than 20 lacs business volume have been incurred through these shops. It means that economy of the region has been improved due to the project.

This table also shows that numbers of shops before projects and total numbers of shops now in the surrounding of the project sites have been increased. There were only eleven shops before project of Chamera Project Stage-I, Khairi. It is evident that more than 100 shops in and around of this particular project have been opened. As far as trades related with general merchandise, cloths, vegetables, fruits, stationary, electrical items etc. is concerned, it is evident that more than 35 lakh volume in the terms of business has been incurred through these shops. This shows that economy of the region has been improved due to the hydro power project. The economic condition of the people has also been improved due to these power projects.

The table further shows a comparative analysis of shops before the inception of projects and numbers of shops now in the surrounding area of the project sites. There were only 70 shops before the implementation of Chamera Project Stage-II, Khairi whereas it has increased now more than 200 shops in and around of this particular project. Their trades related with general merchandise, cloths, vegetables, fruits, stationary, electrical items etc. It is evident that more than 60 lacs business volume has been incurred through
these shops. This shows that economy of the region has been improved due to these power projects. Whereas economic condition of the people of adjoining areas has been improved due to these power projects.

Finally, it can be concluded that that two towns have been developed in the region, namely Banikhet and Dalhousie. Furthermore more than one crore rupees turnover has incurred from the business in these towns. The shopping complexes in the region have also been increased.

Table 5.1.4

Infrastructure Developed by National Hydro Electric Power Corporation: An Overview

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Location</th>
<th>No. of Shops Before Project</th>
<th>No. of shops Now</th>
<th>Business Volume (Approx.) (Rs. in Lacs p.m.)</th>
<th>Facilities Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In and around Baira Siul Project, Surangani.</td>
<td>2</td>
<td>110</td>
<td>22.00</td>
<td>General merchandise, Cloths, Fruits &amp; Veg., Dairy products, Meat products, Hair Cutting saloon, Domestic Appliances, Utensils and Crockery, Books &amp; Stationery, Electrical/ Electronic repairs, Auto repairs.</td>
</tr>
<tr>
<td>2</td>
<td>In and around Chamera Project Stage-I, Khairi</td>
<td>11</td>
<td>102</td>
<td>35.00</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>In and around Chamera Project Stage-I, Karian</td>
<td>70</td>
<td>200</td>
<td>60.00</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Banikhet</td>
<td>03</td>
<td>100</td>
<td>50.00</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Dalhousie</td>
<td>25</td>
<td>250</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>

Source: Different Reports of NHPC Chamera I and II.
5.1.5 Construction of Roads by National Hydro Electric Power Corporation

As the Project began humming with construction activities, the Chamba- Banikhet -Pathankot road which has been used to be single lane road causing frequent traffic jams was got widened and converted into two lanes from Banikhet to Katori Bangla through HP PWD and from Katori Bangla to Dhar through Punjab PWD on deposit work basis. The 80 km long road has now become lifeline for accelerated tourist inflow to Dalhousie. The construction of 20 km long Bagdhar to Khairi road which traverses through 16 adjoining villages and 10 km long road from Goli to dam site (Chaurah) and another 15km long road from dam site to Khairi, linking various other villages together in the periphery of the Project made the lives of the inhabitants much easier. Besides, some bridges were also constructed and renovated by National Hydro Electric Power Corporation.

Following expenses in the exhibit have been incurred by the National Hydro Electric Power Corporation for the developmental activities. On the Bagdhar khari road the National Hydro Electric Power Corporation incurred an expenditure of Rs.12,17,73,144. The NHPC management spent amounting to Rs. 3,59,64,888 on Khairi Khajura Road in the region. These roads have become the life line of the region. The management incurred an expense of Rs. 3,55,11,211 on Surge Shaft road. Further, the NHPC spent a significant amount to Rs. 8,85,94,350 on TPH road.

