CHAPTER-6

PLANNING FOR THE DEVELOPMENT OF INDUSTRIAL INFRASTRUCTURE

Many plans have been formulated for improving the condition of common man, but we find that more than half the population is still below the poverty line. Inspite of the astonishing speed with which scientific infrastructure has grown in the country and raised industrial productivity and agricultural yield, the consumption standard of the rural population has remained low, with a majority living below the poverty line (Behari, Bepin, 1976, p.3). Modern technology is essentially labour saving, its adoption has not helped in providing more employment to the huge mass of unemployed labourers. We gave up the Ghandian philosophy of simple living and self sufficiency and adopted science and technology as our tools for modernizing and developing our society (Vakil, C.N, and Rao, U.S. Mohan, 1973, p.XIII). But even this has not solved the problems of poverty and unemployment.

The 20th century has not been able to solve the ecological problems it has created. The most important challenges we face today, from climate research to space technology, from ecosystem and biodiversity research to oceanography, from demography to infection
biology are global in nature. It is needed to face challenges that science and research must take up in the 21st century for the well being of all peoples for this century and hopefully for many centuries to come. There is a need to emphasise alternatives to fossil resources and to see that the new economy is based upon the limitless power of the sun, an renewable energy sources as the basis for a sustainable civilisation (Singh, Ranjana, and Ranjan, Rakesh, 2001, P. 123)

Poverty in rural areas is a complex demanding a special approach for its solution, 'Mahatma Gandhi' once said that one may cheat God, but no one could cheat arithmetic'. He was retiring to the arithmetic that nearly 80 percent of the people of India lived and worked in the villages and that no programme of economic development could be a national programme unless it took work and wages into the millions of homes in rural areas. In previous decades, programmes for rural and urban regeneration were formulated on identical assumptions. It was thought that the factors of growth which could be helpful for industrial regions would also be beneficial for agricultural society. But the fundamental fact is that being complementary, they have developed in different ways. There has been widened the gulf, instead of creating a bridge, between urban and rural areas. The study area, Belthra Road Tahsil is no exception to it even after five decades of planning, eastern Uttar Pradesh is still very backward, agriculturally in general and industrially in particular.
The region is mostly affected by the regional economic disparities. In all the district of the Eastern Uttar Pradesh, Ballia is in the most pitiable position. Industrial development is insignificant.

The main characteristic features of the region are increasing pressure on agricultural lands, high density of population, irregular distribution of land holdings, great problems of unemployment, low literacy and inefficiency of irrigation, transport, banking and electric facilities. Therefore infrastructure has to be nationalised and strengthened for the balanced regional development. (Srivasvata, Dilip Kumar, 1993)

**INDUSTRIES AND THEIR TYPES:**

Generally the term 'industry' is used for manufacture of goods. In literary term it is systematic and orderly work. Thus, it includes all kind of economic activities. On this basis we can divide into four classes.

(i) Extractive
(ii) Reproductive
(iii) Manufacturing
(iv) Facilitative

The economic activities, by which men utilize directly the materials or resources for their needs, comes under the Extractive industries like fishing, hunting, lumbering mining and collection of
forest goods. In Reproductive industries we do not utilize any thing directly from the earth but we utilize the fertility and production of soil having co-operation with soil resouce and and natural elements. Thus extractive and reproductive industries include all the primary activities. If we utilize the materials produced by the above two industries as raw materials and activities of changing its shape, quality and property for more useful use are called as Manufacturing industries. All secondary activities belong to this category. In the same way tertiary and quaternary activities are the facilitative industries like teaching law and other earning professions.

In this chapter, the term 'Industry' is used only for the manufacture of goods taking raw materials from the primary activities. Therefore by industry we mean here the process of changing the pre-requisite shape, size and quality of goods with the help of tools operated by physical or mechanical power. In this context we can take the example of simple act of potteries, shoe-making, brick-making etc.

**TABLE 6.1**

**DISTRIBUTION OF COTTAGE AND SMALL SCALE INDUSTRIES**

<table>
<thead>
<tr>
<th>Block</th>
<th>Cottage Industry</th>
<th>Small scale Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of Units</td>
<td>No. of workers</td>
</tr>
<tr>
<td>Siar</td>
<td>241</td>
<td>553</td>
</tr>
<tr>
<td>Nagra</td>
<td>158</td>
<td>316</td>
</tr>
<tr>
<td>Total</td>
<td>399</td>
<td>969</td>
</tr>
</tbody>
</table>
COTTAGE AND SMALL SCALE INDUSTRY:

The small scale industries (SSI) sector in India has over the last five decades, played a significant part in building a strong and stable national economy. It also acts as a nursery for promoting entrepreneurial talent and as a catalyst of industrial growth (Jethra, B.D. 2000, Yojana, P. 14) The degree of industrialisation attained by an economy is often considered as an important indicator of development. It is vital to the development process in several ways. The greatest advantage of small scale industries is that employment is provided in the natural setting. It helps them to develop inherent talents and aptitudes in occupations congenial to them (Karrar, Haider, 1959, P. 10).

