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SISI, Imphal.

— 1997

IVa. Project for Carpentry and Blacksmithy Industry  
(Institutional/Societies) S.S.I.

1. Nature of Activity:- To manufacture Agriculture implements, handtools, wood & steell furniture, Fabrication of grills, wood carving and decoration Articles etc.

2. Importance:- Most of the population in India who live in villages are drectly or indirectly depends on Agriculture, Blacksmithy and Carpentary are perhaps the oldest known occupation of the human civilisation. they plays an important role in catering them with agricultural implements and house-hold articles, Building and Industrial Components, Toys, wood carving and decoratives articles, household furniture and fixtures. ect.

The industries grouped as carpentary and blacksmithy are the most important industries, having bearing on our day to day life. In Manipur state, where large industries specially forging industry are not developed. they had to depends mainly on local artisans for such items. Not a single well organised like this industry is available run by societies, however the efforts by TINY/cottage industries are being made.

To make the project more realistic location and infrastructure must be available like near main roadside, water and eclectricity are to be considered as good site localtion.

3. Market potential/Demdand feasibility:-

The products under the purview of KVIC are having simple manufacturing process having more utility and the products are

useful for all status of people. The demand for agricultural implements household, buildings and industrial utilities, manufacturing of doors, windows, office equipments etc. are increasing day to day due to mechanisation of agricultural and rural industries. The main advantage of all these industries are that the manufacturing process is free from pollution in wood industries particularly. The demand of these products are increasing in direct proportion to its growth population and overall standards of living of people in general. Hence there are vast scope for further expansion and marketing through hardware and workshop tools dealers, open market bazar, furniture shops etc. in the Manipur state.

Due to mechanisation of Agricultural and rural industries, particularly in Manipur state, the demand are for better quality products Agricultural implements and raising of people living standards more comfortable furniture are high demand in urban areas as well as rural area.

Process of Manufacturing:-

A. Blacksmithy:

Raw material (M.S)  
 |  
 Cutting  
 |  
 Heating  
 |  
 Forging  
 |  
 Grinding  
 |  
 Shape  
 |  
 Dispatch  
 |

B. Carpentry:-

Raw material (wood)  
 |  
 Marking  
 |  
 sawing  
 |  
 Planning  
 |  
 Chiselling  
 |  
 Bosring  
 |  
 Skeleton/fram assembling  
 |  
 Fixing of balancing material  
 |  
 Despatch.

(A) Different types of knives, axes, hammer, chisel, sickles etc. are commonly used as hand tools. They are manufactured from mild steel plates, round, scrap and spring etc.

Raw materials are cut into the required dimension with the help of shearing machine or chisel. Then they are heated in the hearth furnace at 700 - 1000 °C temperature and forging was done as per required shape and grinding is done. If sharpening is required, some more treatment is to be done and the process is repeated till required design and shape is achieved.

(B) Different types of building materials are such as window and doors frames, table, sofa set, chair, dressing table, bed sets, wooden almirah etc. are the products of carpentry industry.

They are manufactured from the raw material like wood, teak plywood and sunmica etc.

(A) Process of Manufacturing in brief of carpentry:-

(i) Marking:- Wooden planks and battens collected from the saw mill are seasoned for a few days by exposure to sun light. They seasoned wood are then marked according to the dimension for producing the required shape and set cut with the help of various instruments such as caliper, try square, marking gauge etc.

(ii) Sawing:- Marked wood is then sawing along with grains or across the grains by using circular and hand saw.

(iii) Planning:- Planning is the operation of trying up a piece of wood by planner they should be perfectly straight in all directions, parallel in width and thickness and width edges square to the faces.

(iv) Chiselling:- It is the process of cutting and small stock of wood to produce the desired shape. Using mallet and chisel being tilted slightly to one side to give a shearing cut desired mortise and tenon are made.

(v) Boring:- Boring is the process of producing round holes through or blind in the wood and it can be done straight or inclined to suit the type of the work.

(vi) Frame Assembly/Skeleton: After the planned and chiselled different parts and components are assembled and fixed with the help of glue (fevicol), nails etc. to form the skeleton or frame of the particular furniture. Strict care and quality control measure been given in this process of assembly, as the life and quality of the finished product mainly depends upon the frame of the furniture.

