Tradition and skill of the local artisans are the basis for some of the industries at work in Purulia. Some are dependent on locally available natural resources. Still some more have grown because of local demand. Present situation of a few of them have been discussed in the present chapter.

Forest-based Industries

(a) Lac Industry

Lac is the most important commercial crop in the tribal areas of the district of Purulia. Once famous for quality of product, it continues to be one of the main industries in the district. It is a valuable foreign exchange earner, but even of greater importance than foreign exchange earning is the role of lac as a means of subsidiary income for a large number of village agriculturists, chiefly of tribals.

Because of the unique nature of this industry and intimate association of the district Purulia with this industry an in-depth study of cultivation, production, marketing as also the problems of the industry in Purulia has been made. The industry is primarily export oriented and the very existence of the industry depends on successful exploitation of the world market. Hence, an attempt has been made to analyse the trend in current world production as well as consumption of this commodity. Merit and efficacy of promotional activities undertaken by various agencies have also been discussed.
PRODUCTION OF FOUR LAC CROPS
IN PURULIA

BAISAKHI  JETHWI  KATKI  AGHANI

72-73 (937 TONNES)  73-74 (1750 TONNES)  74-75 (2765 TONNES)

75-76 (2263 TONNES)  76-77 (2148 TONNES)  77-78 (1839 TONNES)
Lac is the resinous excretion of a species of insect called LACCIFER LACCA, generally known as the lac insect. The insect lives as a parasite feeding on the sap - juices of certain trees, which are, therefore, known as Lac hosts. Among the more important of these are PAIAS, KUSUM, BER and KHAIR. The insect starts life as a minute red-coloured larva just over half a millimeter in length. These larvae, which emerge in large numbers from the bodies of the mature female insects, are active and capable of crawling a considerable distance. The insects settle on the fresh shoots of these trees, and derive their sustenance from the sap of these trees. In order to ensure a maximum crop, lac host trees are pruned sometime prior to utilisation as hosts, so that they may provide as great a number as possible of long green succulent shoots on which the larvae may settle.

The Lac from which swarming is about to occur is known as 'broodlac'. The larvae are introduced to the host tree on which it is proposed to raise a lac crop by tying a number of sticks of broodlac to it; this is known as inoculation or infection. A few weeks after settlement of the larvae, the male insects emerge out of their small cells, fertilize the female and die. The females never leave their cells but continue to secrete lac; within their ovaries the eggs which will produce the young of the next generation develop.

Little or no attention is needed for the crop after the infection of the trees with broodlac. When mature, the crop is cut and a portion is kept apart to serve as broodlac for a future crop. The remaining portion, scrapped off from the twig is called 'stick lac'.

There are two distinct strains of the lac insect and they give four lac crops in the year; AGHANI (February-March) and JETHWI (June-July) crops from the Kusmi strains, and BAISAKHI (April-May) and KATKI (October-November) from Rangeeni strains. Baisakhi is...
the largest crop accounting for nearly 70% of the years' production but Kusmi variety which is golden yellow in colour and has a pleasant odour has got better export market. Production of these four varieties in Purulia are shown in Figure 18 (Table 36).

Table No 36: PRODUCTION OF FOUR LAC CROPS IN PURULIA (METRIC TONNES)

<table>
<thead>
<tr>
<th>Year</th>
<th>Baisakhi</th>
<th>Jethwi</th>
<th>Katki</th>
<th>Aghani</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972-73</td>
<td>713</td>
<td>-</td>
<td>168</td>
<td>56</td>
<td>937</td>
</tr>
<tr>
<td>1973-74</td>
<td>494</td>
<td>267</td>
<td>269</td>
<td>720</td>
<td>1,750</td>
</tr>
<tr>
<td>1974-75</td>
<td>883</td>
<td>783</td>
<td>468</td>
<td>631</td>
<td>2,765</td>
</tr>
<tr>
<td>1975-76</td>
<td>653</td>
<td>849</td>
<td>302</td>
<td>459</td>
<td>2,263</td>
</tr>
<tr>
<td>1976-77</td>
<td>465</td>
<td>1,020</td>
<td>382</td>
<td>281</td>
<td>2,148</td>
</tr>
<tr>
<td>1977-78</td>
<td>654</td>
<td>746</td>
<td>265</td>
<td>174</td>
<td>1,839</td>
</tr>
</tbody>
</table>

Source: Lac Development Office, Purulia.

Lac scrapped off the twigs, are crushed lightly. (Figure 19 shows a sticklac grinding machine) washed in water to remove the dead insect bodies, wood, sand, dye matter etc and dried in the open. Figure 20 is a picture of large floor used for drying of crushed sticklac after washing. It is obtained as an amber-coloured granular material called 'seedlac'.

Washing of ground sticklac to seedlac is carried out either manually in a series of vats or mechanically in washing barrels. Cement pots used by Ghasandars for cleaning of crushed sticklac is shown in Figure 21. Figure 22 shows a semi-mechanised sticklac washing machine. After repeated washing this is dried and winnowed to become seedlac. Dry sticklac usually contains 60-70 percent of the lac resin and 6-7 percent of lac wax, its moisture content varying from 3 to 5 percent. 'Kusmi' sticklac gives a higher yield of seedlac (68 percent) than 'Baisakhi' sticklac.

Cont'd...
Production of Shellac

From seedlac shellac is prepared both by hand as well as by machine.

Handmade Shellac:

For making hand-made shellac, sticklac is first crushed and served to remove sand and dust. It is then soaked in water in large vats. A labourer standing in the vat rubs the lac with his feet against the sides of the vat to break open the insect bodies, when the colouring matter in them dissolves in water. Wood pieces and insect remains which form a scum on the surface, are removed and the coloured water is drained out. This washing is repeated until the dye and most of the impurities are removed. Seedlac thus produced contains 85-92 percent of the lac resin, 4-6 percent of lac wax and 1-2 percent of moisture. Kusmi seedlac is golden yellow, has a pleasant odour and is larger in average grain size than palas or Ber seedlacs which are reddish brown.

For making different qualities of shellac several varieties of seedlac are carefully blended and filled into a narrow cloth bag about 30 inches long. One end of the bag is fixed to a chorki or wheel and rotated by labourers called 'Pherwaya'. The other end of the bag containing seedlac lies in the hand of Karigarh sitting in front of oval-shaped charcoal oven. Figure 23 shows a charcoal oven, often called VATA. The cloth bag is twisted in front of fire. The pressure thus exerted forces out the molten lac through the cloth leaving the impurities in the bag. The lac is collected by spatula and spread over the glazed porcelain cylinder which is filled up by hot water. The molten lac on the cylinder is made into a small sheet by the help of palm leaf called 'Nera'. This is then stretched into thin sheet with the help of hands feet and mouth by the labourer called 'Bhilsaya'. These lac flakes are called 'shellac'. When
the molten lac is made in the form of button by spreading over galvanized iron sheets, it is called 'Button Lac'.

Machine made Shellac:

For machine made shellac, two processes, viz the 'heat process' and the 'solvent extraction process' are employed to convert seedlac into 'shellac'.

The conversion of sticklac into seedlac is carried out in a series of mechanical operations. Sticklac is crushed and separated from the major portion of woody material in a plant consisting of a series of crushing rollers and sickles. The crushed lac is then transferred to washing barrels fitted with leather through which a stream of water passes. This removes the dye, the major component of water bodies. The washed lac is centrifuged to remove woody materials, insect remains and other impurities and then dried to obtain seedlac.

In the 'heat process' seedlac is charged into steam heated hydraulic presses, lined with cloth, and pure molten lac is pressed out. The molten lac, thus obtained is then stretched to the required thickness on roller and stretching machines. The sheets of shellac are then allowed to cool before storing in air-conditioned godowns.

The second process known as 'the solvent process' usually employs industrial alcohol for the manufacture of shellac. In this process, the seedlac is dissolved in alcohol, the solution is filtered through fine cloth and the alcohol distilled over. The subsequent processing of molten lac remaining in the still is the same as in the heat process. Garnet lac is prepared in this way from the darker fraction of lac.

(4)

Purulia as a Centre for Lac Production

According to available reports, the production of lac and development of the lac industry in West Bengal started in the district of Bankura for the first time. Later the industry developed in the
district of Purulia. Gradually cultivation of lac started in Midnapore, Murshidabad, Malda, Birbhum and some parts of West Dinajpur.

More than a hundred years ago one Shri Mahesh Chandra Banerjee an inhabitant of village Sonamukhi in the district of Bankura established a lac factory at his own village. Later he established another factory at Tuline in the district of Purulia. Subsequently, during the last days of the East India Company in 1885, two European gentlemen Martin Kenneth Angelo and Eliott Angelo established a Shellac factory at Cossipore to the north of Calcutta in the name of Angelo Brothers Ltd. This is now the biggest mechanised shellac producing factory in the World.

After about twentyfive years of the efforts of the late Mahesh Chandra Banerjee a few more enterpreneurs from Bankura came to Tuline and organised the lac industry there. Gradually Purulia became an important centre for the lac industry.

Initially, Jhalda, the second biggest centre for the lac industry at Purulia was a centre for raw lac. Even traders from Mirzapore in UP used to come to Jhalda for purchasing lac. In 1896, Mr Artoon Arathune, an American came to Jhalda from Mirzapore and established a Shellac Factory there. The factory established by him is still functioning at Jhalda. Jhalda at present is one of the biggest centres of the lac industry. However, the biggest centre of the lac industry in Purulia, may in India has developed at Balarampur, Purulia. The reason for concentration of lac industry in Balarampur is two fold (i) easy railway connection to the World's biggest marketing centre for lac and lac product, Calcutta and (ii) facilities to obtain abundant supplies of BAISAKHI lac from rich hinter-land in parts of Bankura, Purulia, and in the lac producing districts of Ranchi, Hazaribagh, Gaya, Palaman and parts of Orissa and MP.

Cont'd...103/-
WEST BENGAL
SHOWING AREAS OF LAC PRODUCTION
AND LOCATION OF LAC FACTORIES

REFERENCES
LAC GROWING AREAS
LOCATION OF LAC FACTORIES

BAY OF BENGAL
Except one in Bankura district and the other at Calcutta all the factories of the State are situated in Purulia district and most of the factories are organised in Cottage Industry Scale. Main Lac growing areas and location of Lac factories in West Bengal are shown in Fig. 24.

Production Trend of Lac in Purulia Vis-a-vis in India

Production of Lac is the resultant of two factors, namely, the insect and the host trees, both of which are completely dependent on climatic conditions. Although climates of almost all parts of West Bengal particularly the entire Western region and some parts of Northern region are favourable for lac cultivation, it is concentrated at present only in Purulia and Bankura districts. Table No 37 below shows statewise production of sticklac in India (Figure 25):

Table No 37 : STATEWISE PRODUCTION OF STICKLAC

<table>
<thead>
<tr>
<th>Year</th>
<th>Bihar</th>
<th>M.P.</th>
<th>W.B.</th>
<th>U.P.</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964-65</td>
<td>8,954</td>
<td>4,121</td>
<td>2,085</td>
<td>1,456</td>
<td>984</td>
<td>17,600</td>
</tr>
<tr>
<td>1965-66</td>
<td>11,999</td>
<td>5,916</td>
<td>2,408</td>
<td>2,053</td>
<td>1,100</td>
<td>23,476</td>
</tr>
<tr>
<td>1966-67</td>
<td>15,098</td>
<td>2,781</td>
<td>2,239</td>
<td>2,239</td>
<td>7,315</td>
<td>29,672</td>
</tr>
<tr>
<td>1967-68</td>
<td>22,898</td>
<td>7,204</td>
<td>3,900</td>
<td>2,239</td>
<td>2,538</td>
<td>38,779</td>
</tr>
<tr>
<td>1968-69</td>
<td>18,942</td>
<td>4,908</td>
<td>2,668</td>
<td>1,679</td>
<td>1,400</td>
<td>29,597</td>
</tr>
<tr>
<td>1969-70</td>
<td>15,426</td>
<td>5,001</td>
<td>2,389</td>
<td>1,642</td>
<td>1,284</td>
<td>25,742</td>
</tr>
<tr>
<td>1970-71</td>
<td>13,459</td>
<td>5,468</td>
<td>2,245</td>
<td>1,978</td>
<td>1,409</td>
<td>24,559</td>
</tr>
<tr>
<td>1971-72</td>
<td>16,208</td>
<td>6,304</td>
<td>2,148</td>
<td>1,344</td>
<td>1,208</td>
<td>27,212</td>
</tr>
<tr>
<td>1972-73</td>
<td>7,388</td>
<td>6,157</td>
<td>1,053</td>
<td>1,064</td>
<td>1,376</td>
<td>17,038</td>
</tr>
<tr>
<td>1973-74</td>
<td>9,464</td>
<td>5,020</td>
<td>1,900</td>
<td>1,866</td>
<td>1,009</td>
<td>19,259</td>
</tr>
<tr>
<td>1974-75</td>
<td>14,525</td>
<td>3,942</td>
<td>3,153</td>
<td>2,389</td>
<td>681</td>
<td>24,690</td>
</tr>
<tr>
<td>1975-76</td>
<td>13,852</td>
<td>3,818</td>
<td>2,547</td>
<td>1,060</td>
<td>489</td>
<td>21,766</td>
</tr>
<tr>
<td>1976-77</td>
<td>15,559</td>
<td>3,330</td>
<td>2,456</td>
<td>2,000</td>
<td>524</td>
<td>23,869</td>
</tr>
<tr>
<td>1977-78</td>
<td>13,790</td>
<td>3,223</td>
<td>2,194</td>
<td>1,250</td>
<td>442</td>
<td>20,899</td>
</tr>
</tbody>
</table>

