CHAPTER - VI

PROSPECTIVE AND VIABLE INDUSTRIAL UNITS OF MANIPUR

A. LARGE AND MEDIUM INDUSTRIES:

(1) PAPER AND PULP INDUSTRY (LARGE SCALE):

The state has vast resources of bamboo available in the west and south districts of Manipur mainly in the Barak drainage area spreading about 1500 sq.kms. of Bamboo forests. Based on this availability of vast bamboo resources, a project report for pulp and paper mill was prepared for a capacity of 200 tonnes a day. It is to be established at Chandighat in Jiribam sub-division. Works are in progress for the establishment of this mill. Another insulated paper mill of 25 tonnes per day capacity, based on the pine wood trees grown in the three districts of Manipur North, East and Tengnoupal district, is also proposed to be set up at Karong of Manipur North district.

These projects still remain to be cleared. However, in order to make the pulp & paper mill alive token provisions of Rs.6 lakhs for 1980-85 and Rs.1 lakh for 1981-82 were made for the works like project appraisal, land acquisition and land development. A sum of Rs.1,61,940.50 has been so far spent on preparation of the project report. The objective of the mill are to produce paper for local consumption, to export something outside the state, and to give employment to the large section of the unemployed youths of the state.
In case of insulated paper Mill, there was a token provision of Rs.4 lakhs for the sixth five year plan period. It was for the project appraisal of the insulated paper mill. Land acquisition of 30 hectares was processed by the D.C. North and a sum of Rs.1.50 lakhs was spent during the 5th plan period. Since the raw materials are in abundance (specially bamboo) and the project is found feasible as a part of the scheme of industrialization and provision of employment the proposals for the establishment of these mills have been made.

Unfortunately, during the seventh five year plan there were no provisions for these two papers mills. Instead, a provision of Rs.120 lakhs for 1985-90 and Rs.8 lakhs for 1985-86 have been made for a bamboo chipping plant at Kadamtala(Jiribam). The total capacity of this plant is 75 ADMT per day with a total cost of Rs.158.13 lakhs. The life of the plant is 14 years and it will provide employment to 64 persons directly and 2000 persons indirectly. Later on, this plant may act as an ancillary unit to the large scale bamboo based paper mill of Jiribam (The railhead of Manipur). Jiribam itself is covered by vast bamboo forest comprising an area of about 387 sq.km. In the entire state, the bamboo forests cover an area of 3268 sq.km and the annual yield of bamboo is estimated at 14.40 lakhs tonnes.1

In Manipur, there are many species of bamboo, viz., Longgna, Utang, Khokwa, Saneibi, Maribob, Laiwa, Liwa, Watangkhoi, Nat, Unap, Wee, Wamu, tenwa, Wak, Oonal, Mobiwa etc. It (Bamboo) can grow easily in the valley areas as well as on the hill slopes of the state. Thus, the problem of soil erosion in the hill areas of the state, can be checked by planting the plenty of Bamboos. Out of these species of Bamboos, the Mulibamboo (Melan-anna bambusoides) is to make excellent paper.

Thus a great employment opportunity can also be generated by establishing one bamboo-based (large-scale) industry in the state. It may have a long life span without any losses. But, in case of pine-based paper mill, the life span will be very short and it will benefit only to a small section of people.

Here, one of the interesting fact is that Bamboo has a number of uses and it is grown in every district of Manipur. Some variety of Bamboo can be harvested in every years. The quick grown varieties or early varieties of Bamboos can be planted on the barren lands found both in hills and valley areas.

Bamboo is very important in the economic life of the state. It is equipped to replace three scare resources viz., wood, metal, and oil. It is also a source of food (viz., Bamboo leaves and its leaves) both for man and animal. The main building
materials, as well as agricultural & industrial materials are derived from Bamboo. This plant also slows the process of soil erosion. It maintains the ecological balance of the region too. Recently, a process has been discovered for distilling liquid diesel fuel from Bamboo.

One point should be noted here that the paper is made not only from bamboo but it can also be made from water Hyacinth (Kabokung), Paddy's straw, reeds, soft woods etc. which are found abundantly in the state. Moreover, the water of Loktak can be maintained in good condition by using its water Hyacinth for paper production instead of spreading of Neochetina (an insect), to destroy plenty resources of water Hyacinth.

(ii) SPINNING MILL (MEDIUM SIZED)

Traditionally, Manipur is very famous for her spinning and weaving culture, especially silk and cotton. Formerly every house of Manipur, was related with cotton as well as silk culture. That is why at present too every house of Manipur is having one loom i.e. loin loom or fly shuttle loom. Majority of the looms are loinlooms. Moreover, on hill slopes of the state, there are natural facilities for the cultivation of cotton & oak Tasar. Thus, in future, more employment opportunities can be generated by strengthening the existing spinning Mill.

Moreover, the state Govt. has already established one training cum production unit of the cotton spinning mill of 25,250 spindles at Loitang khunou. This mill will fulfill the needs of about 25% of the 3 lakhs looms in Manipur and provide employment to about 2 lakhs people for cultivation of cotton in different places of the state. The state Govt. so far has invested Rs.227.70 lakhs as the equity share capital on the estimated cost. According to 1956-59 handloom census, there were about 2,00,249 looms and out of these looms, about 50% are more or less commercial looms.

So, the objective of the establishment of this mill was to provide yarn locally and make it available to the local weavers at a cheaper rate and also to give training facilities to them in weaving. Though it has many problems at present, yet the future of the mill is very bright.

