

CHAPTER - III

A TECHNICAL PROFILE OF SILVER SMITHY

MM. TECHNICAL ANNEXURE-1029W
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3.1 INTRODUCTION :

In this chapter we briefly present information regarding various technical aspects of silver smithy. These aspects are :

- A) Technique of production.
- B) Structure of the craft.
- C) Economics of the craft.

The information given in this chapter is entirely based on chapter two, chapter three, and chapter five, of a publication. "Handicrafts in Maharashtra published by the Maharashtra Census Office in the year 1968.

3.2 TECHNIQUE OF PRODUCTION :

The silver smithy craft of Hupari has four broad divisions of work as given below.

1. The Atni section which deals with melting of silver.
2. Tashta and kut section in which silver is turn into strip and wires.
3. The press machine section.
4. The assembly section.

3.3 THE MELTING OF SILVER :

The silver bullion brought for melting is in different forms and shapes with different degrees of purity. According to the requirements of the customers, the craftsmen are the Atni Section, mix with silver other metals like Zinc, etc.

For the Atni Section the following tools, implements and the machinery are required.

TABLE NO.3.1

THE ATNI SECTION THE FOLLOWING TOOLS IMPLEMENTS AND THE MACHINERY

ARE REQUIRED.				
6 No.	Name of tools implements etc.	Local Name	No.	Value in 1961 (In Rs.)
1.	Electric Motor 1/4 H.P.	Motor	1	350
2.	Bellows	Bhata	1	100
3.	Furnace	Bhutti	2	40
4.	Matrix	Pagha	12	30
5.	Crucibles	Mus	60	40
6.	Anvil	Aivan	1	7
7	Hammer	Hatoda	2	20
8.	Hammer	Motha Hatoda	2	30
9.	Scissors	Katri	1	30
10.	A pair of tongs	Chimta or Gavi	6	50
11	Wooden pots	Kund	2	2
12.	A set of weights and balances	Vajne	One Set	175

Mechanical tools like electric motor, are bought in Kolhapur market but tools at number 3, 7 and 8, 10 and 11 are prepared by local carpenters, iron smiths, and other craftsmen. A crow bar, ladles and blow pipes are also required for the Atni Section.

3.4 PASHTA AND SUT SECTION :

In this section the silver ingots are converted into silver strips or wire the tools required for this section are given below.

TABLE NO.3.2

THE TOOLS OF THE PASHTA AND SUT SECTION

Sr.No.	Name of the tools implements etc.	Local name	No.	Value In 1961 (In Rs.)
1.	Electric H.P.Motor 3	Motor	2	1800
2	Strip drawing machine	Machine	3	9000
3	Wire drawing machine	Sut machine	3	9000
4	A set of weights and balances	Vajane	1	175
5	Scissors	Katri	2	18
6	Hammer	Matoda	2	4
7	Wrench set	Panha set	1	10
8	Furnace	Bhatti	1	10
9	Iron rod	Sali	2	3

All these tools and implements are purchase from Kolhapur market. However, hammers, and scissors, as also the furnace are locally made. The strip drawing machine and the wire drawing machine are purchased at Ahmedabad where the machines are produce.

3.5 THE PRESS MACHINE SECTION :

This section manufactures various designs and other parts which are ultimately assembled into a final ornament in the Karkhanas or assembly section. The tools and machine required for this section are given below.

TABLE NO.3.3

TOOLS AND MACHINE OF THE PRESS MACHINE SECTION

<u>Sr.No.</u>	<u>Name of tools, implements etc.</u>	<u>Local name</u>	<u>No.</u>	<u>Value in 1961 (in Rs.)</u>
1.	Fly press machine	Press machine	9	4409
2.	Dies	Dies	85	2315.00
3	Electric grinder	Drill machine	1	518.00
4.	Scissors small	Chhoti Katri	8	20.00
5	Scissors big	Mothi Katri	2	20.00
6	Vice	Chimta	1	30.00
7	File	Kanas	15	55.00
8	Hammer	Hatoda	4	20.00

Most of the tools required for the section are purchased in Kolhapur market and the designs of dies are generally prepared by local craftsmen.