Cottage Industries are those in which manufacturing occurs on a very small scale by a particular family or group of persons. In this manufacturing process generally depends on the manual labour. It occupies a special role in the economy of Belthra Road Tahsil. On account of primitive techniques of production, the productivity is low but from point of employment, it is next only to agriculture. The work can be done even on part time basis and the labour of the whole family can be utilized. In Belthra Road Tahsil where there is great unemployment and underemployment, it can play an important role.
in the development of the region and efforts should be made in removing the obstacles in the way of their development. At present about 399 industrial units of this kind are working in the region. Out of the total units, 187 units are in the Siar town only. The main types of industries are oil crushing, shoe-making and agricultural implements.

According to the factory act of 1948, for registration, there should be atleast 20 persons in manual factory and if factory is power and labour consuming both, then there should be 10 persons. The factory which is registered under factory act and has invested upto Rs. 10 lakh comes under the small scale and more than that investment is considered as large scale industry. It is evident from the above tables-6.1 that Belthra Road Tahsil had 37 units of small scale industries with 584 persons. Out of these, 19 units were concentrated in Siar town only. 7 units were concentrated near the market of Nagra block. The major products of the small-scale industries are brick making, General Engineering etc.
TABLE 6.2

NAME AND NUMBER OF UNITS AND WORKERS

<table>
<thead>
<tr>
<th>Name of Units</th>
<th>Number of units</th>
<th>Total workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brick</td>
<td>14</td>
<td>720</td>
</tr>
<tr>
<td>Rope Making</td>
<td>13</td>
<td>42</td>
</tr>
<tr>
<td>Oil Crushing</td>
<td>11</td>
<td>31</td>
</tr>
<tr>
<td>Flour Mills</td>
<td>97</td>
<td>176</td>
</tr>
<tr>
<td>Bicycle Repairing</td>
<td>27</td>
<td>49</td>
</tr>
<tr>
<td>General Engineering</td>
<td>24</td>
<td>41</td>
</tr>
<tr>
<td>Radio and T.V. Engineering</td>
<td>18</td>
<td>52</td>
</tr>
<tr>
<td>Watch Repairing</td>
<td>20</td>
<td>34</td>
</tr>
<tr>
<td>Leather Industry</td>
<td>112</td>
<td>131</td>
</tr>
<tr>
<td>Photography</td>
<td>14</td>
<td>35</td>
</tr>
<tr>
<td>Pulse mill</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>Rice mill</td>
<td>29</td>
<td>72</td>
</tr>
<tr>
<td>Gur &amp; Khandsari</td>
<td>21</td>
<td>43</td>
</tr>
<tr>
<td>Furniture &amp; Agricultural</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>Implements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cold storage</td>
<td>6</td>
<td>38</td>
</tr>
<tr>
<td>Steel Boxes</td>
<td>9</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>436</td>
<td>1553</td>
</tr>
</tbody>
</table>

Source - District Industrial centre and Personal survey.
SPATIAL DISTRIBUTION OF INDUSTRIES:

In the present study, the industries are classified according to the raw materials consumed and commodities produced by them. Their spatial distribution number of persons employed and problems have been discussed under the following main heads.

Agricultural Implements-

With an increase in agricultural production in the study area, the increased requirement of agricultural implements becomes imperative. Improved agricultural implements and machines increases agricultural productivity. Therefore, during the last decades there has been great demand for the improved agricultural implements. At present there are 8 units producing agricultural implements with 40 workers. Out of these 8 units, 5 are concentrated in Siar town area, 2 in Farsatar Nyaypanchayat of Siar block and 1 in Awarai Kalan Nyaypanchayat of Nagra block. They produce, threshers, disc ploughs, disc harrows, sprayers grass cutters, spades etc. The products are generally sent to the local town and rural areas. The detailed study of these industries has been done and found that 80 percent of the producers feel great difficulty in buying the raw material. They purchase raw material in the black market and therefore the production cost goes high, resulting in 10-20 percent production remaining unsold.
TAHSIL BELTHRA ROAD

DISTRIBUTION OF SMALL-SCALE INDUSTRIES

FIG. NO. 6.1
General Engineering-

There are 24 units of the general engineering in which 18 units are found only in Siar town. 2 units are found in Farsatar nyaypanchayat and 2 units are found in Tadibaraon of Nagra block. One in Awarai Kalan nyaypanchayat of Nagra block and one in Turtipar Nyaypanchayat of Siar block. This includes generally the repairing and servicing of buses, cars, and other agricultural implements like pumping machines, tractors iron pipes, welding works etc. These industries need sufficient investment but generate less opportunity of the employment, which is not helpful for the region.