Knowing these facts, the state Govt. has approved a sum of Rs.270 lakhs for 1985-90 and Rs.67 lakhs for 1985-86 in case of Manipur spinning mill corporation. The mill is not only acting as an ancillary unit to the reputed handloom industry of Manipur but it also gives a direct employment to 643 persons and has a projected potential for employment of 1250 persons, when full capacity of spindles is installed. The corporation will
be diversifying into the area of Acrylic yarn production for which project report has been prepared by the MIDC.

(iii) TEA INDUSTRY (A MEDIUM SIZE INDUSTRY)

Formerly tea was not so popular among the local inhabitants, but it was grown in some pockets of the state (viz Chamang area etc.) Tea was used as a medicinal herb by the traditional Maiba (Physician) of Meetei. At present, tea has become a common beverage and a good cash crop also. The climate and soil of the state are suitable to grow more tea on the hill slopes. In the year 1878-79, Tea seed, ivory, bees'-wax, and Indian rubber were seen in the export trade item of Manipur. So, tea & Rubber were an indigenous plants of the state. Manipur Tea-estate at Jiribam runs by 'Manipur plantation crops corporation' was established in the year 1981-82. Tea was planted in an area of about 425 hectares at Tea Estate, Jiribam. Thousands of Tea plants were planted there in the initial stage.

Thus, there is a good hope for tea industry in the state. Not only the areas of Jiribam, but also the hill slopes of the state in other parts are suited for tea plantation. Since tea is the most important of the beverage crops of the world and a large portion of the world population drinks tea more than coffee or cocoa.

Manipur has a better prospect for exporting tea if this industry is geared up. Manipur being a part of the Monsoon region of Asia (India-Assam); is also having abundant cheap unskilled labourers, suited amount of rainfall, varying from about 100 to 200 inches annually, and the temperature varying from about 60° to 75°F. with very little difference between winter and summer temperatures, specially in its hilly areas where tea plantation is being made.

Thus, Manipur has all the necessary conditions for the cultivation of best type of tea including climatic, soil, locational and labour facilities. So, the prospect of tea industry in the state is very bright.

B. SMALL SCALE AND COTTAGE INDUSTRIES:

(i) SERICULTURE:

Since time immemorial, sericulture industry has been in practice in Manipur exploiting her own respective indigenous flora and fauna in a traditional way. However, from first Five year plan to the end of Fourth Five year plan only three branches of sericulture, viz. Mulberry, Muga and Eri were developed in some traditional pockets of the state, namely, Khurkhul, Leimaram, Phayeng and Thongjao etc. in a limited way. Till the end of Fourth plan period, sericulture was having a small section in the Directorate of Industries, Manipur. In view of the already existing
infrastructures viz. unique climate and prevailing topographical conditions with indigenous silkworm races and their respective food plants, availability of traditionally skilled weavers and sericulturists in the state, the Government started to lay greater emphasis on the development of sericulture for the quick improvement of the socio-economic conditions of the state through industrialization. Thus this particular industry was started along with other small scale industries which were already existing in the state. Because of oak shrubs (viz. 'Uyung' or Oak Tasar and 'Sahi-Kuhi' or Castanopsis indica) naturally grown in abundance in the foot hills of the central region, the state has got a tremendous potential for development of tasar culture. Based on the survey report of the central silk Board, Govt. of India, the state launched extensive oak tasar sericulture programme during the fifth five year plan. Since then steady progress has been achieved in this field. During the year 1974-75, the number of sericultural farms established were 5 and it increased to 75 by the year 1979-80, Whereas the cocoons produced and silk yarn produced were 16 lakhs cocoons and 1000 kgs. of silk yarn respectively in 1974-75. It increased further to 250 lakhs cocoons and 9000 kgs. silk yarns during the year 1979-80.

For the sixth Five year plan period a provision of Rs. 516 lakhs was made for the development of sericulture in the state. During this period an additional number of 50 grainages and
35 extension centres were opened. During 1980-81, a sum of Rs. 100 lakhs was spent. During this period 8 grainages and 10 extension centres were also opened.

In the annual plan of 1981-82, there was a provision of Rs. 100 lakhs. During this period 8 grainages and 10 extension centres were to be opened. For the preparation and supply of Tasar disease free lying to the village rearers the existing number of grainages are to be increased to cater to the growing needs. A grainage would cater to the needs of about 100 tasar rearing families. Most of the local people do not have any idea of scientific way of rearing the silk worms. As such the local sericulturists are to be given education about scientific way of rearing etc. in the extension centres. Therefore, during the sixth five year plan beside the upgradation of a few extension centres to grainages, some more extension centres were also opened.

Besides, some schemes like grant to sericulturists, District/Block organisation, extension centres, Mulberry Development programme, Training and experiments, silk reeling & spinning-cum-weaving, strengthening of central Administrative set up etc. were taken up during the 6th plan period. All these schemes use to help the private silk worm rearers to use up-to-date equipments for plantation as well as rearing. Assistance in the form of cash and
kind are granted to the practicing rearers at village level. But Mulberry Development programme was taken up in the scheduled caste areas. This aimed to develop the Mulberry and Sericulture in the scheduled caste areas in the valley especially at Traditional pockets like Khurkhul, Thongjao and Kwakta. For giving a ready market for the cocoons so produced by the village silkworm rearers, cocoons are purchased every year and convert it into raw silk.

Recently, the old traditional Kags (Castor plants), Tumitla (Cinnamomum-Ceceodephne), and Kabrang (Mulberry) worms are developed and protected by sericulture Deptt. For this type of worms about Rs. 2.5 crores project is handed over to central silk Board by sericulture Deptt. of Manipur. Here, one of the most interesting fact is that the original castor silk worms use to consume the leaves of sweet potatoes, papaya etc. in the slack seasons.