3.6 THE ASSEMBLY UNIT (KARKHANA)

This is the section in which financially the ornaments of the silver are manufacture the owners of the unit are known as karkhanas. They receive orders from the traders along with silver bullion. Which they get process from the sections mentioned above. In this section most of the workers are female workers and they are given. The silver rings (Matya from which they prepared chains etc.) The tools and machines required for this section are given below.

TABLE NO.3.4
TOOLS AND MACHINE REQUIRED FOR THE SECTION

Sr.No.	Name of tools implements etc.	Local name	No	Value in 1961 (in Rs.)
1.	Hand Drill machine	Drill Machine	-	7.00
2	A pair of tongs	Chimta	8	10.75
3	Big scissors	Mothi Katri	2	22.00
4	Small scissors	Chhoti Katri	3	4.00
5	Hand Stove	Stove	2	50.00
6	Hammer	Hatoda	2	2.00
7	Writing slate	Pati	4	5.00
8	Iron pot	Bhanda	5	31.00
9	A set of weights and balances	Vajne	1	90.00
10	Vase	Barni	4	10.00

As before the most of the simple tools are locally purchased and machine like hand drill machine, big scissors, hand stove, are purchased in Kolhapur market. Apart from the tools mentioned above the following minor tools are also required and locally available.

- A. The vest which is a mud slate board used for soldering.
- B. An iron thin broad which is also use in the process in the soldering.
- C. The Tad an iron flat, rectangular pan which is used for spreading coal ash on which the various parts of the ornaments are spread in a proper design for soldering.

3.7 THE RAW MATERIAL AUXILIARY MATERIAL :

The main raw material silver is supplied by the traders who deal in silver ornaments. The accounts are settle at the time of Diwali festival when the Karkhanas remain closed for about fifty days at this time. The accounts between the trader and the karkhandar as also between the karkhandar and the workers are settle during this period.

The karkhandars donot purchase silver but they have to purchase other raw materials the list of which is given below.

- 1. Hard coke.
- 2. Navasagar
- 3. Charcoal powder.
- 4. Charcoal for heating furnace.

5. Mobil oil as a lubricant.
- 6 Zinc and brass to be mix with silver.
- 7 Borax and silver solder pieces, for soldering the ornaments.
- 8 Kerosene oil for heating the stove.
- 9 Chemicals like sulphuric acid, Nitric acid, sodium cyanide silver powder and rithal soap nut which are used for polishing the ornaments.
- 10 Ash, firewood and dung cake which are used fuel for heating the water necessary for polishing.

In the melting section generally electricity is used. Almost all these raw materials are sold by a local organization Chandi Audyogik Sahakari Sangh Ltd.,

So far as Anni section and press machine section are concerned, the minimum space required is 25' X 20' X 8' for the press machine section, the minimum space required is 30' X 30' X 8'.

In the photographs given in the following pages different processes involved in the manufacturing of silver ornaments are shown.

3.8 ARTICLES AND DESIGNS :

Following are the main articles which are manufactured at Hupari.

<u>TYPES OF ORNAMENT</u>	<u>LOCAL NAMES</u>
1. Head Ornament	: Hair Fin, Bindya Veni, Gajara.
2. Ear Ornament	: Chawkadiya, Chawphuli, Bugadi, Kudak and Kudyu
3. Neck Ornament	: Bormal, Mangalsutra, Eksar, Sari, Har, Chandra Har etc.
4. Arm Ornament	: Bracelet, Patlya, Poche, Bilwar, Waki, Bajuband, Kankan, Kade, Tode.
5. Anklets	: Painjan, Chal, Tordi, Koylee, Spring, Tordi, Payache, Wale, Sankhali etc.
6. Waist Ornament	: Kardoda, Kamar Patta, Killi Akade, Katiband Kardodi, Judi, etc.
7. Finger Ornament	: Angathi
8. Toe Ornament	: Masolya, Kandephul, Vedhan, Jodvi.