Source: Shellac Export Promotion Council
STATE WISE PRODUCTION OF STICKLAC
Table No 38 below gives a comparative figure of production of sticklac in Purulia proper as against in whole of West Bengal and India :-

Table No 38: COMPARATIVE FIGURE OF PRODUCTION OF STICKLAC IN PURULIA/WEST BENGAL/INDIA

<table>
<thead>
<tr>
<th>Year</th>
<th>Production of Sticklac in Purulia (in metric tonnes)</th>
<th>% of Production compared to that of India</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Purulia</td>
</tr>
<tr>
<td>1959-60</td>
<td>5,906</td>
<td>12.7</td>
</tr>
<tr>
<td>1960-61</td>
<td>4,199</td>
<td>8.0</td>
</tr>
<tr>
<td>1961-62</td>
<td>3,636</td>
<td>9.4</td>
</tr>
<tr>
<td>1962-63</td>
<td>4,777</td>
<td>11.5</td>
</tr>
<tr>
<td>1963-64</td>
<td>3,601</td>
<td>12.5</td>
</tr>
<tr>
<td>1964-65</td>
<td>1,907</td>
<td>10.8</td>
</tr>
<tr>
<td>1965-66</td>
<td>2,034</td>
<td>8.6</td>
</tr>
<tr>
<td>1966-67</td>
<td>2,332</td>
<td>7.8</td>
</tr>
<tr>
<td>1967-68</td>
<td>3,452</td>
<td>8.9</td>
</tr>
<tr>
<td>1968-69</td>
<td>2,388</td>
<td>8.0</td>
</tr>
<tr>
<td>1969-70</td>
<td>2,146</td>
<td>8.3</td>
</tr>
<tr>
<td>1970-71</td>
<td>1,952</td>
<td>7.9</td>
</tr>
<tr>
<td>1971-72</td>
<td>1,821</td>
<td>6.7</td>
</tr>
<tr>
<td>1972-73</td>
<td>937</td>
<td>5.5</td>
</tr>
<tr>
<td>1973-74</td>
<td>1,750</td>
<td>9.1</td>
</tr>
<tr>
<td>1974-75</td>
<td>2,882</td>
<td>11.6</td>
</tr>
<tr>
<td>1975-76</td>
<td>2,267</td>
<td>10.4</td>
</tr>
<tr>
<td>1976-77</td>
<td>2,116</td>
<td>8.9</td>
</tr>
<tr>
<td>1977-78</td>
<td>1,821</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Source: Shellac Export Promotion Council

From the above two tables it may be seen that among the lac producing States Bihar, M.P., U.P and West Bengal together produce more than 90% of the quantity of lac produced in India. These four States also occupy respectively the first, second, fourth and third places in the production of lac in India.
PRODUCTION OF STICKLAC IN PURULIA

- - - - ACTUAL DATA

TREND VALUE (3-YEARLY MOVING AVERAGE)

TREND VALUE (LEAST SQUARE METHOD)

QUANTITY IN HUNDRED TONNES.
Production trend of sticklac in Purulia as indicated in Column 2 of Table No 38 shows a gradual decline over the last two decades. The trend can be clearly seen from figure 26 where actual data as well as 3-yearly moving average have been plotted. Trend value obtained from the above data by least square method shows a relationship

\[ Y_c = 2729.1 - 158.8X \]

Where \( Y_c \) = Production of sticklac in '00 tons and,
\( X \) = The year of production with 1968-69 as the base year.

West Bengal's production on the average of last ten years is about 9.83 percent to that of whole of India of which Purulia alone accounts for 8.51 percent. About 86.6 percent of the production of West Bengal on the average for the last ten years has been produced in Purulia.

Besides being one of the major centre for production of sticklac, Purulia has been developed as the biggest centre of the lac industry in India. Table No 39 gives the consumption of sticklac in different manufacturing centres in Purulia and India.

**Table No 39 : QUANTITY OF STICKLAC PROCESSED IN DIFFERENT FACTORIES**

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantity processed in Purulia</th>
<th>Quantity Processed in India</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970-71</td>
<td>7,703</td>
<td>15,461</td>
</tr>
<tr>
<td>1971-72</td>
<td>8,463</td>
<td>16,882</td>
</tr>
<tr>
<td>1972-73</td>
<td>4,978</td>
<td>10,291</td>
</tr>
<tr>
<td>1973-74</td>
<td>6,351</td>
<td>12,788</td>
</tr>
</tbody>
</table>

From the figures cited above, it is seen that about 50% of sticklac processed in India is consumed in the local factories in Purulia.
Economic Influence of Lac on Purulia

In West Bengal most of the sticklac produced is from homestead land in rural areas. The primary growers are mostly socially backward Adivasis. They generally own a few number of host plants in household areas or in some cases take them on lease or rental basis. Lac being a seasonal crop it requires only a part time family labour. When the Lac crop matures it fetches ready cash for the cultivators. In tribal areas of Purulia districts even today sticklac is found to be exchanged with the village grocers for food grains and other essential articles. It is estimated that the domestic economy of more than 20 thousand poor people of the district is bound with lac cultivation. The sticklac produced by these poor growers does not normally go directly to the factories. The producers depend upon the nearest available rural markets known as haats. The sticklac produced is handled in these haats which are the primary markets for sticklac. The bulk of the raw lack passes through smaller haat to bigger haat before it finally arrives the consuming end i.e. manufacturing units.

The agencies which figure in the marketing of sticklac in haats are the producers, paikars, dalals, brokers and agents of the factory owners. Because of the involvement of so many middlemen in marketing of sticklac, the primary growers get only a fraction of the ultimate price paid by the manufacturing units. Sometimes the price of sticklac comes down at such a low level that the cultivation of lac is felt to be uneconomical even though its cultivation does not require much expenses. Despair among the cultivators are sometimes so great that host trees are indiscriminately cut down with the result in many areas lac cultivation was temporarily abandoned.

Besides providing economic assistance to a large number of growers, lac, with its biggest concentration of industry in Purulia, has opened up full time employment opportunity to a large number of skilled...
and semiskilled workers in and around three main lac manufacturing centres of Purulia, namely, Jhalda, Tuline and Balarampur. Except one in Bankura district and the other at Calcutta, which incidentally is the World's largest mechanised lac factory, all the factories of the State are situated in Purulia district and most of the factories are organised in Cottage Industry Scale.

A recent study of about 122 small manufacturing units of seedlac/shellac was undertaken by Shellac Export Promotion Council. The units are in Balarampur, Jhalda and Tuline. Information was collected on individual unit's present condition in respect of investment pattern, capacity of production of seedlac/shellac, cost of production of seedlac/shellac, wage structure of the workers and problems and difficulties of the units etc. The units are comprised of mostly tiny cottage type including a few medium size industries. Capital investment is about Rs.20.04 lakhs and the working capital amounts to Rs.43.69 lakhs. Almost the entire sector is manufacturer of seedlac and handmade shellac. The processing units have necessary expertise and capacity of production is about 60 tons of seedlac and 27 tons of shellac per day.

These units cannot run their factories throughout the month because of irregular position of sale. Buffer stock operation introduced by STC provides them with periodic allotment but quantum of supplies allotted is very meagre. There is also considerable time lag between one allotment and the next.

The units offer employment opportunity to about 2500 labourers if they have got steady avenue of out flow of their product in the market. The availability of raw material is no problem. The units could pick up production to its rated capacity, but the need of the moment is generation of market. There are about 1650 workers on the
job manufacturing seedlac purely on temporary basis. No one can say if the worker, who is working today, will get a work the next day. Instability and uncertainty is looming large over the manufacturing condition in the market. On an average a male worker earns a maximum of Rs 5/- and a female worker Rs.3.50 per day. The industry is confronted with financial problems. The small manufacturers have got no adequate financial resources of their own. Credit facilities from financial institutions like bank are hardly available to them. Banks are shy to extend credit facilities to this industry where gambling (fatka) has a deep root from time immemorial causing wide fluctuation in price. The situation become extremely bad when, whatever meagre investment the units have made, it gets blocked in operational activities.

The table below will bear an idea about the market condition of small manufacturing units :-

Table No 40 : VITAL STATISTICS OF SMALL LAC MANUFACTURING UNITS

<table>
<thead>
<tr>
<th>Centre</th>
<th>Balarampur</th>
<th>Jhaldah</th>
<th>Tulin</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of units</td>
<td>78</td>
<td>11</td>
<td>33</td>
<td>122</td>
</tr>
<tr>
<td>Capital Investment(in Lakhs)</td>
<td>14.16</td>
<td>2.61</td>
<td>3.27</td>
<td>20.04</td>
</tr>
<tr>
<td>Capital ( in Lakhs )</td>
<td>22.56</td>
<td>7.20</td>
<td>13.93</td>
<td>43.69</td>
</tr>
<tr>
<td>Capacity of Production per day(in Quintals)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Seedlac</td>
<td>329</td>
<td>180</td>
<td>73</td>
<td>582</td>
</tr>
<tr>
<td>(b) Shellac</td>
<td>191</td>
<td>48</td>
<td>34</td>
<td>273</td>
</tr>
<tr>
<td>Average Cost of Production(per Md) in Rs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Seedlac</td>
<td>14.90</td>
<td>14.63</td>
<td>15.00</td>
<td>-</td>
</tr>
<tr>
<td>(b) Shellac</td>
<td>47.00</td>
<td>46.00</td>
<td>40.00</td>
<td>-</td>
</tr>
<tr>
<td>Average Wages per labour/day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Male</td>
<td>4.04</td>
<td>4.20</td>
<td>5.00</td>
<td>-</td>
</tr>
<tr>
<td>(b) Female</td>
<td>2.50</td>
<td>3.40</td>
<td>4.25</td>
<td>-</td>
</tr>
<tr>
<td>Employment Opportunity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Seedlac</td>
<td>995</td>
<td>240</td>
<td>421</td>
<td>1656</td>
</tr>
<tr>
<td>(b) Shellac</td>
<td>590</td>
<td>102</td>
<td>158</td>
<td>850</td>
</tr>
</tbody>
</table>

Cont'd...109
Export Trends of Lac

Lac is entirely an export oriented product and the existence of this industry is dependent on overseas market. 90 percent of the products are exported in the form of seedlac, buttonlac and shellac. During the post-war periods (1946-57) our annual foreign exchange earnings through this trade amounted to about 10 crores of rupees on an average occupying a fairly high position in the export list. Since then the export was in a declining state until 1971-72, whence from this trade foreign exchange earning is more despite decline in the quantity of export.

Table No 41: EXPORT OF LAC FROM INDIA

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantity in Kg</th>
<th>Value in Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1959-60</td>
<td>2,71,37,462</td>
<td>6,10,17,869</td>
</tr>
<tr>
<td>1960-61</td>
<td>2,73,57,812</td>
<td>6,31,94,128</td>
</tr>
<tr>
<td>1961-62</td>
<td>2,06,65,621</td>
<td>4,61,59,911</td>
</tr>
<tr>
<td>1962-63</td>
<td>2,08,22,239</td>
<td>4,79,60,134</td>
</tr>
<tr>
<td>1963-64</td>
<td>2,06,56,308</td>
<td>4,62,24,091</td>
</tr>
<tr>
<td>1964-65</td>
<td>1,72,31,517</td>
<td>4,17,42,538</td>
</tr>
<tr>
<td>1965-66</td>
<td>1,39,74,725</td>
<td>4,26,65,918</td>
</tr>
<tr>
<td>1966-67</td>
<td>1,56,54,381</td>
<td>5,46,55,521</td>
</tr>
<tr>
<td>1967-68</td>
<td>1,53,90,901</td>
<td>5,15,05,160</td>
</tr>
<tr>
<td>1968-69</td>
<td>1,77,13,644</td>
<td>5,02,96,475</td>
</tr>
<tr>
<td>1969-70</td>
<td>1,67,39,259</td>
<td>4,77,78,238</td>
</tr>
<tr>
<td>1970-71</td>
<td>1,33,82,558</td>
<td>5,02,71,681</td>
</tr>
<tr>
<td>1971-72</td>
<td>1,37,45,516</td>
<td>6,60,70,739</td>
</tr>
<tr>
<td>1972-73</td>
<td>75,63,580</td>
<td>6,18,52,561</td>
</tr>
<tr>
<td>1973-74</td>
<td>56,07,710</td>
<td>14,39,56,092</td>
</tr>
<tr>
<td>1974-75</td>
<td>73,31,869</td>
<td>24,32,77,405</td>
</tr>
<tr>
<td>1975-76</td>
<td>78,24,538</td>
<td>12,75,44,102</td>
</tr>
<tr>
<td>1976-77</td>
<td>70,91,786</td>
<td>9,75,63,351</td>
</tr>
<tr>
<td>1977-78</td>
<td>63,45,161</td>
<td>6,33,56,365</td>
</tr>
<tr>
<td>1978-79</td>
<td>92,64,000</td>
<td>8,36,80,000</td>
</tr>
</tbody>
</table>

Source: Shellac Export Promotion Council

Cont'd... 110
EXPORT OF LAC FROM INDIA

(QUANTITY)

- - - - ACTUAL DATA
- - - - - TREND VALUE (3-EARLY MOVING AVERAGE)

QUANTITY IN HUNDRED TONNES


59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79

FIGURE 27
Export trend of lac from India in quantity and in value have been depicted in figures 27 and 28 respectively. Like production, quantitywise export of lac from India shows a sharp decline over the past two decades. However, because of the rise in the unit value of export in foreign market after 1973-74 total foreign exchange earning from this commodity showed a somewhat upward trend.

