CHAPTER X

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CHAPTER X

HUMAN RESOURCE DEVELOPMENT - CONCLUSIONS

1.0 INTRODUCTION:

The purpose of this chapter is to sum up the main conclusions of the study (done in the previous nine chapters) to get a comprehensive view on the basis of these conclusions. Suitable suggestions are also made, in this chapter, to change the existing situation and thereby to achieve the developments of the Konkan region.

1.1.0 India has no future without effective human resource development (HRD) for organisational effectiveness and national and social growth. HRD envisages a very comprehensive process of dealing with the regional human resources in the context of potential land resources. In recent times, HRD is being related in a conscious manner to the strategic regional development needs and the career plans of individuals. As far as the case of Konkan is concerned in specific, a strategy for manpower is to be conciously planned to achieve the regional development. Newer avenues and methodologies like interactive video, computer aided training, distance learning and facilities for financial (bank) credits for the benefit of upcoming generation are advisable.

1.1.1 The Konkan region excluding Bombay comprises
of four districts viz. Thane, Raigad, Ratnagiri and Sindhudurg has been classified as a backward or 'problem region' by geographers. Due to the inclusion of Bombay coastal low land gives an impression of rapid progress. But facts are different. Infact these four districts (with the exception of the area of Thane located around the Bombay), as compared to the Bombay region have remained economically backward. The reasons are manifold in which notable are the problem of less planned utilization of resources due to negligence of local potentiality, influence of Greater Bombay, poverty of the people, less technological development, declining working force, poor transport network and dearth of skilled workers. The development programme for the Konkan region should be based on a comprehensive understanding of the above mentioned problems. Having considered this view point population geography of the Konkan region is studied and suggestions are putforth.

1.1.2 The human exodus to Bombay and the acquired characteristic of 'money order economy' of Konkan, male selective migrations and further abnormal sex ratio (more number of female than male) are the drawbacks emerging out of the under utilization of the resources. The strategy is to be based on the inventory, conservation and utilization of the physical and human resources.
PLAN FOR FUTURE :

1.2.0 Our preceding study of Konkan region shows that the Konkan has a very good potentiality of physical resources in the form of soil, climate and vegetation. A thoughtful long term planning is necessary for restricting the out flow of population.

LINE OF FUTURE INDUSTRIAL DEVELOPMENT :

1.3.0 In spite of certain constraints, there is a vast scope for the development of different types of industries in near future. This development of industries will stop the out-migrations from the region. The industrial development of Konkan rely upon its endowment of natural resources of raw material (Expansion of agricultural, horticultural, mineral, marine and forest products). Here attempt has been made to indicate lines of future development for different types of industries.

I INDUSTRIES BASED ON AGRICULTURAL AND HORTICULTURAL RESOURCES :

1.4.0 In the Konkan region the vast potential of agricultural and horticultural base is one of the most solid means for promoting industrialisation. We have already mentioned that the Konkan region is rich in production of various industrial crops. Due to this an appreciable scope for developing, various types of
processing and manufacturing industries is left.

1) RICE BRAN OIL EXTRACTION INDUSTRY :

1.4.1 The Konkan region being a ricegrowing area, has huge quantity of rice bran and rice straw. Every part of rice plant can be used for the development of this industry. For availability of sufficient rice bran and straw, the extraction of oil unit should be near the existing rice husking mills which are located amongst the rice growing areas. Thane and Raigad districts have comparatively greater scope for the development of such oil extraction industry.

2) PAPER AND PAPER-BOARD INDUSTRY :

1.4.2 The Konkan region has abundant supply of the rice straw and grass which is an important raw material for the manufacturing paper and paper board. Demand for these products is also rapidly growing day by day. Due to this there is a wide scope for establishment of paper and paper board industrial units near the rice growing areas mainly in the backward tahsils of Khalapur, Roha, Ratnagiri and Sawantwadi.

3) INDUSTRIES BASED ON MANGO :

1.4.3 Large production of mango of Ratnagiri and Sindhudurg districts provides scope for development of few industrial units such as fruit presservation,
manufacturing of pickles and extraction of juice especially in the talukas of Ratnagiri, Deogad, Lanja, Guhagar which produce large quantities of high quality mango.

4) INDUSTRIES BASED ON CASHEWNUT :

1.4.4 With adequate supply of cashewnut some selective central places can establish units for processing of cashewnuts, cashew kernel and cashew apples in the region. Mainly Sawantwadi, Malvan have the scope for these units. The cashew wine, liquors and candied products will have unique export possibilities.

5) INDUSTRIES BASED ON BANANA :

1.4.5 The large production of Banana from the Bassein and Palghar talukas provides a wide scope for the development of industries which manufacture jelly, banana chips, banana figs and banana meal (powder) etc. Besides this experiments conducted on the manufacturing of paper from banana stumps have proved successful.