(vii) Fixing of balancing materials: After satisfying necessary standard and required ply wood and sunmicak are fixed on the skeleton/frame using glue, nails etc after this, other necessary balancing materials like handle, lock, hinges, glass, wall paper and other decorative items have been fixed to get the final products.

## 5. Details of the Scheme :-

### A. Background information:-

- |   |   |
|---|---|
| (i) Name of the product and product, if any | (1) Knives, axes, chisel and sickle, bed set, sofa set, dressing table, chair, windows, etc.<br>(2) Nil |
|---|---|

- (ii) Type of unit  
(Individual/Institution) Individual/Society
- (iii) Estimated Annual Capacity :-  
Quantity - 1520 Nos of units Value Rs.21,50,000  
2800 Units of Nos
- (iv) Estimated working days :- 300 days in a year
- (v) Working hours in a day :- 8 hours
- (vi) Type of raw materials:-  
Please refer annexure - iv  
Value - Rs. 10,88,000
- (vii) Wastage if any particulars:- Iron, Timber and saw  
Quality : 20 MT, 60 cft.  
Value: Rs. 6.50 lakhs.
- (viii) Utilities (p.a):-  
(a) Electricity : Connected load - 25 HP  
HPxPFxhrsxdaysx% utilisation  
No of units= 25x0.785x300x0.6 =28269 units  
@ Rs. 1.50/unit = Rs. 42,390  
(b) Water : L S Rs. 2000  
(c) Fuel : 5 litres diesel/day  
= 1500 litres diesel/year  
@ Rs 12 per litres = Rs. 18,000  
Total utilities = Rs. 62,390/-

ix Tools Equipments/Machinery

Please refer Annexures - II

Values = Rs. 56,000

- (x) Where work would be carried out: Imphal, Manipur.

(ii) Approximate area required :

Please refer Annexure - I.

<u>Particular</u>	<u>Size</u>	<u>Area</u>
1. Building		
(a) workshed-cum-office	60' x 20'	120 sqft
(b) Store/godown	30' x 20'	600 sqft
(c) Land	own	

Construction @ Rs. 200 per sqft

Value = Rs. 3,60,000

#### 6. Manpower Required

Please refer Annexure - V-A

- (1) Technical - 6
- (2) Administrative - 5
- (3) Direct or labour - 5

Total - 16 Nos

Value - Rs. 2,40,000  
60,000

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=Rs. 3,00,000 per year

#### 7. Working Capital Requirement

I. Fixed working capital needs:-

(a) Salaries	Rs. 2,40,000
(b) Repaire and maintenance replacement	Rs. 30,000
(c) Administrative expenses (including rent stationary and postages)	Rs. 20,000
(d) Interest on term loan @ 16% PA (annexure-X)	Rs. 88,000

(e) Insurance at 1% of C.E+one cycle of turn over	Rs. 25,000
	-----
	Total 3,76,000

Therefore fixed W.C for one operating cycle = Rs 94,000

II. Variable working capital:-

(a) wages	15,000
(b) Interest on W.C @ 18%	15,000
(c) Raw material	10,88,000
(d) Packing materials	12,000
(e) Other consumables	20,000
(f) Transport	1,50,000
	-----
	Total = Rs. 13,45,000

Therefore variable W.C for one operating cycle = Rs. 3,36,000 per cycle.

Therefore, total w.c requirement :

(i) F.W.C	=	94,000
(ii) V.W.C	=	3,36,000
		-----

Total W.C requirement = Rs. 4,30,000

4,30,000 x 90% of this would be bank loan.

Therefore, working capital loan = Rs 3,87,000

Therefore, the margin money = Rs. 43,000

III. Depreciation:-

Particular	Value	Depreciation	Value of Depreciation
1. Workshed/building	3,60,000	5%	18,000
2. Plant & machinery	3,56,000	10%	35,600
3. furniture & fixture	20,000	20%	4,000
	7,36,000		57,600

(iv) Cost Analysis ( at 80% capacity utilisation)

Cost production:-

(i) Fixed cost = 4,10,000

(II) Variable cost = 13,45,000

Total cost of production Rs. 17,55,000

(iii) Estimated sales realisation (80% of the total)