Traditional importers of Indian lac are U.K., West Germany, USA and USSR. Quantum of export to these countries for the last few years are given in Table No 42 below:

Table No 42: QUANTUM OF EXPORT TO TRADITIONAL IMPORTERS OF INDIAN LAC

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1973-74</td>
<td>342</td>
<td>1.13</td>
<td>870</td>
<td>2.05</td>
<td>519</td>
<td>1.19</td>
<td>709</td>
<td>1.45</td>
</tr>
<tr>
<td>1974-75</td>
<td>1,556</td>
<td>5.58</td>
<td>658</td>
<td>2.02</td>
<td>691</td>
<td>1.95</td>
<td>596</td>
<td>1.63</td>
</tr>
<tr>
<td>1975-76</td>
<td>1,354</td>
<td>2.56</td>
<td>945</td>
<td>1.43</td>
<td>816</td>
<td>1.22</td>
<td>1,246</td>
<td>1.21</td>
</tr>
<tr>
<td>1976-77</td>
<td>762</td>
<td>1.01</td>
<td>824</td>
<td>1.07</td>
<td>918</td>
<td>1.17</td>
<td>536</td>
<td>0.72</td>
</tr>
<tr>
<td>1977-78</td>
<td>500</td>
<td>0.44</td>
<td>814</td>
<td>0.80</td>
<td>939</td>
<td>0.89</td>
<td>366</td>
<td>0.23</td>
</tr>
<tr>
<td>1978-79</td>
<td>1,450</td>
<td>1.27</td>
<td>893</td>
<td>0.80</td>
<td>1,466</td>
<td>1.35</td>
<td>949</td>
<td>0.58</td>
</tr>
</tbody>
</table>

Source: Shellac Export Promotion Council

A glance at the above table will reveal the trend of export to our traditional markets. During the period 1976-77 to 1977-78, export to U.S.S.R slumped to a very low level. Likewise export to West Germany also showed a downward trend. While in 1978-79 these two markets have more or less returned to their normal purchases, export to U.K and U.S.A remains almost static. But considering that not many years back they were each a buyer of 2000-3000 tons a year, one can hardly get comfort from the present maintenance of their quantum.

Cont'd...111
EXPORT OF LAC FROM INDIA

(VALUE)

FIGURE 28
An important development in lac trade is the revival of trade links with the People's Republic of China. It looks like that China wants to remain a significant buyer of Indian lac. Their purchases during the last two years were as under:

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantity in Tons</th>
<th>Value in Lakhs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978-79</td>
<td>879</td>
<td>77.61</td>
</tr>
<tr>
<td>1977-78</td>
<td>753</td>
<td>72.28</td>
</tr>
</tbody>
</table>

In addition to traditional markets, India has cultured stable markets in Singapore, Indonesia, Malaysia, and Iraq. Our export to countries popularly known as Latin America have remained static over the last few years. Potentially India can very much increase sales to these areas. The main and almost the overriding factor is our inability to ship regularly to these areas due to lack of sailings. It takes months before we can arrange delivery through transshipments. The buyers are never sure when our lac would reach them.

In the entire history of India's export of lac, the quantum had dropped to its lowest at 5,608 tons in 1973-74 even though the value-earning was high at Rs.14=40 crores. A record earning was made next year in 1974-75 at Rs.25.33 crores over a quantum of only 7,332 tons. The highest quantum of export was just before the second World War - in 1936-37 - when 42,368 tons of lac were exported to fetch a value of Rs.2.34 crores. Thus, over a century of voyage in overseas market, the lac trade has collected huge orders at a very low price and very low price and very small orders at a very high price. The new trend as reflected in 1978-79 steers clear of the two opposite tendencies.

Problems of Lac Industry

It is a common statement of the day that lac is a dying industry. In saying so the speakers probably bear evidence of their ignorance about the economics of the section of people responsible for cultivation of lac. With the lac trade is linked a million growers

Cont'd....112
(mostly Adivasis) 200 Cottage Units, 5,000 workers and a few hundred brokers and middlemen. The impact of the trade on a backward district like Purulia can very well be visualised when we consider that about 20 to 30 thousands of Adivasis and about 3,000 of workers of the district derive substantial economic benefit from this industry.

In spite of multiple problems of the industry and keen competition from synthetics, lac trade in India is able to earn Rs.15/20 crores worth of foreign exchange a year. This only speaks of its intrinsic versatility and capacity for adjustment with changing times. Given proper care and nourishment, the trade can even increase its market. The reason for rise in the unit value of lac over the years does not appear to be only due to short supply to fulfill the overseas demand but also due to greater use of shellac in a wide sphere of industries either in conjunction with synthetics or as an appropriate ingredient for all kinds of surface coatings or as important electrical insulators with the prospect of its use as a coating of food grains and many more new applications. Being one of the many natural resources of the country, lac can be very fruitfully utilised for gainful employment as well as a valuable foreign exchange earner.

There are a number of factors at work which are cutting at the root of the lac industry to which unfortunately the large number of traders, exporters and also the Government did not pay much heed.

One of the problems facing the industry is the competition from Thailand, the second biggest producer of sticklac and the only competitor of India with regard to lac. In fifties, the Government of India banned the import of lac from Thailand. Previously lac was imported from Thailand and then processed in India into Shellac and exported. When the imports from Thailand were banned, that country

Cont'd...113
had to find out its own markets and shellac processing factories came into existence there also in competition to Indian Industry. The Thai exporters have been successful in finding markets for their products abroad and Indian Shellac Industry had to face stiff competition from them. Thai lac cannot, however, be of alarming danger to Indian lac industry for one simple reason that Thai lac is much inferior to Indian lac in quality, and there is a growing demand for quality lac abroad. Thai lac being very cheap, minimum export price for Indian lac fixed by the Government needs rethinking in order to attract foreign buyers.

One of the main problem facing the industry is the threats from synthetics, which emerged as a competitor to shellac. Shellac possesses a valuable combination of several mechanical, thermal and electrical properties unequalled by any one synthetic resin. From alcoholic and alkaline solutions it produces smooth, flexible, decorative and durable films with excellent adhesion to a variety of surfaces. It is a powerful bond in thermoplastic applications and has excellent insulating properties. Few products have such wide and varied uses, and new uses are continually being developed, sometimes in conjunction with synthetic resins. But in spite of its varied qualities, foreign buyers are more and more going for synthetics because of uncertainty in the supply position of lac and its comparatively high cost. The exorbitant increase in prices and frequent fluctuations have been the main causes for the displacement of shellac in many of its fields of application because it is not possible for these shellac consuming industries to vary their prices each and everytime the shellac prices vary as they have to base their prices for a longer period on a fixed level.

Fixation of minimum export price is a vexed question faced by the industry. The step taken by the Government for fixing the minimum Export Prices was done in the interest of the protection of foreign
exchanged to be earned by our country. Judging from the reports re-
ceived from various agencies, it appears that to the international 
buyers the export price fixed by the Government is rather high with 
the result that apart from switching over to synthetic products as 
substitute, there is also a tendency to buy from countries other than 
India. The export achievement in terms of value is due to the high 
minimum export price fixed, which remained more or less rigid for quite 
sometime. The whole situation poses a basic question—should it be our 
objective to earn more foreign exchange through lesser quantum of 
export or to earn more through greater quantum? The solution lies 
in exporting more in terms of quantity at a unit price realistically 
related to synthetic substitutes and competitive lac from Thailand 
and in evolving a flexible pricing policy. It is heartening to note 
that the Government of India has evolved, in the beginning of the 
year 1979, a growth oriented policy which has an important aspect of 
fixing a floor price for export realistically determined based on the 
price of the raw material inside the country and relevant processing 
cost.

Another problem facing the industry as a whole is a competition 
between hand-made and machine-made shellacs. Except M/s Angelo Bros at 
Cossipore, near Calcutta and M/s S.S. Jayaswal (P) Ltd at Balarampur 
all other factories in West Bengal are hand-made shellac manufacturing 
factories. It is found that using same quality of raw material the 
shellac produced by hand-made process is superior in quality to shellac 
produced by machine-made process. Because of this hand-made shellac 
was more in demand in the overseas countries. But due to the neglect 
in modernising hand-made factories hand-made manufacturers have failed 
to provide uniform quality for their product. On the other hand, 
machine-made grades though not equal in quality to similar hand-made 
grades, showed a uniform standard and quality which the foreign buyers 
Cont'd...115
appreciate very much. Moreover, machine-made shellac has produced a variety of products for specific end use, according to particular specification. As a result of this, gradually the market for hand-made shellac has shrunken and the market for machine-made shellac has immensely enlarged. It is a fact that over the years many of the traditional users of hand-made shellac were and are still switching over to the machine-made shellac. It is also a fact that in certain applications machine-made shellac is a must because of its purity and guaranteed quality. But this steady decline in the demand for hand-made shellac has put in jeopardy the very livelihood of a good number of persons who are engaged in the industry. India is a poor country and it is also the declared policy of the Government to help the cottage industry. So a balance has to be struck between the two opposing factors so that while the country do not suffer in foreign exchange earning due to poor quality of the product, the specialised Cottage Industry should not be allowed to go into extinction. Some sort of subsidy may be granted by the Government to help people engaged in hand-made shellac. Producers of hand-made shellac have certain natural advantages. The overhead cost of production of machine-made shellac is much higher. Another factor is that producers of hand-made shellac employ seasonal labourers, but in machine-made factories labour force is employed on a permanent basis. These economic factors have to be kept in mind in formulation of any Government policy to help hand-made shellac industry.

The ruling market prices exert their natural influence on the output of lac. The rapid fluctuation in the prices of lac brings a setback in its production. Sometimes the price of sticklac comes down at such a low level that the cultivation of lac is felt to be uneconomical even though its cultivation does not require much
expenses. In the year 1961-62 there was a depression in the lac industry and this year Ranginee variety sticklac was sold at the rate of 0.25 - 0.30 paisa per Kg in the market. This low price which prevailed for quite a long time made the growers disinterested and the production of lac started decreasing. Many of the lac host trees were cut down and lac cultivation was temporarily abandoned in many areas. Neither the industry, nor the exporters nor the end consumers paid any attention to this problem. The resultant effect was shortfall in the quantum of export which was not due to shrinkage in overseas demand but due to shortage of sticklac, the raw material. This situation alarmed all attached to the trade and industry and ultimately made them realise that so long the primary growers mostly socially backward Adivasis had been deprived of a reasonable price, lac cultivation could not be improved. This realisation and some effective steps improved the situation considerably. The price index of sticklac in West Bengal for the few succeeding years as reflected in Table No 43 will bear testimony to this.

Table No 43 : AVERAGE PRICE OF STICKLAC

<table>
<thead>
<tr>
<th>Year</th>
<th>Average price of Sticklac (per quintal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970-71</td>
<td>Rs 75 to 125</td>
</tr>
<tr>
<td>1971-72</td>
<td>Rs 132 to 175</td>
</tr>
<tr>
<td>1972-73</td>
<td>Rs 250 to 550</td>
</tr>
<tr>
<td>1973-74</td>
<td>Rs 550 to 1550</td>
</tr>
<tr>
<td>1974-75</td>
<td>Rs 605 to 807</td>
</tr>
<tr>
<td>1975-76</td>
<td>Rs 375 to 465</td>
</tr>
<tr>
<td>1976-77</td>
<td>Rs 194 to 279</td>
</tr>
</tbody>
</table>

Source : Shellac Export Promotion Council

This somewhat favourable trend of price has encouraged the primary growers and they are gradually reviving lac cultivation. However, lac is primarily an export commodity and the trade is in the hands of a few industrialists. The primary growers are...
mercy of the traders and the industrialists who on the other hand are at the discretion of the foreign buyers. Unless the minimum prices of different varieties of sticklac are fixed in relation to the prices of seedlac and shellac in the internal market and that of minimum export prices in each of the harvesting seasons every year by some Government agency and the price is strictly ensured to the cultivators, the stability in the trade cannot enforced.

SteEs Towards Re-vitalisation of the Industry

Though world consumption of lac is showing gradual decline, because of its unique properties and great versatility there is considerable scope for improving the position of lac. If necessary assistance is provided, there is no reason to say that attempts for revival of the industry will prove futile. In so far as West Bengal is concerned, the contribution of Government for development of the industry is not very significant. Earlier, cultivation was looked after by the Agriculture Department of the State Government. It was only towards the end of the Second Five Year Plan that the problems of the lac industry were taken up by the Directorate of Cottage and Small Scale Industries. During the Fourth Plan period this Directorate introduced a scheme for setting up brood-lac farms to supply brood free to the cultivators. The Tribal Welfare Department of the State Government is also working a scheme for free supply of brood to the Adivasis. Compared to the magnitude of the problems, the measures are, however, insignificant. Government of India also sanctioned some centrally sponsored schemes for setting up brood-lac firms.

The Directorate has also set up an industrial centre for lac and training-cum-production centre at Balarampur. During the Third Plan period the scheme had an expansion alongwith setting up of a servicing centre.
The State Trading Corporation of India started its price support and buffer stock operation in January 1976. The emphasis is on ensuring a determined price to the lac growers through the State Agencies like West Bengal Small Industries Corporation, Bihar State Co-operative Lac Marketing Federation. Shellac Export Promotion Council has taken up the responsibility for weighment and quality check up of stocks delivered to STC.