There are four types of silkworms which can be reared inside (internal) and outside (external) the rearing shed. They are:-

(A) OUTSIDE THE REARING SHED (EXTERNAL)

(1) TASAR SILKWORM OR TASAR LEIMA (UYUNG AND SAHI KUHI/OAK TASAR & CASTANOPSIS INDICA)

(2) MUGA SILKWORM OR MUGA LEIMA (NONGNANG KORI AND TUMITLA/ CINNAMOMUM CECIODERPHNE)
(B) INSIDE THE REARING SHED (INTERNAL)  (1) ERI SILKWORM OR ERI LEIMA (KEGE/CASTOR)

(2) MULBERRY SILKWORM OR KABRANG LEIMA-TIL (KABRANG CHAK/MULBERRY)

This silk worm rearing may benefit about 3,500 families in Manipur. In the momming 3 to 4 years about 50 percent of the total population of Manipur may get self employment under silk worm rearing schemes. Under this scheme, about 3500 hectares of land is targeted for the plantation of mulberry and 460 hectares of land has already been brought under systematic plantation of mulberry near the foot hills of Manipur. In the year 1987, about 1000 hectares of land was planted by Mulberry trees. For this purpose, about 50 lakhs of saplings(mulberry) were prepared and made for plantation. Another 40,000 hectares of land has been brought under systematic plantation of oak trees for rearing to oak tasar worms.

Moreover, Kwakta sericultural training institute is allowed to be up-graded into Regional Training Institute by N.E.C. At present, silk thread are manufactured by silk reeling and spinning factory at Takyelpat. In the year 1987 about one and half crores of cocoons were produced by 500 persons only. But the targeted amount during the year 1987, was about 60 lakhs only. The
rearing of silk worm (Tasar-Oak) was first established in 1973-74, (by India Gov't's policy and programme). After that, it was discontinued. But is it still continuing as state plan (Govt. of Manipur). Now, Manipur is becoming a pioneer and best state of silk culture. Sericulture Dept. of Manipur has its own sericulture research wing, which was established in the year 1984. Now more research works are being done in Manipur University.

During the year 1986-87, 19 science graduates, 43 Matriculates and 35 under Matriculates altogether 97 trainees were sent Sericulture training at Berhampore, Mysore and Kwakta (Manipur) for specialisation in Mulberry Agronomy.

Recently, post graduate diploma course in Sericulture for 15 months under self employment scheme has been opened for educated unemployed youths at central Sericulture Research and Training Institute, Mysore/Karnataka and Central Tasar Research & Training Institute, Ranchi.

As mentioned above, Manipur has about 2 lakhs acres of Uyung (Oak Tasar, Botanically grouped under Quercusgenera) plants.

Silk worm of Tasar Oak has 3 types and they are :-

1. Uni-voltin (laid eggs once),
2. Bi-voltin (which laid eggs twice), and
3. Multi-voltin (which laid eggs more than twice)
Except Multi-voltin, others are kept separately for the convenience in rearing and harvesting of cocoons. According to a research finding, rearing of worms can be started from the 2nd week of February, the time of shooting of leaves of oak Tasar varieties throughout the year till the month of March when the new shoots comes up. Thus, it lays more eggs in time and more cocoons can be produced. Efforts are under progress by the researchers to improve yield. Silk yarn has been reeled out and got tested. It is reported that the quality of tasar silk of Manipur is better in lustre compared to tasar silk produced in other traditional states in India. It is as good as that of tasar yarn of China which is the premier tasar silk producing country in the world. It had been made possible to produce one kg. yarn from 4,000 cocoons in laboratory. Thus, Manipur has the privilege of being the first state in India to produce oak tasar of unique quality in the country. However, from first five year plan to the end of fourth five year plan only three branches of sericulture (viz. Mulberry, Muga and Eri) were developed in some traditional pockets namely, Khurkhul, Leimaram, Phayeng and Thongjao etc. of the state in limited ways.

The production of raw silk during the year 1984-85 was 31,372 kgs. (10,372 kgs. of Mulberry and 21,000 kgs. of Tasar) and production of Tasar/Eri-spun silk during the same year was 25,700 kgs. (12,200 kgs. of spun yarn tasar and 13,500 kgs. of spun yarn eri). (Vide Appendix No.XVA & XVIII)
At present, 90 sericulture farms and extension centres have been established mostly nearby S/T and S/C villages. The Govt. is also trying utmost to uplift this unique industry of Manipur.

About the concentration of the sericulturists (both in hill and valley) indicates that there is a tendency of concentration of co-op. sectors in a particular sub-division or block. It also means that Tasar industry is in a preliminary stage of development. Demonstration works and initiative works are first necessary things followed by others. Thus, in future it may be developed slowly and steadily. At present, 375 villages have been identified as sericulture-villages. 52 sericulture co-operative societies have been organised and 12,000 families have been brought under the domain of sericulture so far. At Imphal only silk reeling and spinning are done. In Imphal district, 1245028 Nos. of Oak Tasar cocoon, 11577 kgs. of Mulberry cocoon, 21780 kgs. of Eri cocoon and 45,000 kgs. of silk yarn were produced in the year 1983-84. 14,76,121 Nos of oak Tasar cocoon; 20,025 kgs, of Mulberry cocoon, 10,085 kgs. of Eri cocoon and 52,460 kgs. of silk yarn were produced in 1984-85 in Imphal district alone. (Vide Appendix No.XVI) So, Imphal is the only district where there is a full concentration of sericultural activities.
TABLE - 28