Particular	Qty	Rate Rs/unit	Value in Rs.
A. (i) Windows frame	5000 Nos	35	17,500
(ii) Doors frame	400 Nos	150	60,000
(iii) Double bed	80 Nos	4000	3,20,000
(iv) Dressing table	120 Nos	2,500	3,00,000
(v) Sofa set	200 Nos	5,000	10,00,000
(vi) Table	100 Nos	45	4,500
(vii) Dinning set	120 Nos		
	1520 Nos		20,86,000
B. (i) Chisel	1000 Nos	20	20,000
(ii) Knives	700 Nos	15	10,500
(iii) Axes	600 Nos	35	21,000
(iv) sackles	500 Nos	25	12,500
	2,800 Nos		Rs. 64,000
Total (A+B) =	4,320 Nos.		Rs. 21,50,000

Value = Rs. 21,50,000

(vi) Gross surplus:

= Sales Value - cost of production

= 21,50,000 - 17,55,000

= Rs. 3,95,000

(v) Net surplus:

$$= \text{Gross surplus} - (\text{Interest on term loan and interest on W.C loan} + \text{Depreciation})$$

$$= 3,95,000 - 2,15,000 \quad (88,400 + 69,000 + 57,600)$$

$$= \text{Rs. } 1,80,000 \quad 2,15,000$$

(vi) Desposable surplus:

$$= \text{Net surplus and Depreciation}$$

$$= \text{Rs. } 1,80,000 + 57,600$$

$$= \text{Rs. } 2,37,600$$

The project can payback term loan in 3 years even at a capacity utilisation of 80%

Ratio Analysis:- (at 80% utilisation)

i. Debt equity ratio (DER)

		Rs. in lakhs	
DER =	Debt	Debt: term loan	5.52
	equity	W.C loan	3.87
		equity own investment	1.84
=	9.39		1.50
	3.34	(share capital) including land value	3.34
=	2.81:1		

ii. Capital employed in value of output ratio.

$$= \frac{\text{Fixed capital} + \text{working capital}}{\text{output}}$$

$$= \frac{7.36 + 3.87}{21.50} = \frac{11.23}{21.50} = 0.52:1$$

iii. Capital employed to net value employed ratio:

$$= \frac{\text{F.C} + \text{W.C}}{\text{Net value}}$$

$$= \frac{11.23}{9.22} = 1.21:1$$

Net value = output - R.M, PW Fuel, consumable stores depreciation.

$$= 21.50$$

iv. Investment per worker Ratio

$$\frac{\text{F.C + W.C}}{\text{Total No of workers \& staff}} = \frac{12.28}{9.22}$$

$$= \frac{11.23}{16} = \text{Rs. 0.70 lakhs.}$$

v. Production per worker =  $\frac{\text{output}}{\text{Total workers \& staff}} = \frac{21.50}{16}$

= Rs. 1.34 lakhs.

vi. Percentage Raw material to value of output (including packing materials)

$$= \frac{\text{Value of R.M}}{\text{value of output}} \times 100$$

$$= \frac{10.88}{21.50} \times 100$$

$$= 50.6\%$$

B.E.P calculation.

$$\text{B.E.P} = \frac{\text{Fixed cost}}{\text{contribution}} \times 100$$

$$= \frac{\text{Fixed cost}}{\text{sales price} - \text{variable cost}} \times 100$$

$$= \frac{4.10}{21.50 - 13.45} \times 100 = \frac{4.10 \times 100}{8.05} = \begin{matrix} 50.9\% \\ 51\% \end{matrix}$$

Address of Machinery supplier.

1. M/S Standard Engineering co. Ltd.  
NSE Estate Goregaon  
Bombay - 63
2. M/S R.K Machine tools  
Industrial Area - A  
Ludhina - Punjab - 141 003
3. M/S Bannerjee Chakraborty & Co (p) Ltd.  
135, canning street,  
Calcutta
4. M/S Globe Engg. Co  
2524 G. G. Road,  
Delhi.