It is evident that on oru Sherpur road, an expenses amounting to Rs 2,98,43,941 has been incurred and road from permanent bridge to Simbule Rs 1,14,81,017 has been incurred. Beside this, the expenditure amounting to Rs. 41,58,086 has been spent on temporary roads. Finally it can be concluded that Rs. 32,73,26,637 has been spent on all of the roads discussed above. With these roads, connectivity became possible to different villages.
Table 5.1.5

Construction of Roads by National Hydro Electric Power Corporation

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Road</th>
<th>Capital Cost (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bagdhar Khairi Road</td>
<td>12,17,73,144</td>
</tr>
<tr>
<td>2</td>
<td>Khairi Khajura Road</td>
<td>3,59,64,888</td>
</tr>
<tr>
<td>3</td>
<td>Surge Shaft road</td>
<td>3,55,11,211</td>
</tr>
<tr>
<td>4</td>
<td>TPH Road</td>
<td>8,85,94,350</td>
</tr>
<tr>
<td>5</td>
<td>Oru-Sherpur Road</td>
<td>2,98,43,941</td>
</tr>
<tr>
<td>6</td>
<td>Road from Permanent bridge to Simblue</td>
<td>1,14,81,017</td>
</tr>
<tr>
<td>7</td>
<td>Temporary Roads</td>
<td>41,58,086</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>32,73,26,637</strong></td>
</tr>
</tbody>
</table>

Source: Different Reports of NHPC Chamera I and II.

5.1.6 Construction of Bridges by National Hydro Electric Power Corporation

It is evident that bridges play a very important role to reduce the gap between two places. The NHPC pay its attention towards the construction of new bridges in the area. They made a network of bridges in the area. With these bridges the general public of the region is benefited a lot. The NHPC management incurred an expenses of amounting to Rs 16,29,432 on Bailey bridge at Kakiyana Nalah. Steel Truss Bridge over river Ravi at Chaurah has been built and Rs.1,43,67,306 have been spent on its construction. Further the NHPC management has constructed Permanent bridge at Khairi 120
meters span over Ravi river. A huge expenditure has been incurred on its construction. It is amounting to Rs. 1,24,68,729. Finally, NHPC built the two another bridges in the region i.e Bridge over Bathri Nalaha, Foot bridge at Sherpur and spent an expenditure of amounting to Rs. 3,31,121/- and Rs. 3,263,210/-.

Table 5.1.6

Construction of Bridges by National Hydro Electric Power Corporation

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Bridge</th>
<th>Capital Cost (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bailey bridge at Kakiyana Nalah</td>
<td>16,29,432</td>
</tr>
<tr>
<td>2</td>
<td>Steel truss -bridge over river Ravi at Chaurah</td>
<td>1,43,67,306</td>
</tr>
<tr>
<td>3</td>
<td>Pmt Bridge 120 M span over river Ravi at Khairi</td>
<td>1,24,68,729</td>
</tr>
<tr>
<td>4</td>
<td>Bridge over Bathri Nalaha</td>
<td>38,56,622</td>
</tr>
<tr>
<td>5</td>
<td>Foot bridge at Sherpur</td>
<td>3,31,121</td>
</tr>
<tr>
<td></td>
<td>Total:</td>
<td>3,263,210</td>
</tr>
</tbody>
</table>

Source: Different Reports of NHPC Chamera I and II.

5.1.7 Banking Facilities Developed by National Hydro Electric Power Corporation

The following table shows an analysis of various banking and postal services in the region. It is evident that prior to start of the Project, the nearest post office available for Khairi residents was 16 kms away, at Chuhan village. Bank and controlled rate shops were 30 km away from the village. These facts signify the hardship to the inhabitants of this area. Way back in 1987, a
branch of State Bank of India was opened in Khairi by National Hydro Electric Power Corporation. Post office was also got established. The SBI branch at Khairi now do transaction in crores per month and provides services to as many as villages scattered around the vicinity of the project.

It is also evident that before the inception of projects, there was no branch of any bank in the particular region. The table 5.1.6 shows that various branches have been opened in the region now. There are thousand of accounts holders in these banks and people also take benefit of the loan facilitates through these banks.

Table 5.1.7
Banking Facilities Developed by National Hydro Electric Power Corporation

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Location</th>
<th>No. of Banks</th>
<th>No. of Account Holders</th>
<th>Business per Annum (Rs. In Crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Surangani (BSP)</td>
<td>2</td>
<td>6600</td>
<td>15.00</td>
</tr>
<tr>
<td>2</td>
<td>Khairi (CHEP-I)</td>
<td>1</td>
<td>5000</td>
<td>11.00</td>
</tr>
<tr>
<td>3</td>
<td>Karian (CHEP-II) (Extn. Counter)</td>
<td>1</td>
<td>700</td>
<td>1.0 in addition, Rs.96 crores p.a. is Through SBI, Chamba, Main Branch.</td>
</tr>
</tbody>
</table>