There are 18 units of Rdio and T.V. repairing centres in which 52 workers are employed. Out of 18 units, 15 units are in Siar town itself and one each in Indaso village of Lahsani nyaypanchayat which is in Nagra block, Tadibaraon nyaypanchayat of Nagra block and in Farsatar nyaypanchayat of Siar block. One positive point to b noted on field survey that majority of the village houses has Television, either it may be portable. But if there T.V. or radio sets wants some repairing, people have to travel long distance.

Forest based industries-

Though the area has no forests but it has 8 forest based industries. Because they get their raw materials from Gorakhpur, Since main road-route from Ballia to Gorakhpur via Belthra Road is passing.
The products of this group are furniture, wooden boxes, agricultural implements like local ploughs. 5 Units are in Siar town, 2 in Farsatar nyaypanchayat of Siar block and one in Awarai Kalan of Nagra block. Normally the development of this industry is related to the progress recorded in the availability of raw material from Gorakhpur. There is some potentiality to develop the manufacturer of plywood, hard boards, match splints and sports goods. There is 13 rope making units in which 42 workers are employed. There is potential in rope making units to be increased because their demand is high.

**Agro based Industres**-

**Oil Crushing** - There is eleven oil crushing mills in the study area. Out of the total 6 units are in Siar town and one each in Farsatar & Turtipar nyaypanchayat of Siar block and the rest three are in Nagra block of Tadibaragaon, Awarai Kalan and Lahsani Nyaypanchayat. It provides employment to about 31 persons Khadi and village Industries corporation ( KVIC ) provides about Rs. 10,000 to the registered institution for powerghani. The introduction of power ghani in the villages has been an important landmark in the progress of this industry. This innovation has increased the output but retained the original atmosphere of the traditional oil ghani. It retains quality of oil without causing any displacement of labour and can be operated by Teli without the help of technical personnel. The design of power ghani is simple.
and indigenous and teili himself can operate with a little training, and even in the case of repair, he can get it done locally.

Gur and Khandsari-

White crystal sugar entered would consumption as a major carbohydrate energy producing food as recently as the 19th century, but gur and khandsari have much older tradition. Gur is technically merely a concentrated form of Sugar Juice, but in appearance, it is humpy brown sugar. Khandsari is a powdery, yellowish product. Gur khandsari industries are distributed with 14 in Siar block including urban area and 7 in Nagra block. Though the Khadi and Village Industries Corporation (KVIC) has designed, improved bullock-driven crushers and power driven curshers, but the efforts should be made to improve the process of boiling the juice and seperation by hand driven centrifugal crystallizer. The bulk of sugarcane of the total production is used for gur making. Khandsari is so far only a minor product and some are used for regrowing the crop as seed.

Food Processing Industry -

This includes the flour, rice and pulse mills. The total number of food processing industries are 139, Out of which 69 percent are flour mills, 21 percent are rice mills and 10 percent are pulse mill. Out of total number of food processing industries 45 percent are in
Siar block and 25 percent in Nagra block. 14 percent of the rice mills out of total food processing industries are in Siar block and 8 percent of rice mills in Nagra block. The (KVIC) khadi and village Industries corporation has provided grants for the expansion and better management of these mills.

**Leather Industry -**

With a large cattle population, production of leather and its subsequent conversion in numerous products is an important industries in the tahsil. There are 112 units of leather industry employing about 131 persons. Out of 112 units, 70 units are in Siar block employing 76 workers and 42 units are in Nagra block employing 55 persons. Raw materials like special leather, sole, astar, etc. are imported from either Kanpur or Kolcutta. There is a good demand of shoes in the rural areas of the study region as well as the towns of Ballia district. We personally contacted many industries owners and found that 90 percent of the owners suffer from the lack of availability of raw materials and capital investment. Therefore these problems should be solved so that they can make an extension of their industries to increase their income as well as make greater production.