3.9 ORGANIZATIONAL STRUCTURE OF SILVER SMITHY AT HUPARI :

The organizational structure of silver smithy of Hupari is unique mixture of private enterprises and Cooperative enterprises. It has following organizations.

A) CHANDI KARKHANDAR ASSOCIATION, HUPARI :

Hupari which was started in 1944 and got Registered in 1948. The main object of the Association is to protect the interests of

the Karkhandars and the workers in the industry.

To avoid unhealthy competition the Association has made some rules and regulations nobody can start a silver smithy units at Hupari without the permission of the association at present it has 807 members. This Association has been rendering various services to the members of which supply of tools and machinery chemicals, kerosine, other raw materials are important. Infact before 1953 this association had started its own bus services from Hupari to Kolhapur and back.

B) THE SILVER SMITHY OF HUPARI HAS A COOPERATIVE ORGANIZATION
ALSO :

It is name as Chandi Audyogik Sahakari Sangh Ltd., which was establish on 4th April, 1956 under the cooperative act. This organization also provides various raw material to the silver smithy of Hupari. It also has opened a press section. At present it has 807 members it share capital is Rs. 95920 it has Reserve Funds of Rs. 121816 and other funds of Rs. 135185 and has earned net profits of Rs. 16332 in the year 1987-88. It also has an investment of Rs. 48065.

C) CHANDI MAL UTPADAK SAHAKARI SANGH LTD., :

This cooperative organization was started in the year 1960. It runs an upto date melting section (Atni Section). It gets credit facility from Kolhapur District Central Cooperative Bank

It also manufactures silver ornaments.

At present the Chandi Mal Utpadak Sanakari Sangh has 807 members with a share capital of Rs. 100280 its reserve funds amount to Rs. 28065. The net profits 12950 earned by this unit were Rs. 12950. In the year 1986-87. It manufacture silver ornaments worth about 33888 kilograms of silver employs.

According to records of All India Handicrafts Boards in the year 1934. There were 373 production units comprising 16, Atni Units, 35 wire and strips units 81 chain making units, 15 assaying unit and 226 assembly units.¹

In the same year the industry provided direct employment to 3000/00 male workers on a regular basis and provided spare time work for 1000 female and children. The annual production was estimated around rupees 10 crores.²

According to a news paper articles there were 600 silver smiths in Hupari, 100 silver smiths in pattankodoli, 60 silver smiths in Talange, 30 silver smiths in Yaligud, 10 silver smiths in Ingali and 17 silver smiths in Manguar. All these are villages within a radius of 7 kilometer from Hupari. The Industry provided direct employment to 3000 workers apart from spare time work for local females and childrens. Monthly turnover is around Rs. 20 lakhs.³

D) BANKING FACILITY :

Another interesting feature of silver smithy of Hupari is in the form of a cooperative Bank named the Paise Fund Shetki Sahakari Bank Hupari. This was establish in 1950. This Bank advances loans to craftsmen a start a new establishment of silver smithy.

The most important aspect of solver smithy of Hupari is the predominant role of the private enterprises. Most of the establishments engaged in silver smithy at Hupari are, what can be appropriately termed as Household establishments that employ mainly the members of the household. The entire unit is a small compact one, though they also engage outside labour.

It is tobe noted that the most of the unit (more than 45% employ less than 6 workers, mainly the members of the households indicate the domestic character of the silver smithy of Hupari).

3.10 SOCIO ECONOMIC PROFILE OF THE CRAFTSMEN FAMILY :

The following data gives us a general idea about the socio economic profile of the craftsmen family for the year 1961.⁴

It is important note that silver smithy of Hupari is not restricted to only the traditional community of sonars. According to 1961 census the craftsmen belonged to different religious and various sub castes as given below.