6) INDUSTRIES BASED ON COCONUT :

1.4.6 Due to the increasing coconut plantation and production of coconut in the districts of Ratnagiri and Sindhudurg, there may be scope for setting of a few coconut oil producing units on the co-operative basis.
Besides, most of the coconut husk coir waste either are used as a fuel or are thrown as waste. By avoiding such type of misuse, there would be scope for setting of certain industries such as manufacturing of coir and fibre, manufacture of ropes, mats, carpets in the Sawantwadi, Vengurla, Malvan, Kudal, and Deogad taluka of Sindhudurg district and Shriwardhan, Mhasla, Alibag and Uran talukas of Raigad district.

7) INDUSTRIES BASED ON PINEAPPLE :

1.4.7 Due to the increasing area under pineapple fruit a scope is created for setting up processing units based on it particularly in Sindhudurg and Ratnagiri district.

Due to the availability of large quantity of waste from mango and pineapple of Sindhudurg district, there is a scope for the establishment of manufacturing units of by-products such as sugar syrup, pectin, starch and animal feeds etc.⁴

II SCOPE FOR INDUSTRIES BASED ON FISHERY :

1.5.0 One notable source which has a great scope for development is marine resource. Out of the 42 tahsils of the Konkan, about 24 tahsils have about 885.1 kms. coastline length (this includes the length of
creeks and inlets) which has extensive continental shelf with a good fishing potential and is estimated at 3,25,000 sq.kms.

**TABLE NO. 10.1**

**TAHSIL-WISE COAST-LENGTH IN KONKAN**

(Including creeks and inlets)

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>District</th>
<th>Name of Tahsil</th>
<th>Coast length in Kms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ratnagiri</td>
<td>-</td>
<td>273.0</td>
</tr>
<tr>
<td>2</td>
<td>Mandangad</td>
<td>5.2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Dapoli</td>
<td>47.8</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Guhagar</td>
<td>57.4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Ratnagiri</td>
<td>88.7</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Rajapur</td>
<td>73.9</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Sindhudurg</td>
<td>-</td>
<td>164.3</td>
</tr>
<tr>
<td>8</td>
<td>Deogad</td>
<td>53.9</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Malvan</td>
<td>45.2</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Vengurla</td>
<td>47.8</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Sawantwadi</td>
<td>17.4</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Raigad</td>
<td>-</td>
<td>274.9</td>
</tr>
<tr>
<td>13</td>
<td>Panvel</td>
<td>15.7</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Uran</td>
<td>26.1</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Pen</td>
<td>13.1</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Alibag</td>
<td>47.9</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Roha</td>
<td>19.1</td>
<td></td>
</tr>
<tr>
<td>Sr. No.</td>
<td>District</td>
<td>Name of Tahsil</td>
<td>Coast length in Kms.</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
<td>----------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>18</td>
<td>Murud</td>
<td></td>
<td>56.5</td>
</tr>
<tr>
<td>19</td>
<td>Mangaon</td>
<td></td>
<td>13.9</td>
</tr>
<tr>
<td>20</td>
<td>Mhasala</td>
<td></td>
<td>21.7</td>
</tr>
<tr>
<td>21</td>
<td>Shriwardhan</td>
<td></td>
<td>60.9</td>
</tr>
<tr>
<td>22</td>
<td>Thane</td>
<td></td>
<td>172.9</td>
</tr>
<tr>
<td>23</td>
<td>Talasari</td>
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<td>4.4</td>
</tr>
<tr>
<td>24</td>
<td>Dahanu</td>
<td></td>
<td>27.8</td>
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<tr>
<td>25</td>
<td>Palghar</td>
<td></td>
<td>47.8</td>
</tr>
<tr>
<td>26</td>
<td>Bassein</td>
<td></td>
<td>39.1</td>
</tr>
<tr>
<td>27</td>
<td>Thane</td>
<td></td>
<td>43.4</td>
</tr>
<tr>
<td>28</td>
<td>Bhivandi</td>
<td></td>
<td>10.4</td>
</tr>
<tr>
<td>29</td>
<td>Konkan</td>
<td></td>
<td>885.1</td>
</tr>
</tbody>
</table>

1.5.1 Ratnagiri and Sindhudurg coasts have a large quantity of prawns, mackerel and Sardines. Most of their catch is of large size and homogeneous. Therefore, there is a scope for the fish canning industry in Malvan, Ratnagiri tahsils.

Though there are 20 fish curing yards in Konkan, there is vast scope to set up a few more curing yards in near future.

Konkan region has not any manure industry based
on fish. Thane, Palghar, Bassein, Ratnagiri, Malvan talukas have regular supply of mackerel and sardines; which gives out a scope for fish manure and fish meal industry.

Janjira, Ratnagiri, Vengurla, Malvan, Bassein, Satpati and Arnala are the significant fishing centres which catch about 4000 tonnes of sharks every year. Therefore, the above mentioned centres have a scope to establish self contained shark liver oil extraction units.