The entry of S.T.C as a canalising body since June, 1975 has also streamlined the trade in lac to a considerable extent. Their buffer stock operation was done through State Government Agencies who in turn collected seedlac mostly through the manufacturing units. It was stipulated that sticklac would be purchased from the growers at Rs.3/- per Kg (50% Seedlac content). Seedlac buffer stock position for the last few years is shown below:

<table>
<thead>
<tr>
<th>Year</th>
<th>Balance from previous year</th>
<th>Receipt in Tons</th>
<th>Total Stock in Tons</th>
<th>Delivery in Tons</th>
<th>Balance in Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976-77</td>
<td>Nil</td>
<td>6,654</td>
<td>6,654</td>
<td>1,505</td>
<td>4,149</td>
</tr>
<tr>
<td>1977-78</td>
<td>4,149</td>
<td>6,300</td>
<td>10,449</td>
<td>3,794</td>
<td>6,655</td>
</tr>
<tr>
<td>1978-79</td>
<td>6,655</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

This buffer stock operation has to a reasonable extent ensured a minimum price to the primary growers. However, there are still many loophole in the trade. Buffer stock has also helped in meeting the overseas market demand in 1978-79 when internal lac crop suddenly showed a drastic drop in production.

Government has made it obligatory on the part of exporters of shellac to draw atleast 70% of the seedlac exported by them from the S.T.C release. The S.T.C price was, however, sometimes appreciably higher than that prevailing in the local market. Recently in the year 1978-79 the release price of seedlac from the buffer to the exporters under compulsory basis has been suitably modified so that overseas...
sales could be sustained at the floor prices fixed.

The trade being in the hands of few exporters only, many dishonest shippers are indulging in adulteration of supplies to foreign countries and even resorting to using false trade names and fictitious description as to grades. If this malpractice is not rooted out, this will not only lower the reputation and good name of India but also prejudicially affect the shellac trade. Government have recently vested Shellac Export Promotion Council with the responsibility of checking export prices, issuing price scrutiny slips as also of issuing quality certificates based on pre-shipment and post-shipment samples. Council have a number of laboratories for analysis of the samples. This system of quality control of shellac has improved the image of Indian shellac in overseas market considerably.

Despite advantages of synthetic substitutes with regards to right delivery, tailor-making to specification and better servicing, Lac has its own strength as a natural resin. In the past, the industry has survived challenges from competitive substitute products. In the present context, extensive research works are necessary for effecting diversification of Shellac products. Indian Lac Research Institute, Ranchi is already doing a good work. New uses are continually being developed, sometimes in conjunction with synthetic resins. Recently the Institute is concentrating on research on Lac-coated urea. Urea is now widely popular among the agricultural community of India. But it has certain limitations. The urea is readily soluble in water and evolution of nitrogen is comparatively fast. A coating of lac on urea eliminates this weakness. The success of this application will immensely increase the home consumption of lac.

Government should encourage setting up co-operatives of the farmers through whom only producers should get their raw material.
One of the great advantages of the system is that the growers will be paid good prices for the chain of middlemen now engaged in the process of ultimate purchase by the factories may be abolished. Much is talked of organising co-operatives from cultivation to marketing, but the activities in this direction have not been encouraging. Because of the poor performance of the schemes now working in the State, the efforts of the State Government are shy to adopt ambitious projects. The activities of the Lac Artisans Co-operative Society at Balarampur is not worthy of mention. The basic reason is paucity of funds either from the Government or from financing institutions. Though included in the programme for work of Khadi and Village Industries Commission, necessary assistance have not been forthcoming either for cultivation or for marketing.

Lac being an export oriented commodity, publicity in foreign countries on various uses of lac will help in increasing the base of its consumption. In this direction the efforts of Shellac Export Promotion Council is praise-worthy. The Council has a number of publications in many foreign languages on Lac to its credit. Besides it has participated in a big way in various international trade fairs.

(b) Tassar Industry

This is a very old industry of Purulia mainly concentrated at Raghunathpur and also spread in places like Purulia, Para and Neturia. It is reported that about 20 years back in Raghunathpur alone there were more than 200 looms and about 10 years back there were about 150 looms. A recent survey by State Statistical Bureau, Government of West Bengal shows that there are in all 68 establishments who are still pursuing this profession. The main reason for the gradual decline in this industry is stated to be the poor wage
rates, for which, the younger ones of weavers' families have been looking after alternative jobs.

**Items of Manufacture**

Working with ordinary looms and other accessories, the weavers prepare Tassar plane (12 yds x 36") Tassar Matka (12 yds x 36") Tassar Bapta (12 yds x 36") Tassar Kete (12 yds x 36") Tassar coating (16 yds x 36"), Tassar Dhuti, Sari, Silk Sartin, Silk Sari, Silk Matka etc.

Waste yarns obtained during the process of manufacture are, after some processing, turned into fabrics and constitute the by-product of the industry.

**Raw Material**

The main raw material of the industry is the Tassar Coconas, locally known as Guti, from which Tassar yarns are spun. Some 20/25 years back, Tassar cocoons were available from nearby Puncha forests. But now, the cocoons are imported from Chakradharpur, Chaibasa, Chakulia, Mayurbhanj and Giridih of Bihar. Main producers of these cocoons are Orissa, Bihar and M.P. previously weavers of West Bengal were getting cocoons from Orissa also. But to safeguard the interests of local weavers Orissa Government banned export of these cocoons outside the State with the result that the local weavers are getting the raw material at a cheaper rate. However, these are finding their way to the unrestricted markets of Bihar under cover and are being sold at a higher rate. One Kahan (1600 numbers) of cocoons which is available to weavers of Orissa at Rs.200 to Rs.250/- is being sold at Rs.250 to Rs.300/- in Bihar market. Cost price to West Bengal weavers comes to slightly higher than this.

Roughly one kahan of cocoon will give about 1-1/2 'than' (one 'than' is 12 yds x 36").
Besides purchasing cocoons from Bihar markets, weavers of Purulia also get these cocoons from Mahajans who supply these to the weavers at their doors and get the finished products from the weavers against what can be termed as wages. In fact, it is the Mahajans who practically control the supply of cocoons.

In order to help the local weavers to have regular supply of cocoons, Directorate of Cottage and Small Scale Industries, Government of West Bengal have started one Tassar Seed Station at Raghunathpur. The objective of the station is to distribute healthy cocoon seeds to the growers of Purulia areas like Hura, Puncha, Kashipur and Sadar, thereby helping indirectly the Tassar Weavers to get cocoons locally. These cocoons are reared in the forest to get the ripe cocoons for spinning the yarn. The seed supply station has four demonstration centres one each at (1) Kashipur, (2) Jabra (Hura PS) (3) Keshargaon (Hura PS) and (4) Raghunathpur. The supplies are, however, low to support the weavers' existing demand.

From reared cocoons local persons produce yarn in an indigenous process. The cocoons are put inside a pot, on the bottom of which, are kept straw and sal leaves, to protect the cocoons from being burnt. A quantity of 4 'Pan' (320) is than boiled in water mixed with needed soda for a period of about 3 to 3-1/2 hours. The cocoons are then cooled in water. The 'Katni (spineer) then spins yarn from these water soaked cocoons using bamboo spindles. Yarns mostly spun by the female workers.

Besides cocoons, the weavers also purchase silk and matka yarns either from the local market or from the Mahajans. The yarns incidentally come mostly from the silk and matka dealers of Malda and Murshidabad Districts.

Cont'd...123
Structure of the Industry

In Raghunathpur, which is the main concentration of the industry, there are in all 68 establishments engaged in Tassar weaving. The establishments can be divided into two principal categories:

i) Independent establishments which purchase their own raw materials and sell finished products independently.

ii) Auxiliary units that receive raw materials from Mahajans or organisations operating as 'Dadandars' and supply finished products against what can be termed as wages.

There are nine units of the former and 59 units of the later category. This is a real village scale industry providing employment to all members of the family.

The tools and implements required for weaving are traditional hand loom and shuttles and for reeling and spinning, some very simple wooden spinning wheels and bobbins are necessary. The industry is not yet mechanised. Not a single power loom could be seen in any of the establishments. One of the reasons is that the weavers do not get sufficient raw materials to keep themselves fully utilised. Lack of adequate capital also stands in the way of purchasing all the raw materials a weaver requires. Unless there is a significant improvement in the supply of raw material and money for purchase, shifting over to power loom or any other form of mechanisation cannot be envisaged.

With the Tassar weaver working in the loom, the other subsidiary jobs are being done by the family members so that the skill flows from generation to generation. No special training is imparted to the artisans for the craft. About 95 percent of the total
TASSAR INDUSTRY

(a) AVERAGE RAW MATERIAL CONSUMPTION: 1. COCOONS

<table>
<thead>
<tr>
<th>INDEPENDENT UNIT</th>
<th>AUXILIARY UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN KAHANS</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>15</td>
<td>10</td>
</tr>
</tbody>
</table>

(b) AVERAGE VALUE OF FIXED ASSETS PER UNIT:

<table>
<thead>
<tr>
<th>LAND &amp; BLDG.</th>
<th>TOOLS</th>
<th>MACHINERY</th>
<th>FURNITURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN RUPEES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>100</td>
<td>200</td>
<td>300</td>
</tr>
</tbody>
</table>

FIGURE 29
number of establishments in Purulia are run entirely by the family labour. Hardly 1% of the total cost of production is spent on hired labour.

The artisans, who manufacture, do not generally dye, print or bleach their wares and are not in contact with the market in most cases.

Thus the auxiliary units or contact labour which constitute more than 75% of the number of establishments, make over their products to Mahajans, who supply them raw materials, and the Mahajans in their turn bleach, print or dye the cloth and sell them in different markets.

**Economics of the Industry**

The industry does not have a firm financial footing. The earnings of an weaver from the industry is not sufficient to maintain his family.

(9) State Statistical Bureau, Government of West Bengal carried out a survey on various economic aspects of the industry.

The survey revealed that the total value of the assets per establishment in Raghunathpur comes to around Rs.700/-. In majority of the establishments assets do not exceed Rs.1,000/-. Average break up of the assets of a few establishments given in Table No 44 is represented in Figure 29.

| Table No 44 : AVERAGE VALUE OF FIXED ASSETS PER UNIT IN TASSAR INDUSTRY |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| Land and Buildings | Machinery | Tools | Furniture | Total |
| Rs.550.00 | Rs.28.00 | Rs.85.00 | Rs.5.00 | Rs.668.00 |

This shows that the main asset of the industry is the land and building which in all the cases is the household of the weaver himself.

Cont'd...125
A major share of the total productive capital employed per establishment has been invested in the form of fixed assets.

Raw material consumption by the establishments as surveyed by the Bureau gives the following statistics (Figure 29):

Table No 45: AVERAGE RAW MATERIAL CONSUMPTION IN TASSAR INDUSTRY

<table>
<thead>
<tr>
<th>Type of Unit</th>
<th>Silk Yarn (Seer)</th>
<th>Matka Yarn (Seer)</th>
<th>Cocoons (Kahans)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent</td>
<td>0.65</td>
<td>17.28</td>
<td>28.84</td>
</tr>
<tr>
<td>Auxiliary</td>
<td>0.40</td>
<td>21.10</td>
<td>20.56</td>
</tr>
</tbody>
</table>

Average value of the basic material consumed by the establishments is around Rs.1,650/-. Taking all cost items into consideration average cost of production is around Rs.1,700/-. Raw materials constitute the major item of cost and is about 90 percent of the total expenditure. Break up of costs under different heading for units in Purulia is as under:

- Average Annual cost on account of hired labour ... Rs. 26.67
- Average Annual cost on account of casual labour ... Rs. 1.66
- Work done through others ... Rs. 22.33
- Raw Materials ... Rs. 1,645.17
- Fuel and Light ... Rs. 10.00
- Repairing Charges ... Rs. 5.22

---

Rs.1,711.05

Monthly income of the weavers engaged in the industry is roughly Rs.350/- to Rs.400/- per family of four. Agriculture, though the prime occupation of the district, does not appear to be a significant source of income for the families engaged in this activity. About 85% of the families do not have land for cultivation.

Cont'd...126
Co-operative Activity

Weavers of Raghunathpur have formed a Co-operative registered under the name 'Singhbazar Resham Shilpi Samabay Samity Ltd'. The Society was formed in the year 1958 and is functioning still today. It has in its roll 52 members who are the share-holders of the Society. The Society has six members in the Board of Director, including its Chairman and Vice-chairman. These are the elective posts. Besides, the Society has one Secretary and one Manager, both paid, to run the office.

As compared to the Co-operatives operating in other industries in Purulia, this weavers' Co-operative at Raghunathpur appears to be functioning rather satisfactorily. Society buys cocoons, silk and matka yarns from the local market as well as from outside. These are given to the members based on their requirements on cash payment. The Society buys back the finished product from the weavers. Sell price of the raw materials and purchase price of the finished product is decided by the Board of Director of the Society.

Prices of the raw material as well as finished product show considerable fluctuation during the year. This puts considerable strain on the weavers. Besides, because of very poor financial standing, these weavers become easy prey to the Mahajans. During the lean season the weavers are forced to sell their product to the Mahajans at a very marginal profit. Also, the looms cannot be utilised to their full capacity round the year. Formation of the Society has considerably eased these problems. Any price fluctuation is cushioned by the Society from its own resources so that the weavers enjoy the benefit of more or less a uniform price throughout the year. Society also helps the weaver members to overcome the onslaught of the lean business season by stockpiling...
the product during this period. Resources of the society are, however, limited.

Marketing of the product is entirely done by the Society. Society transactions are mainly restricted to Government Sales Agencies. Pricing is done through negotiations. Usually the Society keeps a profit margin of 10 to 15 percent over the manufacturing cost. The functioning of the Society was found to be so beneficial to the members that they voluntarily refrained from withdrawing their dividend so as to build up a substantial capital for the Society. Unfortunately, however, because of the firm grip of the Mahajans over the weavers in general, quite a good number of artisans are still outside the perview of the Society.