Source: Reports of Banks.
5.1.8 Educational Facilities: An Overview

The table shows that there was one State-run primary school at Khairi (Simbleu) before the inception of Chamera Project came up. Whereas now 2 Kendriya Vidyalayas, one at Banikhet and one at Khairi (up to 10+2 standard) along with one Nursery K.G School have been opened by the Chamera Project with an aim to provide better education facilities. The wards of local inhabitants are also availing educational facilities in these schools. The annual budget for K. V. Khairi is in crores. The Kendriya vidyalaya at Banikhet has been provided with infrastructural facilities such as building, electricity, water supply, furniture, computers, internet etc. by National Hydro Electric Power Corporation.

Apart from above, National Hydro Electric Power Corporation also acknowledges the role of other schools or educational institution operating around the periphery of Chamera Project. NATIONAL HYDRO ELECTRIC POWER CORPORATION has been providing grant-in-aid to such institutions for their better maintenance and operation as detailed below:

- Grant paid to open DAV College at Banikhet.
- Grant paid to Middle School Bagdhar.
- A grant paid for the construction of Building for Primary School at Sundla.
- Construction of a building for 10 + 2 standard school at Sundla.

Education play a very important role in the development of any area. Table 5.1.7 shows that new four schools have been opened in the region. People of the area benefited from these schools.
Table 5.1.8

Educational Facilities: An Overview

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Locations</th>
<th>No. of Schools</th>
<th>Level of Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project School, Surangani (BSP)</td>
<td>1</td>
<td>10+2</td>
</tr>
<tr>
<td>2</td>
<td>KENDRIYA VIDYALAYA, Khairi (CHEP-I)</td>
<td>1</td>
<td>10+2</td>
</tr>
<tr>
<td>3</td>
<td>KENDRIYA VIDYALAYA, Karian (CHEP-1)</td>
<td>1</td>
<td>10+2</td>
</tr>
<tr>
<td>4</td>
<td>KENDRIYA VIDYALAYA, Banikhet</td>
<td>1</td>
<td>10th</td>
</tr>
</tbody>
</table>

Source: Different Reports of NHPC Chamera I and II Hydro Power Project.

5.1.9 Medical Facilities Developed by National Hydro Electric Power Corporation

An analysis has been carried out to evaluate the health services in the region. It is evident that two hospitals, one at Banikhet and one at Khairi along with project dispensary at Sundia and first aid post at dam site has been established by the NHPC for providing medical services to National Hydro Electric Power Corporation employees and local inhabitants. The budget for medical services and hospital maintenance charges so far been provided by the Project. It has also arranged budget towards organizing various medical check-up camps.

Finally, it can be concluded that total number of six hospitals have been established by the NHPC and number of patients have been benefited by these hospitals. Various facilities have been provided to the general public. The various facilities such as 24 hours emergency services, general check up,
pathological lab, ECG/X-Ray, dental care, minor surgeries, delivery /MTP and contraception have been provided through these hospitals

Table 5.1.9
Medical Facilities Developed by National Hydro Electric Power Corporation

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Locations</th>
<th>No. of Hospitals</th>
<th>No. of local Patients Attended Per Day</th>
<th>Facilities Available in the Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Surangani (BSP)</td>
<td>3</td>
<td>60</td>
<td>i. 24 hours emergency services.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ii. General check up.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>iii. Pathological Lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>iv. ECG/X-Ray</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>v. Dental care</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>vi. Minor surgeries</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>vii. Delivery/ MTP</td>
</tr>
<tr>
<td>2</td>
<td>Khairi(CHEP-I)</td>
<td>1</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Karian(CHEP-II)</td>
<td>1</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Banikhet (CHEP-I)</td>
<td>1</td>
<td>35</td>
<td></td>
</tr>
</tbody>
</table>

Source: Different Reports of NHPC Chamera I and II.

5.1.10 Medical Camps Organized by National Hydro Electric Power Corporation: An Overview

It is evident that various medical camps are being organized in different surrounding areas of the Project for the purpose of providing medical services to the local inhabitants at their door-steps without any cost. Medicines are also provided to the people free of cost. Since 1994 onwards, Power Station has been organizing average 05 sterilization camps with the help of State Govt. in which local people of the surrounding villages as well as employees of the power station takes treatment. Power Station has been conducting periodical medical camps at different villages of the nearby areas in association with project hospital as well as courtesy of various renowned
hospitals viz. CMC- Ludhiana, Saigal Hospital-Pathankot etc. Project Hospitals with 10 bed facility each at Banikhet and Khairi are established and have been providing free medical services and medicines to the people residing in the vicinity of the power station, including local villagers. Apart from this, one dispensary is being operated at Dam site.