1.5.2 In addition to all above industries based on fishery, well-known by-products like fish meal, fish solubles, hydrolysates, other valuables like cholesterol, derivatives of nucleic acids, flavouring compounds can also be obtained from waste fish tissue by processing in factories of Konkan.

III SCOPE FOR INDUSTRIES BASED ON FOREST:

1.6.0 In the Konkan region there is considerable scope for expansion of existing forest based industries and also for new types of industries. They are as follows

1) SAW MILLING AND HARDBOARD INDUSTRY:

1.6.1 The saw milling industry is sure to expand with the growth of timber output in Vada, Dahanu, Palghar, Shahapur, Mokhada, Jawhar, Murbad, Roha, Sudhagad, Pen,
Khapur, Karjat talukas. Besides, saw dust and wood chips which are now burnt as fuel can be used for making hard boards. Therefore, the areas where saw mills are concentrated in a large number, have scope for starting new units of producing hard boards.

2) MANUFACTURING OF FURNITURE:

16.2 Because of growing demand for furniture and availability of timber from local forest, there is scope for the expansion of furniture manufacturing industrial units in Sawantwadi, Kudal, Ratnagiri, Guhagar and Chipulun tahsils.

3) PAPER AND PAPER-BOARD INDUSTRY BASED ON GRASS AND BAMBOOS:

16.3 Extensive area of Konkan is under grass and bamboos are also extensively grown in forest. Such grasses and bamboos provide the scope for setting of paper, chemical pulp and straw board industries.

Besides above mentioned forest based industries, manufacture of shuttle and bobbins, toy making manufacturing of plywood and boat industries are also have large scope in Konkan.

IV SCOPE FOR MINERAL BASED INDUSTRIES:

1.7.0 In Konkan region likewise agro and forest based
industries, there is also a scope for starting new types of mineral based industries.

1) MINI ALUMINA CEMENT PLANT:

1.7.1 Konkan region has a scope for starting new types of cement (known as alumina cement) manufacturing plant, subject to local availability of bauxite, water transport, power with other infrastructural facilities. Roha, Shriwardhan and Murud tahsils of Raigad district, Mhapral (Mandangad tahsil), Anjarle (Rajapur tahsil), Ratnagiri tahsils of Ratnagiri district, Aronda, Kasarda in Sawantwadi tahsil of Sindhudurg district are the best locations for this type of industry.

2) PIG IRON PLANT:

1.7.2 The Sindhudurg district has a sizeable resource of good quality iron ore. Though the economic justification for making iron within a district is not possible due to the absence of coal resource within the region, Sindhudurg district there is a considerable scope for the development of pig iron plants where iron ore may be converted into pig iron before being exported.

3) MANUFACTURE OF CALCIUM CARBIDE:

1.7.3 Since there is ready and growing market for carbide, there is a scope for additional units in this
region. A few plants can be set up at Sawantwadi and Chiplun tahsils.

4) SALT-BASED INDUSTRIES:

1.7.0 Due to the availability of abundant supply of salt from the local salt pans and proximity to the major markets, particularly Bassein, Uran, Thane talukas have bright scope for establishing a few manufacturing industries, such as manufacturing of caustic soda, soda ash, hydrochloric acid, sodium sulphate. From this viewpoint soda ash factory may be located at Bassein, Thane and Panvel. Besides this the existing salt pans those located near Bombay (Uran, Shewa, Bassein, kalwa, Belapur, Thane, Bhayander) have opportunity for setting up plants to manufacture chemical salt, magnasium carbonate, potassium chloride and other chemicals such as sodium sulphate and hydro-chloric acid etc.

1.7.5 With the improved standard of living in Urban areas demand for crockery/pottery articles is on higher side. The required raw material for these articles like potash, feldspar, china clay is available near Kankavli area. Hence one unit of manufacturing crockery/pottery articles can be set up either at Kankavli or at Kudal which will cater the needs of people who reside in Kudal, Malvan and other urban centres.
V INDUSTRIES BASED ON PETRO-CHEMICALS :

1.8.0 The discovery of oil and gas on the coast of Konkan is probably the first major discovery of natural resources promising tremendous development potential. The oilfield known as "Bombay High" covers approximately an area of 1500 sq.kms. in the Arabian sea about 200 kms. North-West of Bombay, while reserves at "Bombay High" oil field is capable of bringing in annually 10 million tonnes of crude oil and 10 billion cubic meters of gas. Crude oil and associated gas are discovered in these offshore fields near Bassein. The production of oil in North Bassein field is estimated to produce 2 million tonnes of oil per annum and about 1 million cubic meters of associated gas per day, while south Bassein oil field is estimated to produce about 21 million cubic meters of gas per day. Raigad and Thane districts, therefore, have good potentiality for the setting up of various big, small and ancillary industrial units based on the petro-chemicals. They are listed as -

1) Manufacturing of Drugs and pharmaceuticals.
2) Manufacturing of Dyes and Intermediates.
3) Manufacturing of Pesticides and intermediates.
4) Manufacture of polymers.
5) Manufacture of synthetic fibres.
6) Manufacture of prints and varnishes.
7) Manufacture of gas, crackers, ethylene, propylene.