**Other Industries-**

It includes Bicycle repairing, watch repairing, cold storage, steel boxes etc. providing an employment of 132 persons.
Majority of the units are located in Siar town. Out of 6 cold storage 4 units are in Siar town and one in Tadibaragaon and Awarai Kalan Nyaypanchayat of Nagra block. Number of cold storage must increase owing to the great demand.

**TABLE 6.3**

**INDUSTRIAL EMPLOYMENT AND INDUSTRIAL INTENSITY OF BELTHRA ROAD TAHSEL**

<table>
<thead>
<tr>
<th>Block</th>
<th>No. of industries</th>
<th>No. of workers</th>
<th>No. of industries as % of Total Tahsil</th>
<th>No. of workers as % of Total Tahsil</th>
<th>$\frac{x+y}{2}$ Industrial Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siar</td>
<td>267</td>
<td>1047</td>
<td>61.2</td>
<td>67.4</td>
<td>64.3</td>
</tr>
<tr>
<td>Nagra</td>
<td>169</td>
<td>506</td>
<td>38.8</td>
<td>32.6</td>
<td>35.7</td>
</tr>
<tr>
<td>Belthra Road Tahsil</td>
<td>436</td>
<td>1553</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source - District Industrial Centre and Personal survey*

**INDUSTRIES AND INDUSTRIAL EMPLOYMENT:**

The above discussion on spatial distribution of industries and their employment bring us to conclusion that the development has been lopsided with a large regional imbalances. This is clear from the table 6.3 which shows that 61.2 percent industries are in Siar block.
and only 38.8 percent are in Nagra block. The pattern of the industrial employment shows a clear picture of the degree of industrial development in different blocks. Siar block alone has 67.4 percent of total employment and Nagra block has only 32.6 percent. It means that employment is double in Siar comparable to Nagra block. This shows a clear gap or imbalances in the regional development of industrial units. This needs a new policy for the reorientation of the establishment of industrial units in this Tahsil, so that a proper balanced regional development can take place in Belthra road Tahsil.

INDUSTRIAL INTENSITY:

To measure the industrial development several methods have been used by different scholars. Alfred J. Wright (Wright Alfred, J. 1938, PP. 195-200) took the data of 'the value added by manufacturing' for demarcation of 'Manufacturing Districts of the united states' Power consumption as an index has also been taken to know the level of manufacturing. J.H. Thompson (Thompson, J.H. 1965, PP. 416-436) has taken six variables.

i) Value added by manufacturing,

ii) ratio of all employees in manufacturing to total population,

iii) ratio of the employees in manufacturing to the total employed in all industries.
iv) ratio of value added by manufacturing to total population.

v) Persons employed in manufacturing and

vi) Salaries and wages.

The author has adopted the Mandal's (Mandal, B., 1971, PP. 50-62) and Singh (Singh, M.B, 1919, P. 112) process of calculating the industrial intensity. For this two basic data have been taken into consideration.

i) number of industries, and

ii) number of employment.

Taking these two above variables, industrial intensity has been calculated for region with the help of the following formula:

\[
\text{Industrial Intensity} = \frac{X + Y}{2}
\]

Where,

\[
X = \frac{\text{No. of industries in blocks/towns}}{\text{No. of industries in talsil}} \times 100
\]

\[
Y = \frac{\text{No. of persons employed in manufacturing in block/town}}{\text{x100}}
\]

The industrial intensity given in Table, shows that Siar block has high intensity than Nagra block, This intensity can be
increased by providing some industries in the less developed areas and in Nagra block.

**RECOMMENDATIONS FOR INDUSTRIAL DEVELOPMENT:**

Man's wants other than food are so numerous and so diverse that virtually no limit can be placed on use or consumption of manufactured goods and utilization of social services. Therefore there is no limit to the amount of non-agricultural resources and number of opportunities that a developing country like India may need or choose to create. There is large number of persons can be employed in non-agricultural resources both as a means of raising our standard of living and as is a source of employment. The question is which kind of industrial pattern we should adopt. Gandhiji always advocated the use and encouragement of cottage industries in the country. In the circumstances of country which had such a vast man- power and comparatively little land and other natural resources, he argued, it could be only the cottage industry which required little or normal capital and provided more needed employment. He was not against industrialization but he was against neglect of agriculture, cottage industries and rural arts and crafts.