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(ii) HANDLOOM:

The handloom weaving specially done by the women folk is the traditional cottage industry of the state as a whole. This industry offers employment to the womenfolk because they have attained
special skills in this trade over the years. This inherent skill and human resource (women only) can be developed into a thriving industry, offering profitable and full employment to lakhs of women. Traditional skilled artisans specially in silk, Spinning and weaving are found concentrated in Thangmeiband and Chingmei-rong areas extending up to adjoining villages like Heingang, Ahal-lup and Khabam villages. Skilled weavers specialized in weaving of cloth like delicate Lamthang Khullak, Engineer fee, Khudei Macha, Kokyet macha etc. are found concentrated in Wangkhei area near Ningthempukhri Mapal and some parts of Singjamei Chingamakha. Skilled loin-loom weavers producing items like Khwang phane, Ngabong etc. are found in the areas of Imphal-East Block and other parts of the state.

The Manipur Handloom & Handicrafts development corporation Ltd. was set up in Oct. 1976 to implement the intensive Handloom Development project of the Govt. of India mainly to provide facilities to individual weavers who are outside the co-operative fold. In order to modernise and enlarge the scope of this traditional industry a number of incentive programmes have been taken up by the Govt. They are follows:-

(1) "Manipur state handloom weavers co-operative society Ltd." and "Manipur handloom and handicrafts development corporation" are procuring scarce raw materials and distributing them to the weavers co-operative societies as well as to the individuals on easy terms and conditions and also taking responsibility for marketing of their products.
(ii) In case of share-capital-assistance to primary 'Weavers co-operative societies,' 'viable primary weavers co-operative societies' with 100 and more members are eligible for share capital assistance at the rate of Rs.200/- per member, out of which 5% i.e. Rs.10/- is to be contributed by each member and rest by the Govt., on the basis of 50% grants and 50% loan.

(iii) Under the modernisation scheme weavers are encouraged to increase their productivity quantitatively as well as qualitatively using modern looms like fly shuttle looms, looms fitted with jacquards, dobbies and high speed winding charkhas. The modernisation scheme is fully financed by the Govt. on the basis of 50% loan and 50% grants.

(iv) Newly registered and re-organised societies are given managerial staff subsidy at the rate of Rs.3000/- per society per annum for the first 5 years for engagement or appointment of one Manager and one Accountant to overcome initial problems of poor management and accounting.

(v) The co-operative Department is also giving such managerial subsidy limited to Rs.5,400/- per year at the tapering scale for a period of 8 years. 100% in the first year, 7/8 in the second year, 6/8 in the third year and so on.
(vi) Moreover, 50% of the expenditure on transporting raw materials from other parts of the country to Manipur and transporting finished goods from Manipur to other parts of the country are subsidised by the Govt. To popularise handloom products a rebate at the @5% on sale of Manipur handloom products is given to the consumers by selling agencies. It is, later on, reimbursed to them by the Govt. Further a special rebate of 25% is also given on the sale of accumulated stock and on sale in important exhibition, fair and festivals etc. for a limited period only.

(vii) Subsidy for opening sale imporium by the Handloom Development corporation, Apex society and few selected primary weavers co-operative societies is also given. 8(eight) prospective weavers are sent by the state Govt. every year for 3 years diploma course in Handloom Technology at the Indian Institute of Handloom Technology, Gauhati. Trainees are given stipend at the rate of Rs.200, Rs.225/-, Rs.250/- per month in the 1st, 2nd, & 3rd year respectively. The weavers service centre at Takyelpat is also imparting short term training in weaving, dyeing designing and printing.

(viii) The Govt. is also running a number of handloom weaving training centres at Thoubal, Porompat, Churachandpur, Tamenglong, Ukhrul, Chandel, Khoupum, Tadubi and Jiribam for imparting 2 years artisan course to the prospectives weavers on fly shuttle looms.
After completion of their training, the trainees are given a set of fly shuttle loom to start their own production. 75% of the cost of the loom is subsidised by the Govt. and the rest 25% is to be contributed by the trainee himself or herself.

(ix) The ex-trainees under weaving programme and weavers working under the master weavers are being identified by the Govt. They are organised in the form of association etc. to tie up their financial requirement from financial institutions. They will also be provided assistance under various incentive schemes as mentioned above.

(x) Moreover, a scheme of house cum workshop for weavers in the rural areas costing Rs. 9000/- per unit is being implemented by the Govt. Out of this Rs. 6000/- is given as a grant and remaining Rs. 3000/- as loan from HUDCO. A scheme for construction of house cum workshop in urban areas costing Rs. 15,000/- per unit, is being implemented by the Govt. Out of this Rs. 5,000/- will be given in the form of grant, Rs. 9,700/- as loan from HUDCO and the remaining Rs. 300/- will be contributed by the beneficiary himself/herself.

(xi) A special programme for practical training to the educated unemployed youths for 4-6 months will be organised in weaving of such items which are to be sold readily with reasonable profit in the market to settle them in the trade by providing improved looms and application at a subsidised rate of 50%.
(xii) During the sixth plan period the corporation could provide facilities to 4500 individual weavers, and during 1986-87 the corporation could cover 1,000 weavers. During the same period the corporation purchased yarn worth Rs.4.61 lakhs and produced handloom clothes worth Rs.6.24 lakhs and sales turnover was Rs.10.13 lakhs. In addition to this during the 7th five plan (1985-90) a sum of Rs.400 lakhs and Rs.35 lakhs in annual plan of 1985-86 were kept as an approved outlays in different heads of handloom developmental schemes. (Vide Appendix No.XIV).