8) Manufacture of low density polythene and other engineering industries.

1.8.1 Industrial development is the main source of development of Konkan's economy. Due to this importance of industries for Konkan, we have suggested the talukwise locations of various industries and the technical training to be given to the local people in the table No. 10.2

1.8.2 Besides all these industries, the chief Minister of Maharashtra, Mr. Sharad Pawar has suggested a big unit for Konkan i.e. electricity production on gas at Nagothana which has estimated expenditure of about Rs. 1,200 crores. This unit will produce 820 mega wt. electricity. Chief Minister suggested that government has planning of two more such type of projects at Dabhol and Uran, which will produce 760 and 864 mega wt. electricity respectively.
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Tahsil</th>
<th>Scope for industries</th>
<th>Technique to be imparted to the people</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sindhudurg</td>
<td>1) Wooden toys</td>
<td>Handy-craft training is required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Furniture</td>
<td>Skill of carpentry is required</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) Saw mills</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4) Honeybee</td>
<td>Technique of collection of honey.</td>
</tr>
<tr>
<td>5) Poultry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) Aurvedic medicine</td>
<td>Information of medicinal plants, their uses and preservation and preparation of medicines.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7) Potato Wafers and chips</td>
<td>}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) Kokum syrup and kokum oil extraction</td>
<td>}</td>
<td>Technique of concerned industry</td>
<td></td>
</tr>
<tr>
<td>9) Mango pulp preservation</td>
<td>}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10) Jamun syrup</td>
<td>}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11) Manufacturing of soap</td>
<td>}</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12) Manufacturing of incense stick (Agarbatti) Technique of concerned industry
13) Coir and Fibre making
14) Paper making
15) Kath making
16) Ice plants Freezing technique.
17) Manufacture Skill. and processing of making tin containers. of Tin containers for packing cashewnut and mangoes.
18) bidi making and patravali making

2 Vengurla

1) Shell lime, Processing of lime making sodium silicate,
2) Silica industries —
3) Laterite stone cutting —
4) Manganese ore mining —
5) Salt manufacturing —
6) Agarbati making —
7) Shark liver oil Manufacture of liver extraction and preservation of oils.
8) Kath making Collection kath juice.
9) Bricks toils making'
10) Ayurvedic medicines Plantation, care taking and use and preparation of medicines.
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Coir and coir articles</td>
<td>Technique of manufacture of coir and skill of coir articles.</td>
</tr>
<tr>
<td>12</td>
<td>Fish canning</td>
<td>Skills of canning fish.</td>
</tr>
<tr>
<td>13</td>
<td>Manufacturing of chshew-karnel oil</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Spinning mills</td>
<td>Process of spinning.</td>
</tr>
<tr>
<td>15</td>
<td>Scented supari</td>
<td>Préservation of arecanut.</td>
</tr>
<tr>
<td>16</td>
<td>Small boat building</td>
<td>Skills for boat building.</td>
</tr>
<tr>
<td>17</td>
<td>Kokum syrup, kokum oil extraction</td>
<td>Concerned technique.</td>
</tr>
<tr>
<td>18</td>
<td>Mango, canning</td>
<td>Mango canning technique.</td>
</tr>
<tr>
<td>3</td>
<td>Kath industry</td>
<td>Collection of Kath caltex.</td>
</tr>
<tr>
<td>1</td>
<td>Saw mill</td>
<td></td>
</tr>
</tbody>
</table>
| 2    | Dairy                                            | Care taking of dairy animals and production of dairy products.
| 4    | Cashewnut processing                             |                                                               |
| 5    | Kokum seed oil and Kokum juice                  | Technique of juice making and preserving knowledge.           |
| 6    | Straw board                                      | Skills of making pulp and board.                              |
| 7    | Bakery                                           | Baking knowledge and oven use.                                 |
| 8    | Confectionery                                    |                                                               |
| 9    | Ice factory                                      | Freezing-defreezing knowledge.                                |
| 10   | Tin manufacturing                                | High technology.                                              |
11) Plastic rain coats
12) Wax candles
13) Poultry training.
14) Cartoon making
15) Diamond processing
16) Ceramic glaze pottery
17) Lime industry
18) Mangalore tiles, mosaic tiles
19) Laterite stone cutting
20) Aluminium utensils

4 Malvan
1) Fish meal Fish canning technique. (High technology)
2) Mango canning and mango pickle making technique and preservation.
3) Shark liver oil extraction (high technology)
4) Coir and fibre processing of katha making, rope making
5) Laterite stone cutting

5 Kankavali
1) Silica sand mining
2) Honeybee keeping Collection and preservation of honey.
3) Ayurvedic medicine Detailed training of medicinal plants and use.
4) Mango juice Mango canning
5) Kokum and cashew processing.

6) Kokum and cashew oil production.