- Regular medical camps, Eye camp, Heart Camp etc. are conducted at Khairi Hospital and nearby villages for the employees as well as local people residing around the power station.
- Medical consultation is given free of cost to the local people in this remote locality of Chamba, Distt. of H.P.
- In association with Ladies Welfare Association and Project Hospital medical camps are conducted at nearby villages frequently.
- RCH Camp and Family Planning Camp are organized every month at project hospital in association with State Health Services, in which Vasectomy and Tubectomy operations are done in the hospital.
- Multi specialty medical camps in association with reputed hospitals like CMC, Ludhaina, Ajay Heart Care, Pathankot, Saigal Hospital, Pathankot etc.
- Training programmes are conducted by the experts/specialist doctors for increasing awareness on health and hygiene amongst the employees.
- Multi specialty camp and common Gynecological disease camps are being conducted on regular interval by the specialists.
- A team of Doctors and paramedical staff along with medicines was sent to Earthquake Relief work at Uri. During October, 2005.
- Wives of employees are imparted training on health awareness, cleanliness and various diseases periodically.

Various medical camps have been organized in surrounding areas of the Power Station for the purpose of providing medical services to the local inhabitants at their door-step without any cost. Medicines are also provided to the people at free of cost. It is evident that more than 80,000 local population
has been benefited from these camps and free medicine have been distributed in these camps.

Table 5.1.10
Medical Camps Organized by National Hydro Electric Power Corporation: An overview

<table>
<thead>
<tr>
<th>(i)</th>
<th>Reproduction children health camps</th>
<th>500 Nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ii)</td>
<td>Eye camps</td>
<td>50 Nos.</td>
</tr>
<tr>
<td>(iii)</td>
<td>Free health check up camps</td>
<td>40 Nos.</td>
</tr>
<tr>
<td>(iv)</td>
<td>Blood donation camps</td>
<td>12 Nos.</td>
</tr>
<tr>
<td>(v)</td>
<td>Disability camps</td>
<td>3 Nos.</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td></td>
<td><strong>605 Nos.</strong></td>
</tr>
</tbody>
</table>

(A) Total local population benefited from these camps 80,000
(B) Value of medicines distributed free of cost 45.00 lacs.

Source: Various Reports of NHPC.

5.3 GROWTH OF TRADE AND COMMERCE

Before NATIONAL HYDRO ELECTRIC POWER CORPORATION took up development of hydropower in Chamba region, the main occupation of the people was farming and rearing of livestock, selling of general merchandise in very small market and limited tourism. There were only 3–4 small contractors registered with PWD of Govt. of HP. Apple was the only major cash crop which was also not giving 100 percent financial yield to the growers due to lack of infrastructure and transportation means. With the development of hydropower by National Hydro Electric Power Corporation in the Chamba region, the economic conditions started changing gradually and steadily.
As of now, hundred of contractors from Chamba region are registered with National Hydro Electric Power Corporation Projects. These contractors have handled works of varied nature as summarized below:

(i) Construction of roads.
(ii) Construction of residential / non-residential buildings.
(iii) Small to medium size technical works of hydroelectric projects.
(iv) Providing of skilled/un-skilled labour.
(v) Transport services.
(vi) Electrical maintenance of LT lines/domestic supply,
(vii) Electrification of residential / non-residential building,
(viii) Fabrication works.
(ix) Water supply works.

5.4 HOTEL INDUSTRIES

Dalhousie, the main tourist resort in Chamba region, was having only 12-15 private Hotels and a few Guest Houses of State Govt. Departments. A limited number of tourists used to visit Dalhousie during April to June only due to poor transportation mode and bad condition of Pathankot-Dalhousie road.

It has now become a world known tourist destination and boasts around 270-320 Hotels of all standards ranging from economy to luxury class. Tourist’s inflow is continuous round the year. Thousands of taxis ply between Dalhousie-Pathankot. All this has happened possible due to the development of communication infrastructure mainly on account of construction of three big hydroelectric projects in this region, which rejuvenated the Chamba-Dalhousie-Pathankot road, lifeline of this region.