(xiii) Moreover, there are many incentive schemes for handicrafts artisans also. During the 7th plan period (1985-90) a sum of Rs.80 lakhs and Rs.8 lakhs in the annual plan of 1985-86 were also kept as an approved outlays in different heads of handicrafts industries. (Vide Appendix No.XIV).

(xiv) To preserve, propagate and develop exquisite handicrafts items of Manipur, Govt. have been offering various incentive schemes to artisans.

(xv) Like handloom artisans, craftman are sent for training in different trades of handicrafts outside Manipur for a duration, varying from 6 to 12 months. During the training period they are given stipend varying from Rs.100/- to Rs.200/-
per month, and after completion of their training, artisans are given tools & equipments at a subsidised rate of 50% of the cost to establish themselves in the trade and a special grant subject to a maximum of Rs.5,000/- is given to handicapped handicrafts artisans to establish themselves in the handicrafts industries. Many study tours and state award to master craftsmen are arranged and a cash award to Rs.1000/- and Rs.500/- are given as state Award & Meritorious Award respectively to eminent craftsmen in major handicraft items. A registered handicraft co-operative society is eligible for managerial subsidy for a period of 3 years at the rate of Rs.5,400/-, Rs.3,600/- and Rs.1,800/- in the 1st, 2nd & 3rd yrs. respectively. A subsidy is also given for construction of common workshop to handicrafts societies.

(xvi) For easy marketability the handicrafts cooperative societies are given subsidy to open sales depot inside and outside the state and working capital loan subject to a maximum of Rs.30,000/- is also given to artisans for purchase of raw materials and other essential equipments for diversification and development of their products.

Moreover, a registered handicrafts co-operative societies is eligible to get a share capital loan at the rate of Rs.450/- per member, subject to a contribution to Rs.50/- by each member to increase their borrowing capacity for working capital etc.
Some of the schemes which were taken in 5th, 6th & 7th Five year plan periods in the field of handicrafts industries are pine fibre training cum production centre at Porompat & Jiribam, strengthening of training cum production centre for woollen shawls, carpets & rugs weaving (continuing scheme) etc.

Thus, the handloom & handicrafts industries in the state are progressing and having a bright future.

(iii) RESOURCE BASED INDUSTRIES:

Establishment of other resource based small scale cottage industries of Manipur consist the following industries:
(a) Rice mills (b) Oil mills (c) Briqueted fuel (d) Dehydration of vegetables (e) Fruit preservation and processing (f) Citronella oil (g) Saw mill (h) Wood seasoning (i) Semi-mechanised wooden furniture (j) Wooden electrical accessories (k) Cattle and poultry feed (l) Brick making (m) Stone crushing (n) A cane base furniture (o) Cinnamon bark oil from Cinnamon trees grown in plenty in the forests of Manipur (p) Lime kiln, 1 or 2 unit kilns having a capacity to produce 2.5 to 3 tonnes of lime per day near Ukhrul (q) Bristle processing from about Rs. 10 lakhs worth of pig bristle available annually in the hills and production of utility goods, say, different types of brushes (r) a tannery unit for tanning sole leather from wasted hides available in the state.
(s) Veneer for plywood from soft wood available in the state
(t) Saw mill seasoning plant cum joinery composite unit (u) Pine oil extraction unit (v) Other resource based industries (viz, mushroom cultivation, flour mill, ice candy, spices grinding, straw board making, pickles mfg., fly shuttle and loom mfg., plywood mfg., agarbati mfg., surgical bandage mfg., paper from water Hyacinth, serpentinite slab mfg., Chromite Grinding & processing units, pine-apple fibre based textile industry, Idocrase, rare stone and Diamond cutting unit etc.).

Most of such industrial activities are all concentrated in and around Imphal town.

As regards the geographical factors, Imphal district is having a very important position for much resource based industries than those of other districts of the state. All the raw materials, specially forest products available on other surrounding districts are brought down to this district through state highways and district roads. With the expectation of regular power supply from the Loktak hydro electricity project, availability of raw materials in the state, Local demand of the products, traditional skill of the people, etc. all these factors have led to some prospective industrial units to be encouraged and set up in the district during the years 1985-90.
Some of the viable resource-based industries, which can be established in Manipur, especially in Imphal district, are as follows:

(1) MODERN RICE MILL: Although many Rice mills are set up in many localities of the state, most of them are huller mill which produce less percentage of rice and also take away nutritive parts of rice bran. Hence, modern rice mills of rubber rolled sheller type are being thought of. These can give more production of rice nutritious to health. Now-a-days, in both urban and rural areas, hand pounding of rice is replaced by mills and rice is the principal food of the local people because paddy is cultivated and produced abundantly in the district. Moreover, there is increasing demand of rice bran and broken rice for feeding poultry, cattle and piggery in the district. Taking into consideration of these facts, a few modern rice mills may be set up in the district in the years to come even on job work basis.

(2) OIL MILLS:

Although there are around 20 registered existing oil mills in the district, most of them are in a dying condition due to lack of own working capital to procure and stock the oil seeds in the harvesting seasons. It is also due to the lack of expertise and zeal in the trade. Mustard oil is one of the most important essential
commodities for every house in the district. Taking into consider-
eration of the local demand of oil, the oil seed production
of the district and good power position, at least one or two
more units for prospective entrepreneurs may be set up in the
district.