1. Maratha (2) Mali, (3) Sali, (4) Koli, (5) Mahar, (6) Sonar.
7. Korvi (8) Shimpi, (9) Dhangar (10) Kumbhar, (11) Sutar,
12. Mang (13) Jangam, (14) Nhavi (15) Kingayat and (16) Brahmin.

There are craftsmen from Muslim, Christian, and Jain religions also.

It is mentioned that the introduction of machinery has broken the caste barrier. However, in one particular aspect the Mahar caste workers dominant that is in the production of Gujarav, which mean Hallow Join place silver balls. It is said that this work puts heavy strain on lungs and heart and the crafts men become generally unfit for any physical work after the age of forty.

3.10.1 THE DISTRIBUTION OF WORKERS BY RELIGION :

In Table No. 3.5 the classification of workers by religion is given.

TABLE NO.3.5

THE CLASSIFICATION OF WORKERS BY RELIGION

Name of the religion	Persons			Percentage
	No. of workers			
		Male	Female	
Hindu	1141	806	335	73.76
Jain	268	208	60	17.32
Muslim	136	101	35	8.79
Christain	2	-	2	0.13
Total	1547	1115	432	100.00

It is rather curious that no member of Buddhist religion is engaged in this craft. 73.76 per cent workers are Hindus while 17.32 per cent and 8.79 per cent belong to Jain and Muslim religion respectively.

3.10.2 AGE CLASSIFICATION OF WORKERS :

The distribution of the workers by broad age groups is shown in the following table No. 3.6

TABLE NO.3.6

AGE CLASSIFICATION OF WORKERS

<u>Age Group</u>	<u>Persons</u>	<u>Males</u>	<u>Females</u>	<u>Percentage</u>
0 - 14	187	90	97	12.09
15- 34	1023	751	272	66.13
35 - 59	333	270	63	21.52
60 & above	4	4	-	0.26
Total	1547	1115	432	100.00

We thus find that two thirds of the workers belong to age group 15-34. The employment of children i.e., in age group 0-14 is also considerable because as many as 12.09 per cent (or roughly one eighth) workers belong to this age group. Boys are Here again the boys and girls are almost equally represented. Boys are employed especiall; in the press section and in polishing

process as Panke while girls are invariably engaged in preparing chain out of rings and in making bittis which are ultimately converted into hollow balls.

3.10.3 LITERACY :

Since the craftsmen working in this craft are drawn from various castes, the number of literate workers was as high as 808 or 52.23 per cent of total workers. However, persons holding technical degrees, etc. are not at all working in this craft. The percentage of literate females was very low for only 15.04 per cent female workers were literate while 66.64 per cent male workers were literate. The following table shows the distribution of workers by educational level.

TABLE NO.3.7

LITERACY

Educational Level	No. of workers		
	Persons	Males	Females
Illiterate	739 (47.77)	372 (33.36)	367 (84.96)
Literate (without educational level)	233 (15.06)	217 (19.46)	16 (3.70)
Primary or Junior Basic	556 (35.94)	507 (45.47)	49 (11.34)
Matriculation and above	19 (1.23)	19 (1.71)	- (-)
Total	1547 (100.00)	1115 (100.00)	432 (100.00)

Note : Figures within brackets indicate percentage to total

These literacy percentage for the district and the village is 26.30 per cent and 27.04 per cent, respectively. However, we cannot compare these figures with that obtained for the workers engaged in silver smithy at Hupari because, the population of the district and the village includes population of age group 0-4 which by convention, has been treated as illiterate and hence the effective literacy rate will be still higher for the district and the village.

3.10.4 PERSONS WORKING IN THE CRAFT WHO ARE BORN OUTSIDE

HUPARI i.e. MIGRANTS

The effect of migration on a craft is considerable because new ideas are brought in by the migrants. Since in most cases migrants are young, they help to accelerate the progress of the craft. The data on migration in respect of workers engaged in this craft are presented in the table in next column. A person is considered a migrant if his place of birth is other than Hupari.