5.5 FARMING AND DAIRY BUSINESS

It is also revealed that the cash crop of apples is now yielding very high cash return to the apple farmers. Besides, the vegetables are also now being grown in this region and substantial quantity is marketed through Pathankot main market giving very high cash return to the farmers. Even dairy produce
has increased manifold. The same is now being transported outside Chamba region and people in this business are reaping rich dividend.

5.6 AQUA CULTURE

The Chamera reservoir has extended facilities to Fisheries Department of Govt. of HP for development of aqua culture, which shall generate additional employment and revenue. Besides, Chamera Project has paid Rs. 30 lacs towards rehabilitation of "Lift Irrigation Scheme" at Raj Nagar and Kiani and Rs. 5 lacs towards rehabilitation of water supply at Chakloo. This amount has been given to Govt. of Himachal Pradesh for serving the basic interests of local population. Good progress has been made in this direction. In order to facilitate the upstream and downstream migration of fishes, fish ladders are constructed at the dam wherever required fish farm at Sultanpur, Chamba.

5.7 MARKETING OF MERCHANDISE

While the villagers in and around Baira Suil hydro power project, Chamera-I and Chamera-II did not have even basic market facilities, the major town i.e. Banikhet and Dalhousie also had very limited number of shops (25-30 approx.). Substantial marketing facilities have come up even in the villages in and around the aforesaid projects. Banikhet and Dalhousie have become major markets where all kinds of merchandise is not only readily available but even offer wide variety to the inhabitants as well visitors. Business volume has grown manifold bringing ever-increasing economic prosperity to the people of this region.

Chamera Power Station-I with an installed capacity of 540MW (3X180MW) is located on river Ravi in the Chamba District of Himachal Pradesh. The project headquarter at Khairi is 101 kms from Pathankot which is the nearest broad gauge railhead. It is a major project for accelerating development of hydropower in H.P. Actual construction work commenced in 1985 and the project was commissioned in March 1994. The completion cost of the Project is Rs 2114.02 crores. The project comprises high concrete dam, a 9.5 M dia and 6.41kms long Head Race Tunnel, a 25 M dia and 84M high
surge shaft, a 8.5M dia and 157M high pressure shaft and an underground
Power House housing 3 Nos Francis Turbines and generating units of 180
MW each, a 9.5M dia and 2447M long tailrace tunnel. The power is evacuated
from the power station through lines of 400 KV: Chamera I- Jalandhar (I&II)
and Chamera I– Chamera II to MogaPunjab 400 KV double circuit line.

5.8 SECURITY SERVICES

i) Police station: As. headquarter of Project a police station is situated at
Khairi village, the necessity of a Police Station was felt to maintain law
& order. A View of Chamera Project Colony, Khairi accordingly, a
Police Station has been got established and cost of the same is being
borne by the National Hydro Electric Power Corporation.

ii) CISF: CISF having a total manpower of 160 headed by Dy.
Commandant is engaged in fulfilling different security requirements
within project premises. It is well equipped with modern security
equipments. CISF personnel are provided accommodation by the
project along with other recreational and essential services.

5.9 INDEPENDENT GRAM PANCHAYAT

With the construction of the project, the infrastructural facilities
increased and so did the population. Consequently, Simbleu has been
converted into an independent Gram Panchayat.

5.10 TOURISM DEVELOPMENT

Chamera dam reservoir has potential for water sports activities. It
would provide added charm to tourists visiting Dalhousie. With the persuasion
of National Hydro Electric Power Corporation, Tourism Department, Govt. of
HP is taking up establishment of tourist facilities including boating
arrangements. This will boost the income from tourism to the state
government.
5.11 ENVIRONMENTAL PROTECTION

5.11.1 Environmental Management System

Chamera Power Station-I is fully aware of the need and is conscious of its responsibility to remote area development along with hydropower development and people's upliftment, economically and socially by all round enrichment and improvement. Chamera Power Station-I is offering a unique solution to provide electricity from a reliable, renewable and sustainable resource with non-polluting results. Dam of the power station contributes significantly in supporting demands for water supply, controlling floods and at the same time, a source of clean and cheap electric energy. The efforts of Chamera Power Station-I continue to balance growth and prosperity with conservation and enhancement of the environment. Power Station has adopted the Environmental Management System and is committed for implementation of the same. Power Station is utilizing a natural resource which is renewable, are environment friendly and do not cause any pollution during generation of power.