(3) BRIQUETED FUEL:

There are many rice mills and saw mills in the district. The waste like rice husk and saw dust are utilised as fuel for cooking proposed only by the low income group people. Rice husk produced only by the low income group people. Rice husk produced by Rubber sheller Rice mills cannot be used even for cooling purpose. They pose problem to the mill owners due to piling up and covering large area. So, these wastes may be converted into smokeless briqueted fuel. It can be conveniently and economically utilised in cooking, heating and other purposes in homes, hotels, factories and even offices. Hence, one briqueted fuel manufacturing unit may be set up in the Imphal area where rice mills and saw mills are concentrated.

(4) DEHYDRATION OF VEGETABLES:

Vegetables namely peas, potato, cauliflower, Cabbage etc. are available in plenty during the season at a very low price in the valley districts including Jiribam sub-division. With the establishment of some dehydration plants in the area not only the vegetable will be available during off seasons but it will also
save the wastage due to surplus during the season. For the present there is no dehydration unit in the state. Some units to dehydrate such seasonal vegetables like peas, potatoes, cauliflowers etc. can be established in the state in order to make it available during off season.

(5) FRUIT PRESERVATION AND PROCESSING:

Fruit juice and canned slices are popularly demanded inside and outside the state. Pine apples, lemon, guava, pears, orange are available in plenty in the Imphal district and surrounding hills of Manipur. Fruits are sold at very cheap price during the season and even there is wastages in some villages due to bad transport facilities.

At present there are five fruit processing units, three are in private sectors (i.e. Manifru, Ratna, Sana), another one at co-operative sector (Heirang) and remaining one is run by Agricultural deptt. Govt. of Manipur at public sector (i.e. Magfruit).

There is still scope for establishing one or two fruit preservation and processing units in the state. By using plastic bags, canning of pineapple slices, preparation of jam, jellies, pickles etc. made from some other local fruits (viz, Heikha, Heimng, Malhei, Amla etc.) may also taken up very successfully in the state.
(6) CITRONELLA OIL:

As advocated by RRL Jorhat, Citronella can be grown at different places of the state. This plant is grown in plenty at Jiribam & Imphal west. On hill slopes of Manipur west, the plant is grown wild. The soil and climate conditions is very suitable for the plantation of Java Citronella in Manipur. The oil content of the plant is tested and proved to be economical, Citronella oil is used for preparation of cosmetic goods. There is demand of this oil inside and outside the country. So one or two units can economically be established in the Jiribam area.

(7) SAW MILLING:

A number of saw mills have been established at Imphal. In rural areas and small towns, where carpentry units and building construction works are rapidly growing every year, the demands of planks and other wood pieces of various size cannot be met by the traditional pit sawing units. Therefore, there is still scope for establishment of some more saw mills at different growth centres in the state. In every small town and at every road-junction of the state at least one or two saw mills can be established. It should be done after taking into account the increasing demand and power position.
(8) WOOD SEASONING:

Timber is available in plenty in the hill districts of the state via state highways. Seasoning of wooden planks and pieces is naturally done exposing to atmosphere and sunlight. But it is very much time consuming process. To meet the increasing demand of wooden planks, pieces etc. for construction of building and standard quality furniture in the state establishment of one or two wood seasoning plants as well as saw mills is immediately required.

(9) PLYWOOD INDUSTRY:

Now-a-days, the demand of plywood in the state is increasing tremendously. Recently one plywood industry in Imphal is going to be established. But, by seeing the increasing demand and power supply, one or two more such units can be established in Imphal district.

(10) SEMI-MECHANISED WOODEN-FURNITURE:

To meet the increasing demand of readymade doors and windows for Govt. and private buildings, some semi-mechanised furniture units may be established in the state. Furniture is a must in any marriage ceremony of Meetei. Good furniture are sold at higher prices and very popular among the people. Therefore, a few such units can be established at every growth centre of the state, specially in the valley.
(11) WOODEN ELECTRICAL ACCESSORIES:

Rural Electrification programme is taken up all over the country. In this state also electricity dept. has taken up vigorous activities to achieve the target of rural electrification. Loktak hydro-project, Loktak downstream hydel-project, and other hydro-electrical projects are going to supply cheap electricity to the rural areas of the state. This will provide scope for establishing a few wooden electrical accessories making units in the valley districts, specially at Imphal.

(12) CATTLE AND POULTRY FEED:

Now-a-days, cattle rearing, poultry keeping, and piggery rearing is developing in the state. More and more initiatives are also taken up by the Animal Husbandary Dept. and private parties too. Hence, a few cattle/poultry feed mixing units can be established in the state. At present these feeds are supplied by Siliguri & other places having such units outside the state.

(13) BRICK MAKING:

Now-a-days, demand of brick has increased to a great extent. Due to shortage and high price of timber and thatch, many people have started to use more bricks for construction of residential buildings. In addition, with the identified Govt. development works, demand of bricks has increased to a great extent.
The demand of brick is so high that the price of brick per thousand ranges between Rs. 250 - 1200/- . Since all the raw materials for brick making are locally available, this is one of the most viable industry for the district and the state as well. By considering air pollution, some modernised type of brick manufacturing units can be established in the valley districts.

(14) STONE CRUSHING :

Along with the developmental plan, construction of road and bridges has increased manifold. Out of total plan fund, more than 50% goes to road and bridge construction etc. Moreover, the price of brick is very high. Therefore, people will naturally like to use stone-chips for construction and R.C.C. works. Stone boulders are available in plenty at Sekmai areas and other places. Since boulders cannot be directly used, stone crushing is a must. Therefore, a few stone crushing units can be set up at growth centres of the state, specially in and around Imphal.