TABLE NO.3.8

MIGRANT WORKERS

Place of Birth	No. of workers			
	Persons	Males	Females	Percentage
At Hupari	755	613	142	48.8
In other village/town but within Kolhapur district	467	296	171	3.3
Outside Kolhapur District but within Maharashtra	52	32	20	20.3
In Mysore State	272	173	99	17.5
In Madras State	1	1	-	0.0

As per our definition, less than half the number of workers (48.8 per cent) are non migrants. Among males 54.98 per cent are non migrants while 32.87 per cent females are non migrants. This sharp difference in non migratory character between male and female workers is due to migration of females consequence upon marriage.

3.10.5 LITERACY OF MIGRANTS :

It is generally believed that migrants to a place for better equipped by skill and craftsmanship and this reflected, to some extent, in the literacy data. However, the analysis of the literacy data obtained through the census slips reveals that there is not much of a different in literacy standards between migrant workers as non migrant workers. Among migrants, 51.77 per cent are literate while among the non migrants percentage of literate workers is 52.71 per cent. The following table shows the classification of migration workers by sex and educational level.

TABLE NO.3.9LITERACY OF MIGRANT WORKERS

Educational Level	Migrant workers			
	Persons	Male	Females	Percentage
Illiterate	382	137	245	48.40
Literate (without educational level)	114	100	14	14.40
Primary or Junior Basic	286	255	31	36.10
Matriculation and above	10	10	--	1.10
Total	792	502	290	100.00

It is also believed that among migrants, proportion of young population is more than that among the workers. Though there are differences in the proportion of migrants among various age groups as compare to that of local population, yet the differences are too wide, Thus whereas 69.32 per cent migrations in age group 15-34 we find that 62.78 per cent non migrants are in this age group. The following table shows the distribution of migrant workers by broad age group and sex.

TABLE NO.3. 10NUMBER OF MIGRANT WORKERS

Age group	Persons	Males	Females	Percentage
0 - 14	78	42	36	9.85
15 - 34	549	343	206	69.32
35 - 59	162	115	47	20.45
60 & Above	3	2	1	0.38
Total	792	502	290	100.00

The religion wise break up of migrants engaged silver smithy at Hupari is given in the following table.

TABLE NO.3.11

THE RELIGION WISE BREAK UP OF MIGRANTS

Religion	No. of migrant workers			
	Persons	Males	Females	Percentage
Hindu	579	353	226	73.11
Jain	150	110	40	18.94
Muslim	61	39	22	7.70
Christian	2	-	2	0.25
Total	792	502	290	100.00

3.11 ECONOMICS OF THE CRAFT :

The cost of production of an article not only includes cost of raw material and wages of labour but such other items as depreciation of tools and implements, rent of land and buildings, interest on loans, etc. In case of silver ornaments at Hupari, it was found that no regular account books were maintained to show cost of production. Secondly, a particular unit of production viz. an ornament is so small that it was rather difficult to apportion the total costs. The manufactures, however, informed us that they were merely rendering services to the traders and merchants who bring the silver and pay a fixed amount as wages to proprietors of karkhanas. Thus these wages vary from ornament to ornament and design to design and generally range from Rs. 26 to 35 per Kg of ornaments manufactured by the proprietors. Again the traders/merchants do not pay, it is reported, for the amount of alloy mixed with silver to get a certain degree of fineness. Thus, if 300 grammes of zinc is mixed with 700 grammes of silver only plus the wages of 1 Kg. of silver ornaments i.e. say between Rs. 26 to 35. The proprietor of the Karkhana has to meet all expenses from these wages i.e. wages of workers, other raw material like zinc etc. auxiliary material like navasagar, sulphuric acid etc. It has been reported to us that the proprietors get a margin of about Rs. 10 to Rs. 15 per Kg. of silver ornaments manufactured

by them after meeting all the expenses. An attempt was, however, made to obtain exact expenses on raw material, labour charges etc. on a few selected ornaments and on the basis of information given by the proprietors the results are shown in table No. 3.12.