Market

Quality silk products of Purulia has its markets in Calcutta, Bombay, Madras, Delhi, Patna, Bhagalpur as also in the neighbouring districts of Burdwan, Nadia etc. Silken turbans from Purulia are reported to be popular in faraway Kabul also.

The product is marketed principally in three different ways. The independent units sell away their wares directly in the local wholesale market from where through middlemen, these find their way into Calcutta, Bombay and other places. The units which obtain their raw materials from the Mahajans have to sell most of their products back to them and in return get some wage rates. The third form of sale is through Government agencies. A number of organisations under the State Government are now marketing the handloom products of the weavers of West Bengal. The main aim of these organisations is to save the weavers from the extreme form of exploitation. Pashchim Banga Resham Shilpi Samabaya Mahasangha Ltd., Handloom House, Tantuj, Khadi Gramodyaga Bhavan etc are some of the organisations who buy
products either from the Society or from the wholesale market and market them through their sales counters located at various places of the country. They also export a good quantity of silken wares. It is because of the sales promotion activities of these organisations silk has considerably gained in popularity.

Problems

Weaving establishments spoke of difficulty about supply of raw materials, that is silken yarns and cocoons. For all practical purposes a seller's market operates here, thanks to the activities of the big Mahajans. Purchase of co-coons in a co-operative basis in season time, when cocoons are available in plenty might remove a long felt difficulty. Efforts of Raghunathpur Tassar Seed Station to provide reared cocoons locally have not proved to be adequate. Crash programme for extensive culture of these seeds in the nearby forests of Hura, Puncha, Kashipore etc needs to be undertaken.

Another hinderance to the industry is the shortage of working capital for purchase of raw materials and storing of finished products. For lack of adequate capital the units cannot always purchase all the raw materials they require and naturally they cannot utilise their full capacity. Survey revealed that in Purulia only 62% of its capacity was being utilised. With improved supply of raw materials and money for purchasing them, the artisans could increase their production considerably. There is also good scope for modernisation of the industry. In South all the handlooms are being extensively converted into powerlooms with improved productivity and reduced cost of production. A similar thinking may improve the lot of Purulia weavers considerably. Government policies, however, need to be suitably amended so that the benefits enjoyed by the handloom industries are not withdrawn once they switch over.
to powerlooms. It appears that the main source of financial assistance for the weavers is the Mahajan. State Government should come forward in a more effective way to help these artisans. Local banks should undertake survey to find out how far their assistance might help in revitalizing silk-weaving (as well as sericultural activities) in the blocks of Raghunathpur, Kashipur, Puncha and Hura.

The product has very good market in all important trade centres of India as well as in quite a few important cities abroad. In spite of this, the full utilisation of these markets has not yet been done by the weaver entrepreneurs due to lack of information as well as suitable organisation. A major portion of the product is sold in the wholesale market as well as through Mahajans. Cost price of a product in the ultimate market is considerably higher than in the artisans’ cottage but a lion’s share of this margin is enjoyed by the middlemen or the Mahajans depriving the poor artisans of their honest due. It is perhaps high time that a State-owned marketing organisation is set up to improve the sales by exploring new markets abroad and utilising the national market fully.

With about 4,000 artisans engaged in the profession, various Government Organisations, Financial Institutions and other private and public bodies need to co-ordinate their activities for the betterment of these people.

(c) Bidi Industry

From the point of view of employment the unorganised industries play a significant role in the economy of the districts of West Bengal. Among the unorganised industries which employ a large number of workers, Bidi Industry occupies a prime position in the State. In fact in whole of India, bidi-making is an important source of income for the poorer rural households. A recent Inter-
National Labour Organisation survey estimated that about 3 million workers are now employed in the bidi industry in India. The same survey estimated that about Rs.340/- crores worth of bidis are produced annually but only about Rs.120/- crore goes to the bidi workers as wages.

In Purulia District also bidi making is one of the most important small scale industries. It is the largest single industry in Purulia from the point of view of local employment. Its concentration is mainly in Jhalda P.S. though this industry can be found in all the Police Stations in varying scale. As per 1961 census there are in all 323 registered industries in the District, of which 206 are located in the Jhalda P.S alone. Para, Purulia and Raghunathpur account for 29, 28 & 27 respectively. Registered employment in this industry is estimated to be roughly about 20,000 but as the District Industrial Officer explained the total number of people actually engaged in this industry is many times more; this is because many of the proprietors do not employ regular labour but get the job done by contract labours to avoid taxes and other complications. In fact, as indicated by the Block Development Officer of Jhalda I & II Block, about 30,000 workers (about 20% of the total population) is engaged in this industry in Jhalda alone.

One of the specialities of this industry is that a large number of women are employed in it. Women all over rural area support themselves and their families by making bidis as a part-time work. And, in fact, as the number of unemployed women wanting to make bidis exceeds the demand for workers the contractors, who act as a go-between the workers and the big businessmen hold the complete control over the industry. The workers are rarely paid more than equivalent of half the statutory minimum wage.
since this is almost impossible to enforce.

The industry grew up in the Jhalda because the P.S. is ideally located near the bidi markets of Bihar such as Ranchi, Dhanbad and Bokaro and the sources of supply for the raw materials. The regions good road and rail connections with Calcutta gave it a good access to the tobacco and kendu growing areas of the country. The availability of cheap labour, and the potentiality to transport to the markets in adjoining districts provided added incentive.

Production Process

Manufacturing of bidi is an extremely simple process. Tobacco has to be rolled into the kendu leaf (which is cut to the appropriate size). The bidi is then tied with a piece of string and heated in ovens. The fixed investment required would consist of two small godowns to store the tobacco and kendu packaging and despatch. It is, therefore, one of these industries which offer opportunities for employment with least overhead costs. The nature of the industry is such that even a oneman factory could survive provided some arrangement exists for marketing the product.

The basic raw material required for production are tobacco, kendu and yarn. For both tobacco and kendu leaf the larger companies have their agents in the areas where they grow and as such the purchase of the raw materials directly for the large companies becomes easier. For tobacco the major areas of cultivation are Sangli in Maharastra (for the superior Nepani variety) and Gujrat. The tobacco is blended before being sent to producing centre.

For kendu leaf, the large companies have licenses from the Government of Bihar and M.P to purchase the leaf directly from the agents appointed by the States. In Orissa following the nationalisation of the kendu leaf trade, the leaf has to be purchased from the agency of the Government.
MAJOR ITEMS OF EXPENDITURE IN BIDI INDUSTRY.

PERCENTAGE OF SALE PRICE

- TOBACCO (33.3)
- KENDU LEAF (25.0)
- LABOUR (28.2)
- CONTRACTOR (2.8)
- YARN & MISC. (2.0)
- PROFIT (8.7)
The smaller Companies have no independent source of supply. They purchase the kendu leaf mostly from the larger Companies.

Once the raw materials arrive at the centres, production is carried out in three stages, first the contractors collect the tobacco, the kendu leaf and the yarn from the Companies and distribute them among the workers. Most of the workers belong to the same locality as the contractor. So the contractor takes charge of the raw materials and distributes them in the interior rural areas. The next stage consists of the actual rolling of the bidis by the workers. The kendu leaf is cut to size and the tobacco filled into it. The rolled bidi is tied with a piece of string. On an average a worker can roll 1000 bidis per day.

The third stage consists of collecting the bidis by the contractors and delivering them at the Company's factory where they are dried, heated and packed. Bidis which are not considered up to the minimum standard (either because of less quantity of tobacco or because rolling has not been satisfactory) are rejected. The workers receive no payment for the rejected bidis.

The packed bidis are despatched to the Company's agents in different marketing, centres for sale. The large Companies have their own distribution system.

On the basis of informations available from the Jhalda B.D.O and local merchants, the following break-up of the expenditure is arrived at:

Table No 46: MAJOR ITEMS OF EXPENDITURE IN BIDI INDUSTRY

<table>
<thead>
<tr>
<th>Item</th>
<th>% of value of output</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Tobacco</td>
<td>33.3</td>
</tr>
<tr>
<td>b) Kendu leaf</td>
<td>25.0</td>
</tr>
<tr>
<td>c) Labour</td>
<td>28.2 (for rolling and packing)</td>
</tr>
</tbody>
</table>

Cont'd...133
<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>d) Contractor System</td>
<td>2.8%</td>
</tr>
<tr>
<td>e) Yarn freight charges</td>
<td>1.4%</td>
</tr>
<tr>
<td>f) Yarn</td>
<td>0.4%</td>
</tr>
<tr>
<td>g) Miscellaneous</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>91.3%</td>
</tr>
</tbody>
</table>

Thus net profit comes out to 8.7%. The major items of expenditure has been depicted in Figure 30. Number of bidis produced per day is about 4 crores. Price of bidis in the wholesale market is Rs.8/- per thousand bidis.

If we take into account the fact that the larger companies have their own distribution system, the profit margin would go up. Though the exact production of the district is not known a modest estimate as gathered from the B.D.Os as well as local big merchants, place the net profit to about Rs.1,75,000/- per day. Out of this huge sum there is hardly any ploughing back into the industry to improve the living conditions or the working conditions of the workers.

**Organisational Set-up**

The bidi industry is characterised by a 'three tier' relationship involving the bidi Company, the contractors and the workers.

The bidi Companies are dominated by a few giant Companies. The larger Companies have factories in many States and have almost a complete stranglehold over the industry. They have control over the industry from the raw materials stage to the marketing of the final product.

The smaller Companies are, generally, dependent on the larger Companies. These smaller Companies are usually a one man affair in which the owner could also be working as a contractor for the large Companies. Their products are generally of an inferior variety and sold locally or in the adjacent market. The owner acts as the

Cont'd...134
contractor as well as the producer. Although theoretically this industry offers maximum opportunities for the small entrepreneurs, in practice they are not able to make much head way in a market controlled by a few large companies. In fact they offer no competition to the big companies as their production is restricted to inferior brands. They have no institutional source of finance.

Next comes the contractors. This group forms a peculiar intermediary class at two stages of production viz when the bidi is to be rolled and when it is to be packed. The contractors in the former operation are the major group. They are usually from the land owning class belonging to the particular village or area where they operate. In fact the contractor-worker relationship is identical with the agrarian relationship of the village; the land owner becomes the contractor, the landless becomes the bidi worker. It is, therefore, not surprising that all the evils of the agrarian system are reflected in the bidi industry.

The contractor system offers some direct advantages to the bidi companies. These are:

(a) as the large companies consist mainly of outsiders (Marwaris), this system offers an effective method of control in an industry where the workers are all in the rural areas living in the traditional Agrarian Society. This system utilises the existing agrarian structure (with minimum of dislocation and disturbance) for commercial ends.

(b) the companies are freed from all direct responsibility for the welfare of the workers. On paper their workers would consist of only their office staff. Neither the factories act is applicable to those companies nor are they to give the workers any bonus etc. It is, therefore, cont'd.. 135
no wonder that this contractor system is the universal feature of the Bidi Industry in India. On an average, the contractors earn a profit of 2.5% of the total value of production.

Thus the companies and contractors between themselves apportion 11.2% of the total value of production. Considering the total value of production, this works out to be a huge sum. It is strange that inspite of this huge sum there is no measure to improve the lot of the workers. Though the workers are slowly trying to organise themselves and put up a united point, due to the 'three tier' system operating, the welfare of the workers turn out to be nobody's baby. The companies assert that they are not responsible while the contractors state they are only middlemen.

Thus the workers are in a peculiar position. Though they are to get 28% of the value of output as wages, in actual practice their economic distress combined with the 'three tier' system makes it difficult for them to ensure that this wage is maintained.

The landless labourers are far too many for employment in agriculture. The bidi industry provides the sole alternative means of livelihood. The contractors, being the well-to-do in the village, represent the same type of local relationship as they would have between the landlords and landless labourers. We have the usual rural picture of almost an unlimited supply of labour. The grinding poverty would make them accept less than the prevalent wages. If there are any protests, the contractor has to merely cut off the supply of tobacco and kendu. Naturally, Trade Unions fail to achieve result.
It is quite apparent that the 'three tier' organisation has led to a number of malpractices. The workers are mostly paid wages lower than that fixed by the Government. When this is brought to the notice of the companies they claim ignorance on the plea that they have given the contractors money at the stipulated rate. The contractors, however, deny paying less. Another problem is the arbitrary rejection. Even good bidis are known to be rejected and then sold by the companies at normal rate thus depriving the workers their due. Another problem with the industry is that the bidi companies close down without notice when market conditions are slack or when pressure is brought on them to improve the conditions of the workers. All the companies threaten to shift their activities to neighbouring district of Bihar when pressed.

**Remedies**

To plough back a larger share of the profit for the welfare of the workers the contractor system should be abolished forthwith. In its place all the present contractors should be made employees of the company. This measure would involve no extra expenditure for the companies but would make them directly responsible for the welfare of the workers. The small companies should be given access to some institutional sources of finance so that they can more effectively compete with larger companies.

Another dire necessity for saving these poor labourers from worst forms of exploitation is establishment of Co-operatives. The I.L.O study suggests that in an Industry so highly labour-intensive and technically simple, the only way that workers could improve their lot is by organisation. The Co-operatives may provide better condition of work for its employees and may engage in a healthy competition with the established companies. But there are problems.

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The workers are in no position to contribute their share capital. As they are largely illiterate they cannot manage the Co-operative effectively. Moreover, as bidi is a consumer goods the market condition need to be carefully watched and publicity has to be given. For this appointment of professional managers may be necessary. The Co-operatives will need to make arrangements for its supply of tobacco, kendra and yarn. As tobacco and yarn markets are controlled by the big bidi companies, Government may have to step in to ensure steady supply of raw materials.