(15) PAPAIN MANUFACTURE :

Papaya is also grown in Manipur extensively, and there is good scope for its extension in the valley and foothills. Thus, there is possibility of large scale extraction of papaya papain from the latex of papaya fruit. So, there is scope for
establishing one or two papain manufacturing (dried latex) hair oil units in the state.

There is also good demand of papaya papain, which is extracted from the latex of papaya fruit, in both domestic and foreign market. There is a worldwide shortage of this product. The former price of papain is about Rs.50 to Rs.60 per kg. If papaya is planted on a scientific basis, its yield per hectare may be about 2,000 kgs. of latex annually. If a scheme is prepared for planting papaya on plantation basis, say on 500 hectares, valuable foreign exchange can be earned, besides benefiting the local farmers.

(16) PINE-OIL EXTRACTION UNITS (TURPENTINE OIL):

As we know, coniferous forests covers about 2442.77 sq. kms. out of the total forested area (i.e. 15,154.94 sq.kms.) of the state. It is specially grown in Ukhrul area and in the transitional zone between hill and valley. Since the coniferous forests include specially the pine trees (about 2,440 sq.km), its growing stock is estimated to be 96.70 lakhs cu.metre. So, one or two pine oil extraction units can be easily established either at Ukhrul or somewhere in Imphal district.

(17) CINNAMON BARK OIL EXTRACTION UNIT:

Cinnamon grows over a wide area in the forests of Manipur west district (Tamenglong), Tengnoupal (Chandel), and in Burma border areas. So, one or two units of Cinnamon oil can also be established in the state specially in Imphal district.

(18) GINGER OIL, PICKLE & DEHYDRATION UNIT:

Considering the resources of Ginger in plenty in the hill areas of Manipur, especially Churachandpur district, one such unit can be established at Imphal in the valley area.

(19) CHROMITE GRINDING & PROCESSING UNIT:

Chromite is found abundantly at Ukhrul & Chandel district of Manipur. So, one or two Chromite Grinding & processing units can be established at the district H.Qtr. Moreover, one small scale industrial unit for manufacturing of steel goods from Chromite can be established at Imphal in the valley.

(20) SERPENTINE SLAB MANUFACTURING UNIT:

In Ukhrul district, serpentine rocks are found abundantly. Mention can be made of manufacturing of serpentine slab for costly carpets from serpentine rocks which are found abundantly in Ukhrul & other eastern parts of the state. This type of serpentine slab is very beautiful and costly also. So, at least one unit can be established at Ukhrul or Imphal.
(21) IDOCRASE (RARE STONE) & DIAMOND CUTTING UNITS:

Indocrase and some rare stones are available in the Chandel & Ukhrul districts of the state. So, one or two diamond cutting units can be established in the state.

(22) OTHER RESOURCE BASED INDUSTRIES:

Besides the above mentioned industries, there are many resource based industries like mushroom cultivation, Kusumlei oil, sunflower oil, Cardamom & spices grinding, flour mill, ice candy, straw board making, fly shuttle & loom mfg., agarbati mfg., surgical bandage mfg., Bamboo soote, Dry and fermented fish mfg.; units, tinned meat (specially chickens, pork, mutton etc.); Umorok oil (a kind of hot red pepper) extracting unit etc. may be set up in the state.

(IV) DEMAND BASED INDUSTRIES:

The existing demand based small scale industries of the state consist the following industrial units:

Safety Match, Bicycle tyres, tubes, cycle accessories & parts; cycle assembling & manufacturing; Tiles, Plastic goods & polythene bags, Footwear, Soap, sheet metals like buckets & steel trunks; Ink and Adhesive, Handmade paper & stationery items; Rolling
mill for brass sheets, steel re-rolling, Bakery & confectionery, Builders hardware, Nail manufacturing, Aluminium utensils, Umbrella manufacturing, Pharmaceutical units, Agricultural implements, Cotton hosiery, Phenyle, Truck body building, Candle making, Watch repairing, Electronic goods, and printing press etc. are located at various points in Imphal and its suburbs.

Some of them are discussed in details as under :-

(1) SAFETY MATCH :- Soft woods for making splints and veneer are abundantly available in the state. In the states like Tamil Nadu and Kerela, splints and veneer are sold in bags in open markets and making of safety match are all done in cottages.

The industry Department deputed for training some young entrepreneurs some years back and these entrepreneurs were settled in the trade to be further engaged in some factory in the state. The daily consumption of safety match for the whole state may be estimated to about 15,000 dozen. Considering all these, one or two match making factory may be established in the state.

(2) AGRO SERVICE CENTRE :

Now-a-days many cultivators have started increasingly using tractors, power tillers, diesel engine operated pump sets for their mechanised farms. These tillers and pump sets need regular repairing and servicing time to time. Again, with the
intensive mechanisation programme of the Agriculture Deptt., number of power tillers and pump sets are increased in the field works and people prefer to use them in their farms. For regular repairing and servicing of those power tiller and pump sets, a few agro-service centres in rural areas can viably be set up.

(3) SEMI-MECHANISED BAKERY :- There are small bakery units found existing in Imphal and small towns of the state. These units cannot meet the increasing demand of loaves, cakes, biscuits etc. In the hospitals in and around Imphal the daily consumption of loaf is so high that the present existing units cannot meet the demand. Further people have become habituated in using bakery products for their breakfast and tiffin. Existing units are very small and cannot produce quality products. Therefore, two or three semi-mechanised bakery units can be set up in Imphal or other important growth centre of the state.