6 Deogad

1) Mango pulp production, pickle production knowledge.

2) Wooden furniture

3) Saw mills

4) Fish mills Fish canning

5) Kokum syrup Making and preservation of syrup.

6) coconut-oil, coir making Extraction of oil

7) Mango nursery Technique of production of mango plants.

II Ratnagiri District

7 Rajapur

1) Lime industry Technique of lime production.

2) Mangalore tiles Skills of mangalore tiles.

3) Mining of silica sand

4) Production of mango pulp Mango canning

5) Poha, Kurmura production

6) Mango canning, Canning of mango, preservation of pickle.

7) Production of potato chips and wafers, wafers.
| 8  | Rajapur  | 1) Lime industry | Lime making technique |
|    | (Continue) | 8) Silica mining | Use of silica |
|    |           | 9) Kath production | Technique of collection of kath and care of plants. |
|    |           | 10) Saw mills | |
|    |           | 11) Mango canning | Mango canning knowledge |
|    |           | 12) Bricks and toils making | |
|    |           | 13) Leather goods | Leather technology (tanning etc.) |
|    |           | 14) Cashew processing | |
|    |           | 15) Manufacturing of potato chips and wafers | |
| 9  | Lanja    | 1) Saw mills | |
|    |           | 2) Kath making | Collection of kath juice |
|    |           | 3) Poultry | Health of poultry birds, their feeding etc. |
|    |           | 4) Dairy | Dairy farming and dairy products. |
|    |           | 5) Furniture making | Skill of wooden carving |
| 10 | Ratnagiri | 1) Alumina cement | Chemistry of alumina cement. |
|    |           | 2) Kath making | |
|    |           | 3) Dairy industry | Dairy farming and dairy production and preservation technique. |
|    |           | 4) Mango pulp making | |
|    |           | 5) Cashew processing | Fruit canning |
|    |           | 6) Kokom processing | |
7) Polythenic bags  Technique of making bags
8) Fish meal and manure  Fish canning knowledge
9) Shark liver Oil extraction  Extraction and preservation technique (high technology)
10) Soap manufacturing  Mixing and proportion of raw materials (high technology).
11) Boat building  Carpentry skills
12) Printing  Composing and related skills
13) Industries based on aluminium  Chemistry of Aluminium (high technology).
14) Spinning mill  Technique of spinning
15) Handicrafts and paper production  Technique of making paper pulp and paper from it.

11 Sangmeshwar  
1) Mangalore tiles bricks
2) Saw mills
3) Straw boards
4) Soap industry  Mixing of raw material and soap preparation (high technology)
5) Plastic moulding

12 Chiplun  
1) Mosaic tiles  Technique of mixing a raw material production of tiles.
2) Cement products  Preparation of cement technique (high technology)
3) Paper boards  Mechanism of preparation of paper pulp from grass bamboo etc.
4) Saw mills
5) Foam rubber
6) Kath Collection and preservation of kath caltex.

7) Straw board

8) Dairy Care of health of dairy animals, production and preservation of dairy products.

9) Ice and ice candy

10) Aluminium utensils

11) Soap production Technique of preparation of soap, the machine mechanism.

12) Powerlooms Technique of designing cloths (high technology).

13) Argarbatti Training and know-how of raw material.

14) Steel furniture Skill of making of furniture

13 Khed

1) Mangalore tiles

2) Laterite stone cutting

3) Saw mill

4) Mango canning Mango canning knowledge

5) Leather goods Tanning and production of leather goods

6) Kath making

7) Brick making

14 Dapoli

1) Mangalore tiles

2) Stone crushing

3) bricks

4) Scented Supari Processing of scented supari

5) Coir fibre
<table>
<thead>
<tr>
<th>15 Guhagar</th>
<th>16 Mandangad</th>
</tr>
</thead>
<tbody>
<tr>
<td>6) Pineapple canning</td>
<td>1) Laterite stone cutting</td>
</tr>
<tr>
<td>7) Potato wafers</td>
<td>2) Mangalore tiles</td>
</tr>
<tr>
<td>8) Ice candy</td>
<td>3) Saw mills</td>
</tr>
<tr>
<td>9) Fish canning</td>
<td>4) Hirda powder</td>
</tr>
<tr>
<td>10) Poultry</td>
<td>5) Wooden toys</td>
</tr>
<tr>
<td>11) Kath making</td>
<td>6) Bakery</td>
</tr>
<tr>
<td>12) Nursery of plants</td>
<td>7) Poultry</td>
</tr>
</tbody>
</table>

- Juice making and preservation of it.
- Fish canning and preservation of fishes.
- Training of care of poultry birds.
- Preparation of graftes seedlings and other information about plants.
- Preparation and preservation technique
- Preparation of juice
- Preparation of oil
- Technique of coir fibre from coconut
- Skill of handycraft.
- Knowledge of Baking, and catering.
- Health of poultry birds their feeding.
8) Diamond processing Skill of diamond processing.
9) Kath making

III Raigad District

17 Poladpur
1) Seasamum oil Knowledge about oil extraction.
2) Dairy and poultry Training of health of dairy and poultry animals. Production of dairy product.
3) Pickle production Production and preservation of pickles.