## Annexure - I

INDUSTRY	Purpose for which construction is proposed	Specification given by industry Director, location area & capacity	Cost of construction per sqft	Total cost expected Rs.	Time reqd. for construction in month	Anticipated life of the assets (year)	Depreciation to be included in cost of production	Certificate by Architect.
1	2	3	4	5	6	7	8	9
Blacksmithy and Carpentary Unit	(i) office-cum-workshed	60'x20'	Rs. 200	3,60,000	3 months	20 years	Rs. 18,000 @ 5%	-
	(ii) Godown/ store room	30'x20'	-----					
	Total = 1,800 sqft							

INDUSTRY	Process	Why implement industry Director, location area & capacity	Where to be pro- cured & where to deprecia- tion	the re- sult (yrs.) deprecia- tion	10 yrs. 10%	Through Bank	Yes	Units skilled workers available	25,000	1 yr.	1 yr.	3 months	arrangements for servicing inspection & repairs.	cost of including transport installa- tion etc.	assistance period if regd. for suppl. (in months)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Blacksmithy and	Saw material	(1) Circular saw 6 x 18" with 2HP motor	Listed se- parately for all machines	10 yrs. 10%	"	"	"	"	25,000	1 yr.	"	3 months			
Carpentry	cutting heating forging grinding shape despatch	(2) Wood planer with 3HP motor (3) profiles cutters m/c with 2HP motor (4) Lathe m/c 6' bed with 10HP motor	"	10 yrs. 10%	"	"	"	"	30,000	"	"	"			"
Unit	marking sawing planning chiselling boring skeleton fixing of balancing materials	"	"	10 yrs. 10%	"	"	"	"	16,000	"	"	"			"
				10 yrs. 10%	"	"	"	"	65,000	"	"	"			"
				10 yrs. 10%	"	"	"	"	8,000	"	"	"			"
				10 yrs. 10%	"	"	"	"	36,000	"	"	"			"
				10 yrs. 10%	"	"	"	"	20,000	"	"	"			"
				10 yrs. 10%	"	"	"	"	50,000	"	"	"			"
				10 yrs. 10%	"	"	"	"	17,000	"	"	"			"
				10 yrs. 10%	"	"	"	"	12,000	"	"	"			"
				10 yrs. 10%	"	"	"	"	10,000	"	"	"			"
				10 yrs. 10%	"	"	"	"	5,000	"	"	"			"

MACHINERY

Annexure - II contd.

Industry	Process	Type of machinery/Implement industry Director, location area & capacity	From whom & where to be procured & where to be depreciated	Life of the machine (yrs & depreciation cost)	Mode of supply	Whether spare parts provided alongwith supply	Arrangements for servicing inspection & repairs.	Cost of m/c including transport installation etc.	Guarantee period if any (in months)
1	2	3	4	5	6	7	8	9	10
Blacksmithy									
and	Raw material	(13) Hearth furnace oven type medium size	Listed separately for all machines	10 yrs. 10%	Through Bank	Yes	Units skilled workers available	20,000	1 yr. 3 months
Carpentry	Cutting heating forging grinding shape despatch	Marking sawing planning chiselling boring skeleton fixing of balancing materials	(14) Anvil & bench vice 4" (15) Sheet shearing m/c	10 yrs. 10%	"	"	"	3,000	"
Unit				10 yrs. 10%	"	"	"	9,000	"
				10 yrs. 10%	"	"	"	10,000	"
				5 yrs. 10%	"	"	"	13,000	"
				10 yrs. 10%	"	"	"	10,000	"
				5 yrs. 20%	"	"	"	10,000	"
				10 yrs. 10%	"	"	"		"
				yrs.	"	"	"		"

Total = Rs. 3,24,000  
32,400

## Machinery/Equipments/Implements

## Annexure - II B

Time reqd. for installation in days	Total time reqd. for commissioning from the day order placed	Time reqd. to attain full capacity	Technical support provided from manufacturers	Whether special type of electric city/power required	Whether insurance coverage provided	No. of worker/ nature of work	Whether trgn. is necessary & if so, its nature.	Remarks
17	18	14	15	16	17	18	19	20
1. 1 weeks	7 months	4 weeks	single working	2HP motor	Yes	cutting	ND	-
2.	"	"	"	3HP "	"	planning	"	
3. "	"	1 week	"	2HP "	"	profile cutting	"	
4. 1 month	"	1 month	"	10HP "	"	cutting	"	
5. 1 week	"	4 weeks	"	1/2HP "	"	boring	"	
6. 1 week	"	2 weeks	"	-	"	bending	"	
7. 1 month	"	2 weeks	"	-	"	welding	"	
8. 1 week	"	4 weeks	"	5HP-3phase	"	gas welding and cutting	"	
9. 1 month	"	2 weeks	"	-	"	presing	"	
10. 1 week	"	2 weeks	"	-	"	cutting	"	
11. 1 weeks	"	1 week	"	2HP motor	"	benching	"	
12. 2 weeks	"	2 weeks	"	-	no	grinder	"	
13. 1 month	"	4 weeks	yes	-	yes	heating purpose	yes (operation of heating system of the furnace)	
14. 1 week	2 months	1 week	single	-	"	gunching	no	
15. 1 week	2 months	1 week	single	-	"	sharing	no	