Production can no doubt be easily carried out. But is profitability depends on whether there is a market for the product. The big bidi companies control the market completely. With their superior resources as they may put up strong competition, the Co-operatives would need strong Government support.

It deserves mentioning that bidi industry is a labour intensive small scale industry, ideally suited for the small entrepreneur. It is, however, strange that the market is dominated by a few big businessmen.

The small entrepreneurs who belong to the particular locality may be given ample opportunity to have their proper share in the industry. The procedure of manufacture is simple. The industry does not require big investment and the industry is ideally suited to the rural areas. In view of the above, bidi industry seems to provide, with a proper organisation, a partial answer to the problems of unemployment and under-employment in rural areas of Purulia.

Internal consumption of bidi, a poor man's cigarette, is quite huge. Besides, India is exporting bidi. Though the market is presently restricted to neighbouring countries, but this is being now extended further to include the USA and Europe. Quantities ex-
ported are still limited but are likely to increase and give new
dimension to the industry.

However, the higher returns from expanding export markets will
not benefit the workers until they can secure control over production
and ensure equitable distribution of the increased profits.

(d) Basket Making

About 5,600 persons, mainly from the Dome Community, manufacture
baskets. Basket making is a traditional craft mainly of the Schedule
Caste and tribe. This basket-making is a prominent craft among a
large number of tribal population which provides reasonable employment
to them. Attempt should be made to give much importance on these trade
as well as on the injection of new trades among them.

The State Government has a scheme for the development of this
industry. This craft will be further developed through training,
diversification etc. and new training-cum-production centre for some
allied craft which will be easily accepted by the tribal people will
have to be introduced.

(e) Saw Mills and Furniture Making Units

This industry is forest based. There are about 20 Saw Mills in
the district with the larger concentrations at Purulia and Raghunathpur
town. Most of these sell sized timbers and a few make furniture
also to meet the local demand. The production of furniture in the
district could not be exactly estimated because these are mainly
manufactured by carpenters, scattered all over the district. Saw
Mills are not capable of meeting the home demand, hence adjoining
district Ranchi is the regular supplier of sized timber.
Skill-based Industries

(a) Hand tools, carpentry tools and cutlery industry

Purulia has earned a good reputation for quality manufacturing of hand tools and cutlery items. Such tools are used very widely by carpenters, masons, plumbers, fitters, motor mechanics, blacksmiths, goldsmiths, by various industrial workers as also in various household works. These include hammers of various types, files, scrappers, pliers, spanners, screw drivers, punches, chisels of various types, wrenches, tongs, augers etc.

Historical Background

There is some historical background for the growth of hand tool industry in Purulia. According to knowledgeable people of the locality, some 300 to 400 years ago, a group of people belonging to Karmakar community migrated from various places of Bihar and settled at Jhalda. Long before the manufacture of steel on modern lines by the TISCO at Jamshedpur about 110 Km from Jhalda, the Karmakars used to collect iron-ore from the Bansa Pahar, about 4 Km from Jhalda Town and smelted it with wood charcoal in small crucibles on a cottage industry basis and got high class iron directly. Besides making various iron implements for day-to-day use, these Karmakars earned a reputation for making swords and guns. The fact that no licence was required to manufacture guns and swords quickened the growth of the smithy trade. The Santhal Revolution of 1855-57 was a welcome stimulus.

According to Shri TD KARMAKAR, B.Sc(Patna), B.Met(Sheffield), a well-known person of Jhalda, now a resident of Purulia Town, even in the current century, the Swadeshi Movement in this country with its frequent outbursts of terrorism marked an important stage in the growth and development of the Jhalda Smithy industry. Blanket ban...
on the manufacture of guns and swords by the British resulted in widespread unemployment and misery. Although cutlery as a sideline was all the time being produced, it could not, in the absence of an adequate market, take the place of guns and swords either in the volume of production or value. To stave off starvation, the community had to think out new lines of production and this much-needed diversification was introduced in 1928. Shri KARMAKAR, who went to England for training purposes, developed a simple process for manufacturing augers, a carpentry tool with the limited resources available in the area. He started organising the traditional blacksmiths and gave them training in the process, practically going to their villages. Chisels, pruning knives, augers bloomed in demand all over India. During World War II there was a vacuum in the supply of carpentry tools, specially augers and auger bits, from England. Shri KARMAKAR took this opportunity and made three camps, one at Purulia proper and others at Jhalda and Tanasi for the manufacture of augers and other carpentry tools. He adopted the system of giving raw materials to the blacksmiths and those blacksmiths used to forge the auger in required shape. Those forged tools were collected by him and were heat treated, ground and finished for marketing.

In course of time gradually more units came up and as a result Purulia proper and Jhalda have become famous for cutlery and carpentry tools.

Technique of Manufacture

Cutlery, carpentry and other hand tools are manufactured in a crude but simple process.

An auger can be divided into three parts viz handle portion, body and cutting edge. Handle and body are made of mild steel scrap and cutting edge which is of spiral shape, is made of 0.5% to 0.6% carbon steel. Except body, for which mild steel rods are used, other materials are used.
are not available in proper dimensions and shape. It is for the artisans to forge down all possible varieties of steel scraps available in the market to the desired shape and finish and this results in huge wastage of energy and labour.

To make a spiral portion scrap materials are shaped in the form of flats by hand forging process. It is interesting to note that the artisans depend mostly on their own skill, individual judgement and innovated tools. A tool named 'chengi' is used by the craftsmen for giving a definite twist to the cutting edge of the auger. Total number of twists required to be given to the product, turns per inch etc are simply controlled by the craftsman himself by eye estimation only without the aid of any other tools. Front threaded tips are made by filling. The three parts are then forge welded.

Besides forging, other main operations involved in the hand tools and cutlery industry are 'grinding' and 'filling', heat treatment and finishing. For grinding and polishing the forged articles three systems are prevalent in the area: (1) some artisans follow the traditional methods which require the use of indigenous tools (2) some units use grinding and polishing wheels and (3) some others get their blades ground and polished in separate polishing units.

The forged items are given a heat treatment which consists of two operations, namely, hardening and tempering. The experience, care and skill of the artisans are the essential qualities for controlling the temperature for hardening and tempering without the aid of any instrument. Some articles, particularly the costly ones, are given a peacock coloured glaze. This is done by dipping the articles in hot charcoal ash and closely watching the colour every two seconds by removing those from hot ash.

Regarding the technique of manufacture, there appears no recent change of tradition. The technique followed, say 50 years back, is...
still followed. Since from the remote past, the technique is handed over from father to son there seems to have little scope for learning better method of manufacture. None of the cutlery units is found to use power, either from oil or electricity. Some of the carpentry tools manufacturing units, which are more paying, have, however, installed oil-engine in their workshops and are producing standard quality carpentry tools.

Raw Materials

Proper raw materials are not available to the units for manufacturing tools. Most of the units are using scrap materials in the form of leaf-spring of railways and other vehicles, axels, forged scrap materials of spade from TISCO, railway rails etc available in the open market. Most of the scraps available are not in the convenient shape for further processing and this increases cost of production and reduces productivity by increasing additional labour to bring them in proper shape.

Many units do not have the knowledge of using appropriate composition of raw materials. It is because of inadequate knowledge regarding many important aspects of the tools such as toughness of the materials, cutting efficiency of the tools, their shock absorbing capacity and ability to retain cutting edge, the artisans are not particular about the composition of the raw material. Moreover, they do not have much option left as they have to buy whatever is available in the local market. To obtain quality grade raw material from Calcutta market a good amount in transportation has to be paid besides higher price of the material itself. Resultant higher cost of production makes it very difficult to sell the product in the highly competitive market.

Cont'd...
Training of the Artisans

No arrangement exists for the organised training of artisans in the technique of manufacture. While assisting his father, brother or uncle in the Workshop, a karmakar boy learns the techniques and in due course takes his due place in it, or he may start his own workshop. The trade is hereditary with the Karmakars. But this is not so with others who have also been inducted into this industry. They learn the trade as they work as helpers in the smithies of Karmakars. Later they set up their own workshop.

Items of Production

The general items of production are Auger, Farmer's Chisel, Bevel Chisel, Prunning Knife, Butchers Knife, Cut Plane, Auger bit, Rose bit, Carpenters bit, Betel-nut Crackers, Vegetable Cutters, ordinary cutters, hunters and sword stocks etc. Some of the units are producing cutlery items only while others are concentrating on carpentry and other hand tools. There are, however, some mixed units which are producing hand tools, carpentry tools as well as cutlery items.

(11)

Economy of the Industry

The industry is mainly concentrated in Jhalda P.S and Purulia proper. A recent survey by Purulia Industries Centre shows that there are about 70 Smithies in Jhalda of which about 30 are engaged in making cutlery articles and the rest in the carpentry tools such as augers, chisels and others. Two establishments in Jhalda town - The Jhalda Karmakar Co-operative Society and the Eastern Cutlery and Tool Manufacturing (P) Ltd - are important cutlery dealers.

Key statistics on the number of organised units in Purulia proper for the last few years are given in table No 47.

Cont'd...144
Table No 47: KEY STATISTICS OF ORGANISED HAND TOOL INDUSTRY

<table>
<thead>
<tr>
<th></th>
<th>1972-73</th>
<th>1973-74</th>
<th>1974-75</th>
<th>1975-76</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of units</td>
<td>22</td>
<td>24</td>
<td>27</td>
<td>30</td>
</tr>
<tr>
<td>Installed Capacity (Rs in lakhs)</td>
<td>34.54</td>
<td>35.49</td>
<td>35.63</td>
<td>36.25</td>
</tr>
<tr>
<td>Production (Rs in lakhs)</td>
<td>24.54</td>
<td>18.45</td>
<td>27.94</td>
<td>29.54</td>
</tr>
<tr>
<td>Investment in m/c and equipment (Rs in lakhs)</td>
<td>2.30</td>
<td>2.40</td>
<td>2.75</td>
<td>3.20</td>
</tr>
<tr>
<td>Working Capital (Rs in lakhs)</td>
<td>8.50</td>
<td>9.00</td>
<td>12.00</td>
<td>13.02</td>
</tr>
<tr>
<td>Employment (Nos)</td>
<td>400</td>
<td>402</td>
<td>410</td>
<td>417</td>
</tr>
<tr>
<td>Percentage of capacity utilisation</td>
<td>70.5</td>
<td>51.4</td>
<td>77.4</td>
<td>80.6</td>
</tr>
</tbody>
</table>

It will be seen in the above table (Figure No 31) that during last four years the total number of organised units has increased from 22 in 1972-73 to 30 in 1975-76. Production also has increased from Rs 24.54 lakhs to Rs 29.54 lakhs during the same period, an increase of 21%, although there had been a shortfall in 1973-74 when the total production reached the minimum at Rs 18.45 lakhs. This was due to the fact that the cost of raw materials was very high in the open market and no quota was available from the controlled market. Investment and employment have also increased substantially.

Besides the above mentioned 30 numbers of organised units there are a good number of small units which are run by the artisans themselves with one or two members of their own family as helpers. There are about 10 to 12 units who employ more than 5 persons in their

Cont'd...145
workshop. Some of these units are M/s Purulia Engineering Works (Proprietor: Shri Jugol Kishore Karmakar), M/s Popular Cutlery and Co (Prop. Shri Gour Ch. Karmakar), M/s N.C. Karmakar & Co (Shri NC Karmakar), M/s Pioneer Tool Manufacturing Co (Prop. Shri Gopal Chandra Karmakar), M/s Presidency Edge Tools Co (Prop. B.P. Singh Deo), M/s B.K. Karmakar & Sons (Prop Shri B Karmakar).

Almost all the units buy raw materials on retail basis in the open market. Bulk purchase is not possible for most of the units due to paucity of funds. Cash purchase is the usual practice.

After raw materials, the wage of labour is next item of importance for the industry. Except the wage of the helper engaged by the artisan no expense due to labour is involved. The usual wage rate for a helper is Rs 2.50 to Rs 3.00 per day of 8 working hours. An expert artisan is not usually employed in others Workshop.

Other factors which contribute to the cost of production are the rent of the Workshop, repairs, purchase and depreciation of tools, incidental charges for marketing, interest on loan etc. Most of the units do not spend any money for paying direct rent to a separate landlord, because of the fact that the owner of the house is the craftsman himself. Either a portion of the residential house is converted into workshop or it is built within the area of his homestead land. Purchase, repair and depreciation of tools also cost very little.

The artisans do not usually take loans from the Mahajans. In the peak period, they are sometimes given some advance for purchase of raw materials by the paikars (wholesale middlemen) against some specific orders placed with the artisans.

Cont'd...146
Of the cutlery and carpentry tool making units, cutlery industry is, at present, one of diminishing importance since the general trend is towards the manufacture of augers, chisels and other carpentry tools as according to the artisans, the latter is more paying. A sample survey conducted by the Census Directorate of West Bengal showed that output-input ratio in a cutlery industry varies, depending on main items of production, between 1.22 to 1.45 whereas the figure is considerably higher in the carpentry tool industry. Besides, carpentry tool industry has a well established wide market and in many cases the manufacturers sell their produce directly to the ultimate consumer getting better return. In comparison, cutlery industry has a restricted and more localised market. Moreover, principal buyers of the product are the paikars with the result, that a significant share of the profit is eaten away by these middlemen depriving the poor artisans.

Average monthly income of an artisan who is the owner of a workshop and at the same time himself a craftsman is about Rs.250/- to Rs.300/-. In the absence of any subsidiary source of income, the manufacture of cutlery, handtools and carpentry tools is the primary occupation of most of these artisans. With a few exceptions, the artisans do not possess any agricultural or other landed properties. Most artisans live a hand to mouth existence. With meagre earnings from the sale of daily produce, the major portion of which is essential for the purchase of daily house hold necessities, an artisan can set aside only a small portion of his income for the purchase of raw materials required for next days productions.