5.11.2 Environmental Operational Procedure to Control of Noise

- In order to minimizing the effect of the noise at different locations and its least impact on employees, a system has been established in, the Power Station.
- This system is being applicable to hydro generators, Vacuum Pumps, DG Set, Compressors (HP & LP) Pump Houses available in the Power Station.
- Ear plugs have been provided to concerned employees working at these locations.
- Awareness board on usage of ear plugs at work locations that are noise prone zones, have been displayed.
- Operators are instructed to check the condition of doors of all the enclosures, gaskets, sealing’s under normal conditions.
Chamera Power Station-I complies with legal environmental requirements and tries to prevent pollution from its activities. Approval of hydropower projects is preceded by a detailed Environment Impact Assessment and Environmental Management Plans which address various environment concerns and only those projects are approved which are found to be environmentally manageable. Chamera Power Station-I gives due importance to conservation of forests and biodiversity for ecological balance and environmental security. The biodiversity of the area is conserved as a part of the project through compensatory, voluntary afforestation, catchment area treatment, landscaping and restoration of dumping areas/quarry sites, resettlement and rehabilitation and conservation of flora and fauna.

5.11.3 Afforestation

Chamera Power Station-I has undertaken massive afforestation on non-forest land equivalent to the area of forestland diverted and where plantation is done in degraded forestland, afforestation is undertaken over twice the forestland diverted. Afforestation is an effective tool for arresting soil erosion and enrichment of environment. For soil conservation, fast growing species with soil binding capacity are preferred. Massive compensatory forestation was taken-up and 45.74 lacs saplings have been planted in 2000 hectares of land at a cost of Rs 3.30 crores by Chamera Project Stage-I.

5.11.4 Compensatory Afforestation at Chamera-I

The Power Station has done lot of works for environmental safeguard as per the approved afforestation plan. 1710 Ha. of land outside the project area and 290 Ha within project area was brought under the compensatory afforestation. Compensatory afforestation work outside the project area was carried by the HP forest deptt. as tabulated below:

<table>
<thead>
<tr>
<th>Area in Ha</th>
<th>Target of plants</th>
<th>Achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1710 Ha</td>
<td>38,00,000</td>
<td>32,00,000</td>
</tr>
</tbody>
</table>
For 1710 Ha land HP Forest Deptt. have also executed soil conservation works outside the project area. National Hydro Electric Power Corporation has released Rs. 2,20,00,000/- for this purpose. The power station has, also done the plantation work within project area as details below:

<table>
<thead>
<tr>
<th>Area in Ha</th>
<th>Target of Plants</th>
<th>Achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td>290 Ha</td>
<td>8,00,000</td>
<td>7,98,000</td>
</tr>
</tbody>
</table>

Source: Different Reports of NHPC

5.11.5 Compensatory Afforestation Chamera I

Construction of Chamera Power Station-I involved 982.70 hectare of forest land with about 40,000 trees. As a measure of environment protection, a massive compensatory afforestation scheme to raise 45.74 lacs plants over an area of 2000 hectares has been implemented at a cost of Rs. 3.81 crores. The scheme also includes soil conservation measures. Compensatory afforestation of the area outside the Projects was carried out by the Himachal Pradesh Forest Department, against funds released by the Power Station.

5.11.6 Greenbelt Plan

Under the green belt plan saplings are planted at the Project along the reservoir periphery, at the muck disposal sites, dam site, powerhouse site, along the water conductor system, for the upgrading of ecological conditions. The green belt development stabilized the vulnerable zones around construction areas and also helped in avoiding land erosion and improved landscaping of the area. This plan has also improved the ecological balance of the area. Mixed plantations are done in the areas marked for greenbelt development.
5.11.7 Plantation around Chamera I

The environmental monitoring is done by the Himachal Pradesh State Environment Protection and Pollution Control Board analyst every six months. The ambient air quality along with the water samples and noise levels are tested at different locations from the project components. The quality of air, water and noise comes within the prescribed limits.

5.12 RESETTLEMENT & REHABILITATION

Rehabilitation of land oustees was done through District Administration and cost of the same was borne by National Hydro Electric Power Corporation. Apart from compensating full for their land, houses, trees & other immovable properties, the ousters have also been paid compensation @ Rs. 45000 per homeless family and Rs. 20000 per landless family.