18 Mahad
1) Production of wooden building material
2) Ancillary industries based on Thal-Yaishet fertiliser industry Related trade and technique about petro-chemical industry. Chemistry of biproducts (high technology)
3) Mangalore tiles
4) Manufacturing of clay
5) Pickle production Pickle production and preservation

19 Mhasla
1) Seasamum oil All chemistry of seasamum oil
2) Coir and fibre making
3) Salt making Salt processing
4) Refineries High technology required

20 Mangaon
1) Rice mills
2) Ayurvedic medicines Detailed information about medicinal plants (high technology)
3) Dairy industry Training of dairy production and care about dairy animals.
4) Wooden building material production
5) Manufacturing of clay images Skills of various images
6) Rice bran oil Mechanization of rice brain oil (high technology)
7) Production of paper and paper board Pulping technique and production technique.
8) Dal mills

22. Shriwardhan
1) Fish curing yard Fish canning technique
2) Coir and fibre making unit
3) Ice factory, clay Handicraft skill images
4) Salt refineries All details about salt refineries

22. Murud
1) Shark liver oil extraction Process of extraction of oil (high technology)
2) Fish curing yard Fish canning fish meals
3) Manufacturing of pickle Production and preservation of pickles
4) Tanning material
5) Kath making Collection of kath caltex.

23 Roha
1) Manufacture of wooden furniture Skill of furniture making.
2) Switch boards Training of electricians.
3) Varieties of Training of taht related ancillary industries ancillary industry based on petro-chemical industry (Usar) and fertilizer industry (Thal-Vaishet)
24 Sudhagad
1) Groundnut oil  
2) Seasamum oil  
3) Hirda powder  
4) Shikekai powder  
5) Tanning materials  
6) Rice mills  
7) Clay images  
8) Plywood factory  
   Training of Plywood making.

25 Pen
1) Rice and Poha mills  
2) Ancillary industries  
   Training of the based on Thal-Vaishet particular ancillary fertiliser industry  
   industry.  
3) Dairy industry  
4) Poultry farm  
5) Brick making and stone cutting

26 Alibag
1) Fish meal  
2) Rice and Poha mills  
3) Coir and fibre making  
4) Scented supari  
5) Petro-chemical industry  
   All chemistry and engineering of petro-chemical industry.  
6) Manufacturing of school bags material  
7) manufacturing of  
   paper and plywood factory  
   Related training is required (high technology)
| 27 Khalapur | 1) Manufacturing of paper and paper board | Manufacturing of pulp and mechanization of paper production.  
|            | 2) Chemical industries. | Detailed chemistry and production of chemicals (high skill) 
|            | 3) Ayurvedic medicines | Plantation, and production of medicines. 
|            | 4) Plywood factory |  
| 28 Uran    | 1) Salt making | Training of salt making 
|            | 2) Petro-chemicals | Training of petro-chemical industry (high technology) 
|            | 3) Coir and fibre making | Use of machines. 
|            | 4) Ancillary industries based on Thal-Vaishet fertilizer board technology | Training of related technology 
| 29 Karjat  | 1) Manufacture of paper and paper board | Production of paper pulp and production of paper and board (high technology) 
|            | 2) Bamboo articles | Training of handicraft. 
|            | 3) Dairy | Training of health of dairy animals and dairy products. 
|            | 4) Pickle production | Preservation and production technique. 

**IV Thane District**

| 30 Shahapur | 1) Saw mill |  
| 31 Vada     | 1) Wooden furniture | Skill of carpentry 
|            | 2) Dairy industry | Detailed training about dairy animals and production of milk. 
|            | 3) Dairy industry | Detailed training about dairy animals and production of dairy products. 

- 27 Khalapur
- 28 Uran
- 29 Karjat
- 30 Shahapur
- 31 Vada

Manufacturing of paper and paper board: This area focuses on the production of paper and paperboard, involving the manufacturing of pulp and its mechanization in paper production. It also includes chemical industries, detailed chemistry and production of chemicals with high skill, and ayurvedic medicines. Plywood factory: Training is focused on the production of plywood. Salt making: Training is provided for the production of salt. Petro-chemicals: Training is offered in the petro-chemical industry with a high technology focus. Coir and fibre making: Use of machines is taught. Ancillary industries: Training is based on Thal-Vaishet fertilizer board technology. Manufacture of paper and paper board: Training in the production of paper pulp and its mechanization in paper production. Bamboo articles: Training in the production of bamboo articles. Dairy industry: Training in the health of dairy animals and dairy products. Pickle production: Preservation and production techniques are taught. Saw mill: Training in saw mill technology is available. Wooden furniture: Training in the skill of carpentry is provided. Dairy industry: Detailed training about dairy animals and production of dairy products is offered.
3) Saw mill
4) Wooden toys Skill of handycraft
32 Talasari 1) Dairy industry Dairy technology.