So, in giving a plan for industrial development, we should take care of the above problems. Our emphasis should be more on the development of the cottage and small-scale industries according to
demand-based industries and their potentialities. To establish any industry we should think of the market for products and adequate supply of raw materials by different sources. The major problems of the study area is the lack of metallic and other mineral resources for establishment of large metallurgical or chemical complexes. Therefore, efforts have to be directly make towards promoting small and medium-scale agro-oriented industries. Some attempts are being made to achieve the goal of removing unemployment in the study area by providing financial assistance to weaker sections and unemployed persons by Districts Industries, centre, Ballia.

There is a good hope for the economic well-being of the study area by implementing the proposed plan for agricultural development. This may result in more per capital income, and provide greater employment in agricultural sector. The study area is very poor in mineral resources and the main resources of the area are agricultural raw materials and large human resources. Wheat, Rice, potato, Sugarcane, pulses, etc. are the main crops of the region. These are the main resources of the area. So the plan for industries should be based with a view to utilize these local resources fully. This region also has a large number of animal resources providing hides and heavy raw leather. That is why the region has a good prospect of the agricultural and livestock resource-based industries. Some feasible industries are given below-
i) wooden and Iron agricultural implements industires.

ii) Cold storage,

iii) Gur and Khandsari,

iv) Food processing industries

v) Oil crushing industries.

vi) Leather processign and shoe-making.

vii) Cattle feed plant.

The rapid introduction of agricultural implements like tractor, thresher, pumping set, and tubewell, creates employment in the activities like that of maintainence, repairing and allied jobs. so, this provides the base for the following industrial possibilities.

i) Agro-Servicing industries.

ii) Lathe works

iii) Spare parts manufacture and

iv) Plant protection appliances.

These industries will provide additional employment in improved marketing and for their own requirement of industrial services.
Just to find the solution of the problem of unemployment there is need to develop industries besides those accompanying agricultural developments. For this we should encourage village artisans and service- centre- oriented industries. These types of industries need less investment with greater scope of providing employment opportunities. In this additional category we can propose the following industries for:

i) Matches,

ii) Strings and ropes

iii) Potteries,

iv) Boxes and buckets,

v) Soap industry,

vi) Candle and Agarbatti's,

vii) Saw mill,

viii) Bamboo works and

ix) village carpentry and Black smithy.

**INDUSTRIES BASED ON THE WASTE MATERIALS:**

A huge quantity of industrial by-products or wastes are generated in the process of development. A good number of such
wastes can be profitably recycled and utilized for creating more wealth and employment opportunities in rural areas. Reed, straw, rice-husk and bagasse are obtained as industries waste. They are mostly disposed off by incineration or used as fuel. Utilization of these wastes apart from solving the problems of disposal, would improve the agricultural economy as well as unemployment problem to some extent.

The study areas produces much sugarcane and rice. Most of the sugarcane is crushed into the 'Kolhu' for making gur and the by-products available from Sugar-crushing like bagasse, furnace ash, filter mud are not utilized. Only the bagasse is used as fuel. But in dry bagasse, the fibre content is about 65 percent and pitch cell 35 percent. The fibre, are fine, strong and flexible and posses little resistance to pro-longed chemical action (Madhu Bala, 1980, P. 12-13). This bagasse is now frequently being used in making good paper. Therefore, there is scope of establishing a paper mill.

Other important wastes are straw and rice husk. However, straw is not quite so, suitable as bagasse for the manufacturing of paper. But it is being used in some paper industries and for making paper straw board. It is also being used as a reinforcing material in the preparation of mud plaster. Rice husk has formed use in the preparation of sand lime brick. Rice husk block have also been made from ash-lime-cement (5:4:1) mixture using a suitable catalyst. These two by-products are not so important but can provide an additional income.
INFRASTRUCTURAL SUPPORT:

The industrial growth is not satisfactory, due to lack of infrastructure. Lack of the entrepreneurship is often also attributed as a factor. It is really surprising that some people of the area, who have migrated elsewhere, have proved to be a good entrepreneurs, but they have not shown any real initiative in their own area. These entrepreneurs should be encouraged while capital for industries would largely come from the private sector, in a few cases we found that it is necessary to go in for joint ownership and promotion in the initial stages. The co-operation of khadi and village Industries commission, the District Industries centre. The All India Handicrafts Board and the Rural Electricity corporation would need to support and upgrade cottage industries, and design and adopt them for the market demand.

The other problems is to find market for the market produced goods. Marketing of the products is going to be the most difficult part of the efforts for profitable industrialization of rural areas. The Government may think in terms of setting up marketing co-operatives, Public sector marketing institutions and make the necessary investments on transport. It would be highly important that marketing guidance and marketing intelligence cells should be set up as promotional measures for the industry in the rural areas.
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