There are two categories of people affected by hydropower projects, First, the category of people who are displaced from their original habitat and other category is of people who are not displaced. A detailed socio-economic survey is conducted before formulation of Resettlement & Rehabilitation plan for the project affected people, which comprises of:

- Compensation for land, houses, shops and other properties etc.
- Homestead land
- Transportation charges for household items, cattle etc.
- Construction of house
- Solarium charges
- Financial assistance for construction of cattle shed or poultry farm
- Agriculture land depending on availability or land less grant
- Subsidy for seeds/fertilizers/land management
- Development of public health center, school, community center etc.
- Basic amenities like road, drinking water, electricity, medical etc.
- Vocational training
- Preference in allotment of shops in National Hydro Electric Power Corporation's shopping complex
• Special measure for tribals
• Renovation/relocation of religious structures

5.13 WELFARE ACTIVITIES

The welfare activities like medical camps, adult education programmes, family planning camps, training course for women & poor people for their economic upliftment are being organized regularly. The project has paid Rs 1.00 lakh to Government of H.P. for renovation of Khajjiyar Park.

5.13.1 Spiritual Center

A Spiritual Center has been established to provide much needed moral/ spiritual/ethical upliftment opportunities to the members. Presently 67 members are deriving benefit from the spiritual center.

5.13.2 Gym/Yoga & Health Center

A Gym/Health Center has been established and Yoga classes are also held for physical fitness. An amount of Rs. 60,000/- approx. has been spent for the establishment of Gym.

5.13.3 ECO Club

An ECO-Club has been formed for creating awareness amongst employees about, plantation, ecology, mental development of school going children, development of herbal parks, health awareness & hygiene etc. Display Boards indicating "benefit and loss of tree" have been placed at various sites of the power station by the Nature Club. For the development of ecology and environment two Herbal Parks have been developed and being maintained. Besides this, may parks have been created in different colony areas for amusement of children. Various entertainment items have been kept in parks to which children use to enjoy.

5.1.11 Over All Impacts of Chamera Hydro Project Phase at a Glance

It is evident from table that medical facilities were not available prior to Chamera I hydro electric project. The medical services were available at least
60 KM away from the existing site. It has been taken on the top priority by the project management and two hospitals and one first aid post has been established after the inception of Chamera-1 Hydro electric project at Khairi in district Chamba. As far as, the educational facilities are concerned, there was only one primary school in the region which was under the control of the state government. It is significant to mention, that - the project management has opened two Kendriya Vidyalayas, one at Banikhet and one at Khairi at dam site. Besides this, the management has opened nursery and KG level schools. This shows that the project management made sincere efforts for educational development of the region. Further the security services were almost not available before the establishment, of Chamera-1 Hydro electric project. While comparing it with after project position, there is one police station the region and a Battalion of C I S F with having 120 persons and one private security system having 63 persons employed in it. This shows that the project management has not only enhanced and strengthened security system but also simultaneously have given opportunities to various people of the locality and of the outside areas. Furthermore, there were only few employment opportunities in the region prior to the establishment of Chamera-1 Hydro electric project at Khairi. While comparing the prior data of employment status with the present status, it has significantly increased the employment opportunities directly or indirectly in the region. The project management has provided direct employment to the 700 people in the project and approximately the same number of indirect employments to the local youths. Unemployment is a biggest problem not only with the state government but also at central level. If we consider the given number of employment (direct and indirect) given by Chamera-1 hydro electric project at Chamba District of Himachal Pradesh, it is definitely a very big contribution of the project to the state, 1 not only in terms of providing economic benefits but also in social terms by providing job opportunities to the local people and uplifting their standard of living. As far as road network is concerned there was no road network in the region prior to the establishment of the project at Khairi. Now it has a very longer and wider road network. It has connected 100 villages with having 132 KM link road network. But this way the project has benefited one lakh 50 thousand people in the region, which is definitely a
great contribution of the project in the overall development of the region. While the people of the concern locality were asked about such developments, they viewed that the road network not only contributed in the economic and social terms but it has made their life easier in comparison to the prior scenario. The various costs-have been declined and it made other places of their interest approachable easily. The most significant part of their developmental aspects is the enhancement of the electrification in the region. There was no electricity in the region prior to the inception of Chamera-1 hydro electric project. But the scenario got changed immediately after the project; it is very significant to mention here that the local residents are enjoying 100 percent electricity facilities in the region. There is electricity in the every house of the region, which is a great contribution and achievement too. This is not only helping the poor people in the social aspects by way of various facilities but also helpful for the local youths to start their own venture, as electricity is the main component to start any economic activity related to the small scale and cottage industries. While evaluation the postal and banking facilities in the region, it is revealed that these basic facilities were not available in the region prior to the inception of project. It is further noted that these services are significantly available now in the region. This happened only because of establishment of Chamera-1 hydro electric project at Khairi in the Chamba region. Finally, the development of Hotel industries has been examined on the basis of data provided by the project management. It is revealed that only 12-15 hotels were available prior to the establishment of Chamera hydro electric project at Khari in Chamba District of Himachal Pradesh. This number of hotels has been increased significantly from 12 to 15 hotels to 250 to 300 hotels. These hotels are not only contributing in terms of revenues generation to the state economy but also providing employment to the local people.
Table 5.1.11
Over All Impacts of Chamera Hydro Project Phase at a Glance