TECHNICAL DEVELOPMENT (Brief study of kudal Industrial Estate)

2.2.0 A study of Kudal Industrial Estate shows that there are in all 14 industrial units, (Table NO. 10.3) Engineering and chemical industries in the estate get their required raw material from outside the region. Besides most of the skilled workers have in-migrated from neighbouring regions. In the Kudal industrial estate the share of skilled workers among the total workers is about 71 per cent while the share of skilled workers among the total outside workers is 90.5 per cent (Table No.10.4). This statistics clearly shows that industrial units which are located in the Kudal industrial estate entirely depend upon skilled workers who come from outside the Sindhudurg district. Even most of the finished products of those industrial units have no local market.
TABLE NO. 10.3

PHYSICAL RESOURCES UTILIZATION IN THE KUDAL INDUSTRIAL ESTATE

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the Industrial</th>
<th>Resource Base</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>units and finished prod.</em></td>
<td>Local</td>
</tr>
<tr>
<td>1</td>
<td>M/s. W.G. Forge and Allied Industries-Forge Packaging Crank shaft</td>
<td>Wood</td>
</tr>
<tr>
<td>2</td>
<td>M/s. Nuchemo Plast Plastic sheet</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>M/s. P.N. Industries wood packing</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>M/s. Plastiscope Industries Polythene bags and sheets</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>M/s Maharashtra Cement Pipe co-cement pipes Sand stone metal</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>M/s. Radha Paper Industries Paper Files General Grass, Cotton waste rags</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>M/s. Rameshwar Aluminium Bhandi-Utensils</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>P.R.V. Chemicals-Metal (Photographic Chemical)</td>
<td>-</td>
</tr>
</tbody>
</table>
TABLE NO. 10.4

HUMAN RESOURCE UTILIZATION IN THE KUDAL INDUSTRIAL ESTATE

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Source of workers</th>
<th>Workers</th>
<th>Unskilled</th>
<th>Skilled</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Local workers</td>
<td></td>
<td>162</td>
<td>234</td>
<td>396</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(87.6)</td>
<td>(52.5)</td>
<td>(62.0)</td>
</tr>
<tr>
<td>2</td>
<td>No. of employees from Maharashtra but other than Sindhudurg district</td>
<td>15</td>
<td>137</td>
<td>152</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(8.1)</td>
<td>(30.2)</td>
<td>(23.8)</td>
</tr>
<tr>
<td>3</td>
<td>No. of employees from other states</td>
<td>8</td>
<td>83</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(4.3)</td>
<td>(18.3)</td>
<td>(14.2)</td>
</tr>
</tbody>
</table>

NOTE: Figures in brackets indicate the percentage of workers to grand total workers.
2.0.1 Study of the Kudal industrial estate reveals that only initiation of various industries in a region is not sufficient for the development of the region. The analysis of the Kudal industrial estate very clearly brings this situation to the light. The root cause for the failure lies in the wrong selection of industries. Majority industries do not depend upon the raw material of this Konkan region. Secondly, the local manpower is not given proper training oriented towards the new set up of the industries. As a result the sons of the soil have been deprived of their participation in the developmental efforts in their own region.

AGRICULTURAL DEVELOPMENT:

2.1.0 Agriculture is the main stay of economy of Konkan. Though the agricultural production and types of agriculture are traditional and backward, there is still more scope for increasing the agricultural production and agro-base industries within the existing situation of Konkan. For the purpose we have given some clues and suggested the needed research.

1. The most of the land of the region is undulating, hilly and rocky. The mango and cashew, orchards are grown on the hill slopes, where the grass is in abundance. As the land is not plain, the harvesting of
grass is a major problem. Moreover, the boulders hamper the operation of machinery on such slopes. The grass, if allowed to remain in the field, causes fire hazards. The labour scarcity due to low wages is another problem in harvesting the grasses. It is, therefore, required to design and develop grass harvestor, suitable for operation on hill slopes.

2. The conditions in the region e.g. on the hill slopes, the fallow land regions, newly cultivated forests etc. are ideally suited for grass land development. Evaluation of high yielding grass varieties, evaluation of different leguminous crops and selection of local strains of grasses having high nutritive value need immediate attention.

3. The soils of the region are porous and of latarctic origin. The low retention of moisture causes water stress during hot season to the plantation crops. The soil and water conservation practices already developed for other regions need to be tried and recommended for adaption.

4. In recent years the dairy and poultry farming have made rapid progress in north Konkan, while with slow speed progress is there mainly in south Konkan. The live stock is very high on account of unproductive animals. It is, therefore, required to increase the
number of reproductive and more milching animals, by proper planning.

5. The encouragement of the poultry activities in the zone, it is necessary to improve the quality of poultry birds, supply of quality birds, eggs and bird collection scheme, manufacture of poultry feed and other activities for poultry (including training to intreprenuers) need immediate attention.