TABLE NO.3.12

SELECTED ORNAMENTS ON THE BASIS OF INFORMATION

Particulars of expenses	Tordya for ankles weight 18 grams. Fineness 70/100 Rs.	Necklace weight 35 grams Fineness 70/100 Rs.	Ear rings weight 10 grams Fineness 50/100 Rs.	Gattan or knotted necklace weight 10 grams Fineness 50/100 Rs.
Raw material				
Silver	3.90	7.80	1.50	1.50
Auxiliary material	0.50	0.80	0.30	0.30
Labour charges	1.00	2.50	0.50	0.75
Others	0.10	0.25	0.10	0.20
Total	5.50	11.35	2.40	2.75
Sale Price	7.00	13.00	3.00	5.00

3.11.1 TOTAL PRODUCTION :

It is rather difficult to mention the total production of

silver ornaments at Hupari in a year because of the large number of establishments that manufacture the ornaments. However, from an approximate figure given by the manufacturers it is estimated that ornaments of about 50 lakh tolas are manufactured at Hupari valued at about Rs. 11.37 million in 1961-1962.

3.11.3 MARKET :

The ornaments manufactured at Hupari are marketed almost throughout India, but specially in towns and cities of North India, like Delhi, Kanpur, Allahabad, Lucknow, Banaras, Agra, etc. The traders and merchants from these towns place an order with the Karkhandars of Hupari who supply the ornaments as per specific design, fineness, etc. There are not much seasonal variations in the demand, though in the summer period, which is usually the marriage season, it goes up while in rainy season there is some slackness. Most popular ornaments are anklets (Tordi) necklace and hair pins etc. Ordinary chains, worn round the waist of babies are also in great demand. A few enterprising manufacturers undertake a study cum survey tour to explore new markets, introduce new designs, obtain new techniques of production etc. and in this respect the name of M/S Ingrole Bros. Comes foremost. They have also exported these ornaments abroad especially to U.S.A.

3.11.4 WAGES :

The craftsmen employed in this craft are paid either on monthly basis, daily basis or on piece wage basis also. However, majority, of the workers are paid on daily wage basis and these include those that are employed by the Atni section, Sut and Pashta section and Karkhana section. The female workers who prepare the chain and those who prepared the bittis are paid on piece wage basis. So also a majority of workers employed in press section are paid on the basis of output of work given by them in a day. The chart on page 25 shows the range of wages earned by workers belonging to different sections of the craft during 1960's.

TABLE NO. 3.13

WAGES

Type of Establishment	wages per day Skilled worker	Unskilled worker
Atni section	3.75 to 4.50	1.00 to 2.00
Wire drawing and strip drawing section (Sut and Pashta section)	2.00 to 3.35	1.00 to 2.00
Press section	1.90 to 3.75	0.88 to 1.50
Karkhana or Assembly Section	2.00 to 3.50	1.00 to 1.25
Chain making	Rs. 0.88 per 200 gramms of chain	--
Bitti making	Rs. 0.56 per 200 grammes of bittis	--

The craft works for about 11 months in a year and on the eve of Diwali (October-November) practically all work is suspended for a period of about one month. This facilitates the proprietors to settle all outstanding accounts with their customers as also with the workers. It is a convention at Hupari that if a worker/proprietor wants to leave his master/worker he cannot do so in the middle of the year but only on the eve of the Diwali festival. Many workers change their establishments on the eve of Diwali.

There is also a tendency among the proprietors to put an efficient worker on piece wage basis so that the total output is high per day. In such cases the rate of wages is also kept at a higher level.

Generally, it is seen that the workers are contented. Every saturday, which is a weekly market day of the village, is a holiday and all establishments are closed on this day.

R E F E R E N C E S

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