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Amenities /Services</th>
<th>Before Project</th>
<th>After the Implementation of Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Medical Facilities (Hospital etc.)</td>
<td>60 Km away from the project.</td>
<td>2 Hospital and 1 First Aid post at Dam site.</td>
</tr>
<tr>
<td>b</td>
<td>Educational Facilities</td>
<td>One state-run Primary School</td>
<td>2 Kendriya Vidalayas (one at Banikhet, one at Khairi along with Nursery and KG Schools)</td>
</tr>
<tr>
<td>c</td>
<td>Security Services</td>
<td>Not Available</td>
<td>One Police Station CJSF (120 persons), Private Security (63 persons)</td>
</tr>
<tr>
<td>d</td>
<td>Employment</td>
<td>Very Few</td>
<td>Direct:-700 persons in Project, Indirect:-Approximately same numbers.</td>
</tr>
<tr>
<td>e</td>
<td>Roads</td>
<td>No Road</td>
<td>132 Km Road (Connected 100 villages and benefited 1.50 lacs people)</td>
</tr>
<tr>
<td>f</td>
<td>Electricity</td>
<td>Not Available</td>
<td>100 percent</td>
</tr>
<tr>
<td>g</td>
<td>Postal and Banking Facilities</td>
<td>Not Available</td>
<td>Significantly made available</td>
</tr>
<tr>
<td>h</td>
<td>Hotel Industries</td>
<td>12-15</td>
<td>250-300 Hotels.</td>
</tr>
</tbody>
</table>

Source: Different Reports of NHPC Chamera I and II.
5.14 CONCLUSION

This shows that the project has not only provided direct employment to the local people of the region but by this way the exact number of indirect employment provided by Chamera project is much higher than the figure depicted in the table. Thus it can be summarized on the basis of discussion made as above that Chamera-hydro project phase-1 has contributed significantly in terms of socio-economic development of the region. The Chamera hydro electric project has increased health services by increasing number of hospitals in the region and by opening up first aid post at dam site.

The educational facilities have been increased to manifold as compared to one primary school prior to the inception of project. It has now increased the educational facilities by opening up 2 Kendriya Vidalayas along with Nursery and KG schools. This has certainly increased the educational standard of the general and local public. The security services were almost nil in the region. These have been increased significantly in the region.

The employment opportunities were very limited before the Chamera-1 Hydro Electric Project. Significantly, it is very important to note that these opportunities have been increased to manifold directly as well as indirectly. The road network has been increased widely in the region. It has linked approximately 100 villages in the region and more one lakh fifty thousand people are benefited directly or indirectly by the road network. The local people were deprived from electricity before the inception of the project. To our surprise, it has got 100 percent success in this sector by providing electricity to every home. It is also helping local people in some other respects directly or indirectly. Postal and Banking services have been increased significantly in the region which is an additional benefit to the gendered public. The growth of Hotel Industry is another landmark. Contribution of the project. It has not only boosted tourism activities in the region but also provided employment to the local youths.

Thus, it can be concluded on the basis of above discussion that Chamera Hydro Electric Project/ Phase-I and phase-II have benefited the
state economy not only in the economic terms but has also generated number of direct and other indirect opportunities in social and other sectors in the region. In nut shell, it can be concluded that road infrastructure, banking facilities, postal services, school services and tourism infrastructure security facilities got expanded. Further it is also concluded that hydro power project increase the income of the state. There is very positive impact of these hydro power projects in the region. These projects made drastically change in the Chamba district. The living standard, life style have been changed due to these hydro power projects.