There are, however, some trading-cum-manufacturing units who are acting as middlemen - craftsmen. Besides producing in their own workshop, they supply raw materials to the primary forging units and get their requirement of forged materials from time to time. They are also bagging orders from outside agency houses, distributing
the orders to different primary units and supplying the finished materials and cashing a good margin of profit in the process.

Standard and Quality of the Product

Undoubtedly the workmanship of these traditional artisans is of very high order. Most of the artisans are still using the same primitive method of manufacture which their ancestors used to follow. The typical characteristics of our village folk - aversion to any change, may it be good, is very active in the minds of the craftsmen here too. Inspite of this, the finished products made by the master-craftsmen of the locality have found market all over India and even outside.

Even though, given the correct grade raw material a master-craftsman can turn out the best in the market, average quality of the product is rather sub-standard. There are several reasons for this. Since these artisans are using scraps as raw materials they are not aware of composition of materials. They do not also bother for the composition. Except a few units, none is having proper machinery and equipment. Most of the units are using back-dated technology. 95% of the units are not having any proper heat treatment furnace and testing facilities. Only M/s Pioneer Tools Manufacturing Co., M/s Presidency Edge Tools Co., and M/s B. Karmakar & Sons were found to have hardness testing facilities. Even those who have heat treatment furnaces do not use them. These are kept as show pieces for securing orders. The reason for not utilising the furnaces is that they do not have sufficient production which can feed the furnace regularly.

Most of the units do not have quality control arrangement. Neither they are serious about it. Only a few units are found to follow Indian Standard, British Standard and Indian Railway Standards.
They usually execute Government Orders. Rest are not following any standard and specification as they are very small in size and are not very conversant with the specifications. In fact they cannot afford to make arrangement for quality marking under the Government Schemes.

Some units are found to manufacture two qualities of the same product one of which is of standard quality which they sell under their own brand name and the other without any guarantee about the quality which is sold without any brand name. Obviously the price of standard quality product is higher than that of the commercial quality.

**Market Characteristics**

(a) Domestic: Present consumption of hand tools in the State of West Bengal per year in terms of value is estimated to be about Rs.16 lakhs. The rest of the production is sold in the markets of Assam, Bihar, Orissa, Delhi, Punjab, Tamil Nadu, Kerala, Rajasthan and Maharastra etc. The main buyers of the product are Railways, Defence and other Government Departments, large and small scale industries, repairing and servicing workshops.

Calcutta is the main market and distribution centre in the State. Besides Calcutta, the district towns also are distribution centres in the State. Though a few large units sell their products directly, mostly the sale is done through touring agents who secure orders from all over India and tools are supplied against order. In all these cases, the distribution channel is direct, the touring agents getting their percentage of commission which varies from 15% to 20%. However, there are some paikars or middlemen who come from distant places like Bihar, UP and place orders with the artisans who supply articles according to their specifications and requirements. Cutlery items of Jhalda are mostly sold through these paikars. Sometimes a paikar makes an advance of some money to the artisans for Cont'd...
purchase of raw materials which may be required for the supply of his order. Since the primary buyers of cutlery items i.e. the paikars purchase most of their produce, the artisans have little knowledge of the ultimate consumer of their articles, the places where these are sold, the exact profit made by these people. It is, however, gathered that the paikars sell these products to different fairs and melas spreading all over West Bengal, Bihar and UP. They usually make a profit of about 30 to 50 percent on these articles.

Products are sold under different brand names such as Hen, Hilsa, Daw, Monkey, Horse, Arrow, Usha, Eye, Lotus etc. Smaller units are not able to market their product directly under their own brand name. Their products are purchased by some organised units at nominal price, giving a very low margin of profit. Some dealers are directly purchasing finished products from Purulia and putting their own stamps selling them as their own product.

Units are facing competition among themselves, because of overcrowding of units for manufacturing a common item. Many of the artisans have the ability to produce quality tools, but due to lack of knowledge and limited resources they are not able to market the products directly. The industry is in a most disorganised state. No centralised agency is in operation in the region which can effectively channelise the products of the small units.

In Jhalda, Jhalda Karmakar Co-operative Society Ltd was established in the year 1947, under Bihar Orissa Co-operative Societies Act of 1935. With the transfer of Purulia to West Bengal in 1956, the Co-operative Society came under the Government of West Bengal. The aims and objectives of the Society are:

1) to establish workshop on Co-operative basis to produce improved types of carpentry tools and cutlery by the members of the Society and arrange for sale.
ii) to procure essential raw materials and the tools required,

iii) to revive the name and fame of the craftsmen and to improve their social, educational and economic conditions,

iv) to grant loan to the members for implementation of the above.

With the industrial loan from Purulia Central Bank Ltd., and Directorate of Industries Government of West Bengal, the Society purchased raw materials from Calcutta and local market from time to time and advanced the same to the artisan members. The wages were paid to them after finished products were received at the Societies disposal. The Society appointed agents for sale of products in Calcutta and outside markets. The system continued for few years and the Society earned a good reputation for the products.

Later, some members were seen not to turn up with their finished products after receiving the raw materials from the Society. The defaulting members began to sell goods elsewhere at a higher profit. Moreover, artisans engaged in carpentry tool making were found to get preference over their brother artisans engaged in cutlery industry because of greater demand of the former items. This preferential treatment and the mismanagement in general led the Society to a crisis. Ultimately the Society ceased to function.

In recent years there was an attempt to revive the Co-operative activities and two bodies under the name Jhalda Hand tools Artisans Industrial Co-operative Society and Purulia Small Tool Manufacturers Association at Jhalda and Purulia respectively were registered but both of them met with the same fate.
It is worthwhile to analyse the reasons for repeated failure of Co-operative activities. The Societies were controlled by the artisans who did not have much knowledge on effective management. Besides, as the Societies had no control on the trade of products, the member units individually took the advantage of independent transaction. It is very necessary that precautions should be taken while formulating the working programme of assistance in the shape of supplies of raw material and loan, when already, even though unfavourable in many respects there are very strong traditional rings of alternative arrangement in similar lines of trade controlled by the middlemen of the localities and those coming from outside.

(b) Export: Some of the organised units engaged in manufacturing hand tools are exporting a portion of their products to Malaysia, Bangladesh, Mauritius, Thailand, Australia, Bangkok and U.S.A.

Export made by the units for the last four year (compiled by District Industries Centre, Purulia) as under:

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972-73</td>
<td>Rs. 33,500.00</td>
</tr>
<tr>
<td>1973-74</td>
<td>Rs. 20,000.00</td>
</tr>
<tr>
<td>1974-75</td>
<td>Rs. 40,000.00</td>
</tr>
<tr>
<td>1975-76</td>
<td>Rs. 63,000.00</td>
</tr>
</tbody>
</table>

Units are getting enquiries from Middle East and African countries for the export of handtools. All these show that there are good potentialities for exporting hand-tools in the developed as well as developing countries.

Future of the Industry

As of date, the industry is in a highly disorganised State.
The artisans are being exploited by the Mahajans and middlemen. With increased cost of living, they can hardly earn enough necessary for bare subsistence. This is causing frustration among the artisans. Already quite a good number of them have given up their caste profession. However, other people have stepped in keeping the employment position more or less fixed in the recent years.

The industry is using most back dated techniques for the manufacture of the product. With the existing tools possessed by the units, it is doubtful whether their production may rise enormously even if there be heavy demand. Capacity utilisation in the hand tools industry as shown in Table No 47 is quite high being as high as 80% in 1975-76. This is due to the fact that the installed capacity is mainly based on manpower engaged in the industry and not on machinery as in other industries. In the present state, only by engaging more helper, the annual production may be increased to a limited extent. Further scope for additional employment in these units seems to be little unless modernisation is resorted to. This entails introduction of more mechanisation in terms of production toolings, use of electricity, quality grade of raw materials and standardisation through scientific methods. For this the artisans needs to be motivated. Government agencies promoting cottage type industries have an important role to play in this sphere. Besides, modernisation means more investment, which, the artisans with their present state of financial condition are incapable of. So the financial institutions in collaboration with District Industries Centre should work out detailed schemes to provide financial assistance as also assistance to the trained artisans in the form of supply of improved tools and equipments at subsidised rates.

As has been discussed earlier, the product has a good market. The product being labour intensive, it has got a good market potential
even in developed countries. But one essential pre-requisite for maintaining the goodwill and to expand the market is to produce sustained quality goods. The artisans of Purulia are highly skilled and are capable of producing the best even with their primitive tools. The only determining factor which is responsible for the deteriorating quality is the use of non-standard raw materials. This is a very important aspect which must be taken care of by the promoters of the industry. A material bank by some Government Agencies from which the artisans can draw their material at a liberal term will be a good solution of the problem. Detailed schemes need to be worked out carefully so that, while rendering necessary assistance to the artisans, the programme takes care not to succumb to the same fate as that by the Co-operatives ventured earlier.

Obviously the future of the industry depends on its expanding market. At present, it is the individual entrepreneur who finds his own market. Most of the units being too small, it is not possible for them explore and establish new market and have to be content with the traditional markets only. Only a few large units engage touring agents and some sale is executed through the middlemen. In the later case, it is the middlemen who eat away the major share of the profit leaving only marginal benefit for the poor artisans, who are the prime movers in the industry. If this state of affair is allowed to continue for long, it will badly affect the development of the industry and it may so happen that the artisans may become extinct after another 10 to 15 years. Probably because the yield from the land in Purulia is so low and there is hardly any scope for earning from other sources, these artisans are sticking to their traditional profession even though the return is barely sufficient for subsistence. Purulia has good prospect for industrial development.
With other avenues of employment opening up, this traditional industry of Purulia is likely to face its doom unless serious effort is made to expand its market. Since individual effort is not enough, some form of a Co-operative with active participation of the artisans and managerial expertise from outside can do a lot of good to the industry. Lesson from the earlier experience must be utilised to plug the loop holes of such a venture.

(b) Paper Mache and Mask Making

There are about 50 cottage type units for mask making in the rural areas of Purulia district. Their main products are various types of masks made out of paper mache which are used as decorative items and at the time of folk dance during festivals.

Mask making is the only worth mentioning craft of Purulia. The mask making units in Purulia district with more than a hundred workers are localised at Dormodi (under Garjaipur Post Office) of Jaipur Police Station and Chorida village in Bagmundi Police Station.

The products of the three units (with 11 artisans) at Dormodi and 44 units (with 130 workers) at Chorida consist of masks for chhow dance dramas and mythological figures. The forty families of mask-makers who live only two miles away from Bagmundi in a village named Chorida were settled there by the Rajas of Bagmundi. After their adoption of Hinduism the Rajas who were local tribal chiefs claimed their descendants from the Rajputs and in order to worship Hindu Gods and Goddesses settled some families of image makers from the interior of West Bengal. Land was donated to them in exchange of making images of different Gods and Goddesses during their annual ceremonial worship by the Rajas of Bagmundi. It seems that
originally the artists were settled over the area for making clay images of Hindu Gods and Goddesses. The artists adopted the art of mask-making probably from some traditional local source now lost. Otherwise masks of this nature and mask dances of this character are nowhere met with in any other part of Bengal.

The cost-price relationship of the products of the mask-making industry may be understood in terms of Table No 48.

Table No 48 : COST-PRICE RELATION IN MASK-MAKING INDUSTRY OF PURULIA DISTRICT

<table>
<thead>
<tr>
<th>Product</th>
<th>Inputs used</th>
<th>Time Required</th>
<th>Cost excluding Selling Labour Charges Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mask-Surpanakha</td>
<td>Paper/cloth, nakha paste, resin, dye</td>
<td>5 days for 3 pieces</td>
<td>Rs. 1.88 Rs. 5.00</td>
</tr>
<tr>
<td>Mask-Mahadeva</td>
<td>do</td>
<td>8 days for each piece</td>
<td>Rs. 7.00 &quot; 25.00</td>
</tr>
<tr>
<td>Mask-Ranga</td>
<td>do</td>
<td>-</td>
<td>Re. 0.93 &quot; 3.00</td>
</tr>
<tr>
<td>Mask-Ghatotkotch</td>
<td>do</td>
<td>-</td>
<td>Rs. 2.93 &quot; 4.00</td>
</tr>
</tbody>
</table>

Mask-making industry is not found to be in a state of prosperity as evident from the decrease in the village income. But it has got a good export market. At present some amount of these products are being exported abroad. The industry can provide a good scope for expansion with diversification by manufacturing utility articles like pen holders, flower vase and other utility and decorative items with better design. Like other village industries, mask producers have no control in marketing and, therefore, they are deprived of major share of the profit earned by the industry.

Mineral Based Industry

(a) Brass and Bell metal Industry

The industry is one of the age old traditional type which is
located at Purulia proper, Gopalnagar (Manbazar), Buglidi (Puncha), Kashipore and Raghunathpur.

(12) Structure of the Industry

Various systems of ownership are found to be working in the industry based on which the industry can be classified into different categories.

In some industries the owner himself is the worker. Mostly these are household industries having a low installed capacity. More than one family member is engaged in the industry. Based on the need and market demand, sometimes the owner employs outside workers on daily wage basis.

Some owners of industries are not workers themselves. They employ outside skilled workers and get the work done by them. Like owner-cum-worker type industries, they usually purchase the raw materials and sell the finished product in the open market. The employers pay the wages to the workers engaged by them and bear all the manufacturing expenses such as raw material, coke, coal etc.