Targets :- Physical (Qty + value)

Annexure - III

Targets:-

I. Production/Processing:-

Items to be produced :- Dressing table, windows and door

(i) Whole sales :-	Rs. 21,50,000
(ii) Retail sales :-	-
(iii) Percentage of the rated capacity :-	80%

III. Employment :-

(i) Staff.

- a. Administrative/supervisory - 5 Nos
- b. Technical - 6 Nos

(ii) Direct cost :-

a. Technical/skilled workers - 5 Nos  
on the salary borne by  
Institution.

b. Beneficiaries self-employment -

-----  
Total (i + ii) = 16 Nos

IV. Employment/Wages (in Rupees)

(i) For indirect labour - Rs. 2,40,000

(ii) For direct labour - Rs. 60,000

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Total - Rs. 3,00,000

Annexure - IV

INDUSTRY	Type of raw material required	From where to be procured, place, & distance from project place	Quantity required for one year	Minimum Qty. reqd. to keep work going cycle	Intervals of supply & cost of transport	Mod of supply & cost of transport	Cost per unit for raw material included in transport taxes etc.	Total cost of raw material (Annual, if any)	Remarks
1	2	3	4	5	6	7	8	9	10
Blacksmithy	(iii). MS pipes	Sail,							
And	2. MS sheets	Dinapur							
Carpentry	3. Angles of different gauges & sizes.	274 kms							
(ii) 1. Timber locally available									
	2. Seasonal saw	-do-	700 cft	150 cft	3 months		Rs. 90/cft	63,000	
	3. Sunmica	-do-	200 cft	50 cft	-do-		Rs. 150/cft	2,25,000	
	4. Dustons	-do-	100 mt	25 mt	-do-		Rs. 250/cft	50,000	
							Rs. 1,500/mt	1,50,000	
								Total = Rs. 10,88,000	

Total = 200 mt + 2400 cft

Packing materials :-

Polythene bags - 15

and Dunlop etc.

Total = Rs. 12,000

Rs. 11,00,000

I. Technical/Administrative and Direct labour

Category	Designation	Number payable (Rs.)	Total per months (Rs.)	Expected expendi- ture in a year (Rs.)
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A. Technical:

1.	Supervisory	2 Nos	2500-50-3000	5000	60,000
2.	Skilled worker	4 Nos	1500-30-1800	6000	72,000
Total = 6 Nos					1,32,000

B. Administrative :-

1.	Manager	1 No	3000-1000-4000	3000	36,000
2.	Accountant-cum-clerk	1 No	2500-50-3000	250	30,000
3.	Store keeper	1 No	1500-30-1800	1500	18,000
4.	Watchman/peon	2 Nos	1000-25-1250	2000	24,000
5 Nos					1,08,000

Therefore, Total (A+B) = Rs 2,40,000

II. Direct labour:

Category of direct labour	No. of workers	Rate/day/ unit	Mode of payment	Total during the year	Days/ week
1. Unskilled workers	5 Nos	Rs. 40/=	monthly	60,000	6 days

Grand (I + II) = 2,40,000 + 60,000

= Rs. 3,00,000

Term loan requirement :

Annexure - X

Particulars	Value in Rs.	Margin %	Margin money	Term %	loan value in Rs.
1. Land	own				
2. Building	3,60,000	25%	90,000	75%	2,70,000
3. Plant & Machinery	3,56,000	25%	89,000	75%	2,67,000
4. Furniture & fixture	20,000	25%	5,000	75%	15,000
Total = 7,36,000			1,84,000		5,52,000