(4) GENERAL ENGINEERING AND FABRICATION WORKS :- Now-a-days demand of fabricated items like window grills, gates, shutter, overhead tanks, agricultural-implements and equipments has also been increased tremendously. With the change and improvement of living standard, items like stools, furniture, sofa sets, dining tables, steel furniture, hospital beds etc. are increasingly demanded by public and offices. Three or four units which are
seen into existence in and around Imphal areas are not in a position to meet the demand. Since there will not be any power problem with the commissioning of Loktak hydro Electric project, a few such units can be established at Imphal and other growth centres of the state.

(5) AUTO-SERVICING AND REPAIRING: Combined auto servicing and repairing workshops capable of undertaking repairs and maintenance works are highly required to satisfy the changing needs of urban centres. Such units will be in a position to provide minor and major repairing and servicing to both automobiles and tractors.

At present number of vehicles is multiplied at a very high rate, No. of such vehicles viz. Buses, trucks, Jeeps, cars, Auto-rikshaws, Scooters, Luna moped etc. are increasing both in the urban and rural areas of the state. So, some auto repairing and servicing units are already established in and around Imphal and found running profitably. A few such units can be established in other districts and growth centres of the state.

(6) TYRE RETREADING: Retreading of used and worn out tyres has become very common as retreading cost is very low in comparison with that of new tyres. On an average, after coverage of 10,000 miles a tyre need to be retread.
The overall demand for tyres, whether retreaded or new is influenced by the road mileage and the number of vehicles on the road. As the new vehicles are increasing day by day there is growing demand for retreading. There are some such units running profitably in Imphal areas. A few units can be established at important traffic centres where the movement of vehicles is substantial.

(7) ALUMINIUM UTENSILS :- Aluminium utensils are generally popular with many families of low income and middle income groups, Aluminium utensils are lighter and cheaper than those made out of other metals. They are of two types:-(a) Sheet-Metal products and (b) Cast Articles, Cast articles manufacturing units are already established in and around Imphal.

There is no unit manufacturing sheet metal products in the state. Aluminium utensils are manufactured in a spinning lathe with the wooden moulds. But for items like pressed metals articles such as tiffin carriers, boxes etc. deep reaming power press is used instead of spinning lathes. Since there is a demand of aluminium utensils in huge number, a few units can be set up in and around Imphal and block head quarters of the state.

(8) HOSIERY :- The manufacturing of hosiery items like cotton vests and under wears can be taken up in the district very profitably. These items have good market prospects as consumer products with high replacement demand as the average life of hosiery
under garments is about 6-9 months. The demand of the item is increasing in view of improving standard of living in rural and urban areas. Considering the demand of hosiery goods one or two units can be established in a district where the basic facilities like power, land and good transport etc. are available.

(9) PRINTING PRESS CUM PHOTOSTATE CENTRE:— Even though there are many printing presses and photostate centres in Imphal Municipality area, the number of schools and colleges has been increasing to a great extent in the rural areas also. So, valuable documents, certificates, marksheets etc. are required to be duplicated. Moreover, books and journals are published regularly in the state. Specially from the state capital there is also colourful festivals round the year for which invitation cards, pamphlets, posters are always required. Keeping all these in view, a few printing press cum photostate centres can be established at almost all growth centres including district head quarters.

(10) OTHER DEMAND BASED INDUSTRIES:— Besides the above mentioned units other demand based industries like Distilled water, Builders Hardware, Bolts and Nuts, Cycle parts Mfrs.; Plastic Moulded goods, Sheets Metal units, Readymade Garments, Washing soap, Cement concrete poles, Dyeing and printing, Absorbent cotton, Handloom products, conduit pipe, Tin containers, Barbed wire, wire
nails, R.C.C. pipes & Blocks, Mosaic-Tiles, Leather footwears & Garments, Ball pen Refill and other paper articles, soft-drinks, Scientific glass wares and other items producing units as envisaged in the foregoing chapter may be established in the valley seeing the increasing demand of growing population.

Besides the above Resource-based & demand-based industries, there are some skilled-based industries in the state. Some of the skill based industries which are very popular and viable are discussed below:-

(a) CANE AND BAMBOO WORKS :- Cane and Bamboo are abundantly available in the Jiribam Sub-division of the district and may also be collected from other districts like Manipur south and west district where cane and bamboo are available in plenty. Cane furniture and other decorative items have a good market. Likewise bamboo items mat, basket and other handicrafts items have great demand. Cane and bamboo handicrafts items have export market too. Hence a few number of such units may be set up every year keeping in view of the increasing population and demand in the state.

(b) STONE DRESSING :- Stone slabs are used as wooden based in kutchha house construction. Now-a-days, stone slabs are used in building also. Traditional rice milling is done by stone grinding
machine and it is still continuing. Decorative stone items are also popularly used in the state and are also supplied outside the state. Stone of various quality hard and soft, both are available at Sekmai area and Nongmaiying hill etc. So, a few units of stone dressing may be set up at growth centres of the region.

(c) EMBROIDERY AND KNITTING :- Embroidery and woollen knitted garments are more and more popular. Handicrafts like embroidered clothes can capture markets outside the state. Nowadays, girls both literate and illiterate are interested in the job. Embroidery and knitting works are very old traditional skills of the womenfolk of the state. So, it becomes employment oriented industry to the womenfolk of the state. DIC(I) has also been imparting training to the girls of the Imphal district for the last 5 years and continuation of training programme in this trade is proposed for the coming years. Hence, a few more such units may be established at every district of the state.

Moreover, some other skilled based industries like Reed mat making, loin loom weaving and Dolls, Toys and Dance costumes units can also be established in the state and all of these industries should given proper attention.