6. Setting of veterinary aid centres and encouragement to manufacture of connected feeds need to be taken up on priority basis to boost up the production.

7. It was reported that the local variety of rice i.e. 'Valai' Produces yield as high as 60 quintals per heactor. It is suggested to check whether the variety has that much of yield potential under good cultivation practices so that the performance of high yielding improved varieties could be compared with it.

8. The possibility of cultivation of summer squash in the Konkan region should be explored.

9. In view of the irrigation potential generated in Konkan region renewed efforts need to be made for cultivation of citronella on hill slopes.

10. It is suggested to find out the possibility of
planting of Banyan and piple trees in view of their importance in maintaining ecological balance.

11. Government has made a very valuable effort for upliftment in agriculture sector e.g. low rate interest loans for agricultural development, free cost plant supply for plantation. Provision of high quality of seeds with low prize. Subsidy in the loans, economical aids for fertilizers and other development like irrigation electricity etc. Agricultural universities have also made very valuable researches in the Konkan. Still valuable researches are needed in the region. They are mentioned below.

a) Standardization of soft wood grafting technique for propagation of mango in nursery so as to maximise the production of grafts.

b) There is a good demand for mango pickles. It is, therefore, necessary to identify suitable pickle varieties and multiply them vegetatively.

c) At present mango trees grow to a great height and have a large spread. Hence spraying, harvesting etc. become very difficult. It is, therefore, necessary to develop a good tree architecture so that overhead management becomes easier, economical and at the same time production could be maximised.
d) In the konkan mainly to the coastal area loranthus is a serious plant parasite of mango. In view of this, a hook type (Akadi) device to remove loranthus may be developed. The research may be undertaken with widicides or chemicals of selective nature to control the loranthus without harming the mango tree.

e) Technology like trunk injection, soil application and designing, pesticide injective guns may be developed for application of insecticides to control internal pests and diseases of the tree crops. It was suggested to develop varieties resistant to major pests and diseases in the region. The screening of strains and identification of sporadic and endemic pests and their control measures need to be done.

f) About 5000 ha. area under rice in Sindhudurg district is under the local low yielding rice variety, which matures late in Kharif season and has short duration in rabi. A substitute improved variety needs to be evolved.

g) The rice varieties grown in other parts of the Konkan region do not thrive well in high altitude area with cold climatic conditions. Hence suitable cold tolerant varieties for such area need to be evolved.
h) About 15 per cent area under rice in Sindhudurg district comprises of 'Shel' soils (Water logged soils). A dibbler for rice sowing, suitable varieties and package of practices for such soils need to be developed.

i) The Nala Bunding technique followed so far is based on general recommendations, based on research work done elsewhere. Therefore, there is a need to take up studies on the design of the bunds, outlets and gradient under lateritic and non-lateritic soil Conditions of Konkan. The technique of "upstream barriers" is applied to the Appenine region of Italy. The same can be tried here.

2.2.1 In brief, as distribution of potential of resources vary from district to district and taluka to taluka, industries should be established by considering this along with market incentives.

2.2.2 At present technical education is not adequate in the Konkan region. That should be within the rich of common man. For this purpose attempts should be made by the Government to establish technical institutes in the Konkan region. This will create employment opportunities for the sons of soil of Konkan. Automatically there will be a check on out-migrations. Technical development will
open the door for investigations and utilization of local resources; which will help for regional development.

2.2.3 Agriculture is also main stay of economy of Konkan. Therefore, development in agriculture needs some new techniques and researches those are already described in this chapter. The development in agriculture will increase agricultural products. Due to increasing agricultural products, agrobased industries can develop the employment opportunity for local people.

2.2.4 It means the technical development, industrial development and agricultural development will develop the local resources which will have the positive relationship with human resource development of the region. The positive relationship between these two will lead towards regional transformation. The Konkan region which has been branded previously as 'problem region' or 'money-order economy' will become a developing region with greater land carrying capacity for population. The human exodus from these spatial units will be checked and the expected exercise of human resource development will be accomplished. As discussed in the opening paragraphs of this chapter, human resource development (HRD) is to be paid a very comprehensive attention in the entire framework of the Konkan comprising four districts (excluding Bombay).
2.2.5 It can, therefore, be said conclusively that the socio-economic and cultural transformation of the majestic land of Konkan is not a myth but reality. If we sincerely desire to give the deserving majestic glory to the land of Konkan, long term developmental planning as indicated in this final analysis is expected to be attained, the resource inventory is carefully done about these backloging talukas. Their potentiality, commoditywise for creation of finished goods is also demarcated and the training to be provided to the sons of soils is also guided. If a constructive efforts to match the human resources and physical resources is done then it would prove to be a very good spatial model for other problem regions also.
REFERENCES


5) DESHPANDE, C.D.1971 "Geography of Maharashtra, National Book Trust India, New Delhi, PP. 47-50,"