A different version of these employers are those who are attached to a particular or more than one Mahajans. These Mahajans are in most cases the shop-owners. The employer has its own workshop but gets his raw material from the Mahajan either against cash or in credit. He sells his finished product to the Mahajan only.

A fourth type of ownership is that where the Mahajans themselves are the owners of the industry. Here the Mahajans are the shop-owners and also manufacturers of items of utensil with the help of workers directly employed by them.

Like all other traditional industries of Purulia, brass and bell metal industry also is dominated by the Mahajans. It is the shop-owner/Mahajan who controls the production as well as pricing of
the industry. He supplies the employer under him the requisite amount of raw materials and specifies and directs him to manufacture such items as are required by him in consideration of the demand of the market and of his selling capacity. The independent workers also produce such items that would be saleable in the market. The shop-owner/ Mahajan restricts the production by supplying limited quantity of raw materials; so also the independent employers restrict the production keeping in view their selling capacity and finance they can invest. As the Mahajans or the employers carry out the manufacturing process mostly by employing outside workers, it cannot be designated as family business in the strict sense of the term.

The workshops are mostly of primitive type. The sheds are mostly made of galvanised iron sheets or tiles in the lawn of the domestic houses of the employers or in a place adjacent to them.

**Raw Materials**

Basic raw materials of the industry are copper, zinc and tin. While copper and zinc are available in the country in a limited quantity, tin, a very costly commodity, is entirely an imported item. Most of the industries buy only a small quantity of these materials in virgin state. In general, the Mahajans procure broken utensil from households and supply these to the employers for remelting and manufacturing of utensil. There are people who collect these utensil from door to door and sell their days collection either to the Mahajans or in the local market. The raw materials are thus recycled in the industry bringing down production cost to a certain extent.

**Items of Manufacture**

Most of the units are engaged in the manufacture of brass and bell metal utensil of various sorts, mostly for domestic purposes. Some of the units are making bowels of different sizes and shapes.
few have specialised in making decorative items and special items required during festivals and worshipping.

Economics of the Industry

The district has nearly 1,000 brass and bell-metal industry units manufacturing various commodities. The total employment involved in the industry is approximately 1500 persons. Quite of good number of these units are small owner-cum-worker type involving family members only. Such families with their inherited skill can produce non-ferrous castings of about 10 to 15 Kgs per day. There are few units which with employed workers have considerably higher production capacity. A recent survey by the State Statistical Bureau of the industry in the district reveals the following investment and employment pattern:

Table No 49: KEY STATISTICS OF BRASS AND BELL METAL INDUSTRY

<table>
<thead>
<tr>
<th>Annual Installed Capacity (Tonnes)</th>
<th>No of Units</th>
<th>Average Employment</th>
<th>Average Investment Fixed ('000)</th>
<th>Total ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 - 0.2</td>
<td>26</td>
<td>4.8</td>
<td>0.7</td>
<td>1.80</td>
</tr>
<tr>
<td>0.2 - 0.3</td>
<td>28</td>
<td>4.4</td>
<td>0.6</td>
<td>1.44</td>
</tr>
<tr>
<td>0.3 - 0.4</td>
<td>10</td>
<td>6.0</td>
<td>0.7</td>
<td>1.53</td>
</tr>
<tr>
<td>0.4 - 0.5</td>
<td>2</td>
<td>8.0</td>
<td>0.7</td>
<td>1.50</td>
</tr>
<tr>
<td>0.9 - 1.0</td>
<td>1</td>
<td>7.0</td>
<td>2.0</td>
<td>3.00</td>
</tr>
<tr>
<td>1.4 - 1.5</td>
<td>1</td>
<td>7.0</td>
<td>2.0</td>
<td>3.00</td>
</tr>
<tr>
<td>1.5 - 1.6</td>
<td>1</td>
<td>5.0</td>
<td>1.0</td>
<td>2.00</td>
</tr>
<tr>
<td>5.0 - 6.0</td>
<td>1</td>
<td>10.0</td>
<td>2.0</td>
<td>3.00</td>
</tr>
<tr>
<td>62</td>
<td>1</td>
<td>40.0</td>
<td>50.0</td>
<td>60.00</td>
</tr>
<tr>
<td>(Gopalnagar Cooperative Bell Metal Society Ltd)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>146</td>
<td>1</td>
<td>259.0</td>
<td>50.0</td>
<td>66.00</td>
</tr>
<tr>
<td>(Gopalnagar Cooperative Bell Metal Ltd)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: State Statistical Bureau, Government of West Bengal

Cont'd...159
It may be seen from the Table No 49 that in most of the cases, employment per unit is restricted to between 4 & 10. Only two Co-operatives working at Gopalganj (Manbazar P.S) have significantly higher installed capacity and employment. These Co-operatives are, however, conglomerations of a number of units.

The rate of earnings of the workers engaged in the industry varies from Rs 5.00 to Rs 6.00. The owner-cum-workers who sell their products directly to the market may have a slightly higher earning rate, but finance is a big problem for them. Besides, during the slack season they find it difficult to keep going as acute shortage of finance stands in the way of their storing the product. Rainy season is the slack season of the industry and the maximum work is done from August/September to April/May in a year. The workers generally engage themselves in agricultural activities during rainy season.

As this is a cottage industry the management do not maintain records regarding the attendance, wages, leave etc. Neither they are very co-operative in divulging these informations. Hence, it is rather difficult to have a clear idea regarding the inputs and outputs of the industry. Workers are all local people. As it appears, they do not have fixed working hours. They work from morning till evening. During this period, according to their convenience they go out to attend to their own household work.

Like all other cottage industries of the district, at present the Mahajans are dominating the trade by supply of raw materials and finance.

There are two Co-operatives at Manbazar and one at Buglidih (Puncha PS). Until few years back these Co-operatives formed by the
local artisans were doing good business. But bad management, non-availability of raw materials and acute shortage of finance are standing in the way of their effective functioning. Dominating influence of the Mahajans is also another factor which scare away the artisans from joining in the activities of these Co-operatives.

Problems of the Industry

Financial stringency is the main cause of closure of quite a good number of units. Non-availability of raw materials is also another constraint. If the loans could be made available to units and if raw materials are supplied at controlled rates the problems may be solved to some extent.

The industry badly needs to be modernised. Very few units can afford to have rolling machine required for sheet rolling. These are very costly and at present only a few Mahajans have it. Same is the case with polishing machines. The net result is that even the independent units are to a great extent dependent on the Mahajans as they have to go to these Mahajans for rolling and polishing of their products. Obviously Mahajan keeps his own share of profit. If these machineries could be installed at least on a Co-operative basis in the areas where these industries are concentrated, the profit margin of the industry can be improved.

The advent of substitute materials for use as domestic utensil viz stainless steel, aluminium, porcelain, enamel wares etc has brought a crisis to the industry. Many traditional users are gradually switching over to these alternatives either because of high cost of brass and bell metal utensil or following the modern trend. Stainless steel as a metal though costlier than the Brass and Bell metal is less expensive than these utensil, since the stainless steel utensil are

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much lighter than the Bell-Metal and Brass utensil. Aluminium and other substitute materials are considerably cheaper.

Perhaps the writing of the wall is clear. The use of bell-metal utensils is decreasing. With all sincere efforts to revitalise the industry, it will be difficult to stall shrinking of the market. It is high time the artisans are persuaded to switch over to the manufacture of other items where their traditional skill can be effectively utilised. Aluminium utensils are now-a-days being used extensively. With the expertise available, the artisans can still capture this market. Purulia is ideally placed with respect to various steel plants of India. These steel plants and their ancillary industries require a huge quantity of non-ferrous castings for the maintenance of their plants. These artisans are highly skilled in melting and casting of non-ferrous metals. With some technical guidance and motivation they can very easily adapt themselves to this new production line.

Sophisticated decorative articles have a very good export market. The artisans should concentrate more in this field. If they can earn foreign exchange, this will make them entitled for import of raw materials viz copper, zinc and tin. For this it is worthwhile to consider setting up of a Training-cum-production Centre. The design centres of the All India Handicrafts Board located at places like Bangalore, Varanasi and other places supply design to the artisans when asked for. They also train people in specific improved methods. They can be contacted for necessary guidance.

**Agro-based Industries**

(a) Gur and Khandsari

Nearly 1,000 persons, mostly in Arsha Block, are engaged in the
cultivation and processing of Sugar-cane as well as production of gur. The opportunity of increasing production has expanded with the utili-
sation of a juice extraction machine provided by the State Government through a Co-operative. In Arsha Block there is a considerable scope for producing Khandsari Sugar.

(b) Oil Ghani

Although the district does not produce sufficient quality of mustard, the oil ghani units have a good demand in the district. About 2,000 persons, mostly in the Police Station of Purulia, Jhalda, Jaipur and Barabazar, are employed in this industry.

(c) Wheat Grinding and Bakery

Wheat Grinding is very lucrative business in Purulia District. The reason for this is that the district is deficient in rice produc-
tion and the people use wheat, maize, bazra as their staple food. At present the units in the Police Stations of Purulia, Jhalda, Bala-
rampur and Raghunathpur employ about 700 persons.

The District has 15 Bakery Units producing, bread, biscuits, cakes, etc. These are located mainly in the Police Station areas of Purulia, Raghunathpur, Barabazar, Manbazar. Employment in the units is over 500. Of these 15 Bakery units there are only two semi-
machanised modern bakeries one each at Tulin and at Adra of which Goswami Bakery at Tulin is larger. Here dough making slicing and wrapping are done mechanically.
(d) Rice Mill

The Rice Mills are raw material oriented industry and are located in rice growing districts. Some 25 Rice Mills are in operation in Purulia District. These are not of very modern type. They are located in Raghunathpur, Manbazar and Jhalda Police Station areas. About 150 persons find employment in the Rice Milling Industry in the district. The State Government has a proposal to set up two rice mills, each with a capacity of 2 tons, on a Co-operative basis.

Live Stock Based Industry

(a) Tanning and Shoe-making

Leather foot wear is an important labour intensive industry, a considerable part of production being in the cottage and small scale sector. This industry in this district is entirely cottage type and done by traditional cobblers spread all over the districts. Localisation of this industry has been found at Jaipur, Purulia, Pobra, Magura, and Manbazar. The number of units producing hides and shoes is at present around 1000. Employment is around 3,000. Besides a few skilled cobblers whose produces can fetch Rs.15/- per pair at most the other are mainly shoe-repairers. There are two shoe shops in Purulia town. They are able to meet the demands of small dealers of shoes in Purulia town.

Main raw material for footwear industry is finished leather which is available from indigenous sources. Small quantity of shoe grindery shoe dressing are required to be imported. The district of Cont'd...164
Purulia has been declared as a backward district and is eligible for central subsidy. Though local skill is available in respect of selected traditional craft items, technological skill in respect of modern small industry is lacking in the district. For the purpose of meeting the needs of industrial development, it would be necessary to improve the technological skill in many respect. The State Government has started training-cum-production centres in Manbazar and Punch Police Station. These centres can train up 40 persons at a time. During 1980-81 this type of training centres will be started at Balarampur, Kotshila and Jhalda.

The poorest section of the rural artisan community in Purulia district comprises the basket-makers and cobblers. Bank assistance may be given to underemployed trained cobblers to enable them to open independent leather goods manufacturing workshops in the blocks of Jaipur, Purulia, Manbazar, Puncha and Hura.

Miscellaneous Industries

Other industrial activities in the district concerning general engineering, book binding, printing, pen-repairing, soap industry, rope making, cycle repairing, watch repairing, pottery, radio repairing, tailoring and the like absorb a good number of people. A few of them are discussed below

(a) General Engineering Industries

In Purulia more than 200 engineering industrial units are operating. They are manufacturing structural engineering products like gates, grills, collapsible gates, rolling sheeters, steel windows, doors and also undertaking servicing of automobiles, re-
pairing agricultural implements and pump sets. The total No of persons engaged is approximately 1000. These units are interested to expand their activities to other products like manufacturing steel furniture and agricultural implements. Electrical Engineering Industry has not yet developed. The products presently manufactured are all being sold in the local market.

Major problems faced by these units are lack of adequate finance and shortage of proper raw material like sheetmetals etc. Bokaro and Jamshedpur are the raw material suppliers to this industry.

(b) Soap Industry

There is a good scope for the development of soap industry as non-edible oil seeds much as mahua karanja, palam, neem etc are available in the district but these require a Co-operative and concentrated effort for the collection of these seeds. Crushing Mills have also got to be developed.

There are three private and one Co-operative soap manufacturing unit in operation in the district. All these units are producing laundry soap mainly. This industry employs more than 150 persons. The units are located at Tulin, Purulia, Dubra and Daldali. Soap making chemical are imported from Calcutta and other surrounding regions. Dubra and Daldali - in which Rs per annum capacity of the units in these two localities are 6000 and 8000 Kgs respectively.

(c) Pottery

Over 3,000 persons are employed in the 25 tile manufacturing
units and in units manufacturing pitchers, images and bricks. About a hundred men have been trained in the training-cum-production centre of the State Government in the use of improved equipments in tile manufacturing.

(d) Mini-Steel Plant

A mini-steel plant registered under the name 'Bengal Arc Steel Ltd' has come up in Purulia near Balarampur (Figure 31A). The plant had a long gestation period. Initially, because of shortage of power the plant could not start functioning. Only recently it was started regular production.

The plant has installed sophisticated machineries like steel melting arc furnaces, direct reading spectrographs, tensile and hardness testing machines etc.

It employs about 250 people. When in full stream, it can satisfy quality raw material need of the traditional hand tools and cutlery industry of Purulia, besides its other commitments.

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